

THE VALIDITY OF FCAT LEVELS

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Executive Summary

In Florida, the Florida Comprehensive Assessment Test-Sunshine State Standards (FCAT-SSS) is used to make important educational decisions such as the promotion and graduation of students and determining how much money schools will receive. The present report examined the relationship of FCAT-SSS Achievement Levels and student academic performance.

The State of Florida's FCAT test data for the 2006 administrations were used for various analyses. The results show that Florida's secondary students compare favorably with a national sample and also maintain a consistent level of reading performance across grades on the FCAT-Norm-Referenced Test (FCAT-NRT). On the other hand, the students' reading performance appears to decline progressively across secondary grades as measured by the FCAT-SSS. These effects are not observed on the mathematics sections of the FCAT-NRT and FCAT-SSS.

Correlations of reading scale scores on the FCAT-NRT and FCAT-SSS are high across all grades and thus show that the two tests are in fact measuring similar constructs. Consequently, it can be inferred that the reading performances of secondary students are not actually declining as students advance through the secondary grades. Instead, it is possible to assume that the criteria for establishing FCAT-SSS reading Levels have been set to increasingly higher standards as students advance through the secondary grades.

THE VALIDITY OF FCAT LEVELS

With increasing emphasis, the annual standardized test results of public school students are being used to make high-stakes decisions. In Florida, the Florida Comprehensive Assessment Test - Sunshine State Standards (FCAT-SSS) is used to make important educational decisions such as the promotion and graduation of students and determining how much money schools will receive (Blanton, 2006). As an example, in 2006, the State of Florida approved a program which will make available 147.5 million dollars to reward top teachers (FDOE, 2006). It is expected that school districts will rely heavily on the FCAT-SSS when devising their teacher incentive plans.

FCAT-SSS results are often described in terms of Achievement Levels. Student results can range from Level 1 through Level 5 on the reading, mathematics, or science FCAT-SSS. A Level 3 or higher score is usually considered an acceptable level of performance and the student is considered proficient. FCAT-SSS Level results are used to make many of the high-stakes decisions described above.

The results of a recent evaluation report, which longitudinally examined the academic performance of students in a particular District program, raised questions about the validity of FCAT-SSS Levels (Abella, 2007). In particular, it was observed that the reading FCAT-SSS Levels of secondary grade students did not seem to correspond with other standardized measures of reading. The present report will attempt to more closely examine the relationship of FCAT-SSS Achievement Levels and student academic performance.

Method

The State of Florida's FCAT test data for the 2006 administrations was used for analysis. The State uses both the criterion-referenced version of the FCAT (FCAT-SSS mentioned earlier) and the norm-referenced version. The latter is known as the FCAT-NRT. Currently, the State uses a special form of the Stanford Achievement Test, 10th edition as the FCAT-NRT. The reading and mathematics results of the FCAT-SSS and FCAT-NRT were examined separately and all results were broken down by grade level ($n > 100,000$ per grade level). The correlations of the FCAT-SSS and FCAT-NRT scale scores were based on the 2006 test results of the Miami-Dade County Public School students ($n > 20,000$).

Results

FCAT-SSS: As shown in Figure 1, the percentage of students achieving a Level 3 or better score on the FCAT-SSS mathematics test steadily increases in the secondary grades (grades 6 through 10). Specifically, the percentage of secondary students scoring at or above Achievement Level 3 in mathematics increases from 53 percent in the 6th grade to 65 percent in the 10th grade.

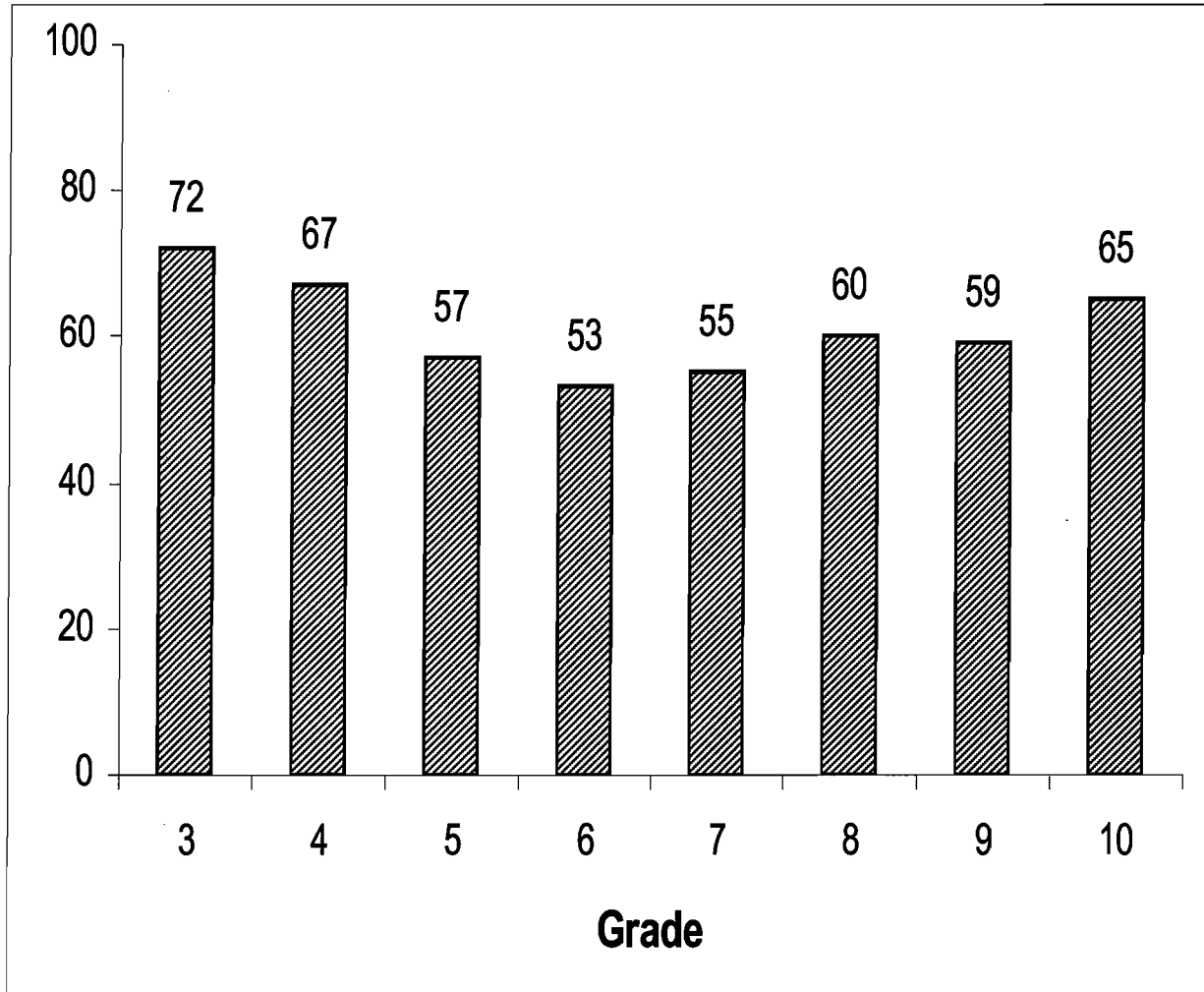


Figure 1. Percentages of students scoring within Achievement Levels 3-5 on the mathematics component of the 2006 FCAT-SSS.

In contrast, and as shown in Figure 2, the percentage of students achieving a Level 3 or higher score on the FCAT-SSS reading test steadily decreases in the secondary grades. Specifically, the percentage of secondary students scoring at Achievement Level 3 or above in reading decreases from 64 percent in the 6th grade to 33 percent in the 10th grade.

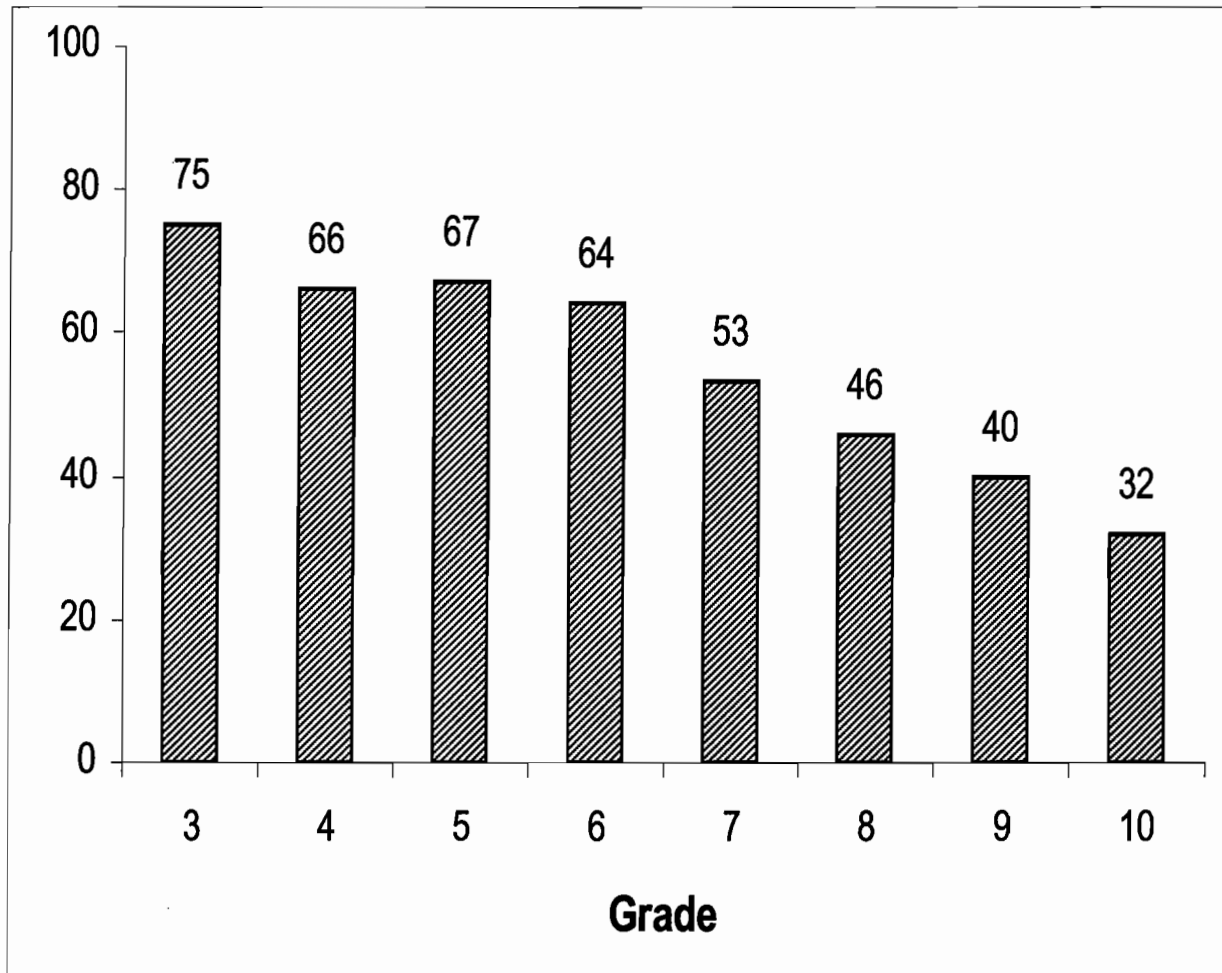


Figure 2. Percentages of students scoring within Achievement Levels 3-5 on the reading component of the 2006 FCAT-SSS.

This same effect was observed longitudinally in a recent evaluation report that tracked Miami-Dade County Public Schools students from the 2nd through the 10th grade (Abella, 2007). The steady decrease in the percentage of students scoring within Achievement Levels 3-5 on the reading component of the FCAT-SSS raises the following question: *Is the reading performance of students in the State deteriorating in the secondary grades?*

FCAT-NRT: The FCAT-NRT is a useful test for comparing the academic performance of Florida students to students nationwide. The FCAT-NRT is administered every year statewide and has normative performance data which allows for a direct comparison of the standing of Florida students in comparison to a representative sample of students throughout the nation.

Figures 3 and 4 show the median percentiles of Florida students for the 2006 test administrations of the FCAT-NRT in both reading and mathematics. Figure 3 shows that the mathematics percentile standings of Florida students remained relatively constant in the secondary grades, ranging from the 67th percentile in the 6th grade to the 70th percentile in the 10th grade.

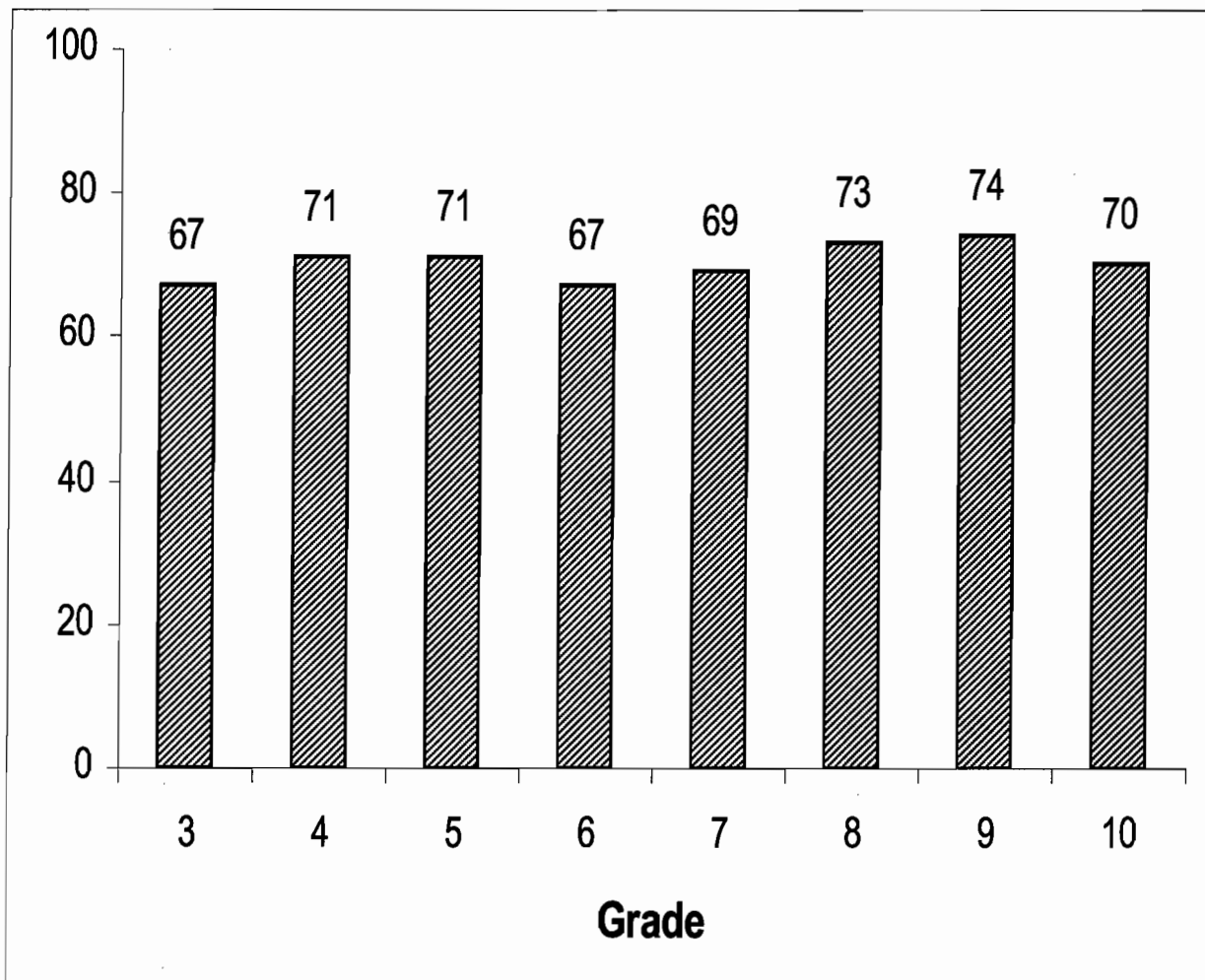


Figure 3. Median percentiles on the mathematics component of the 2006 FCAT-NRT.

Similarly, as shown in Figure 4, the reading percentile standings of Florida students also remain relatively constant in the secondary grades, ranging from the 67th percentile in the 6th grade to the 65th percentile in the 7th, 8th, and 9th grades and returning to the 67th percentile in the 10th grade.

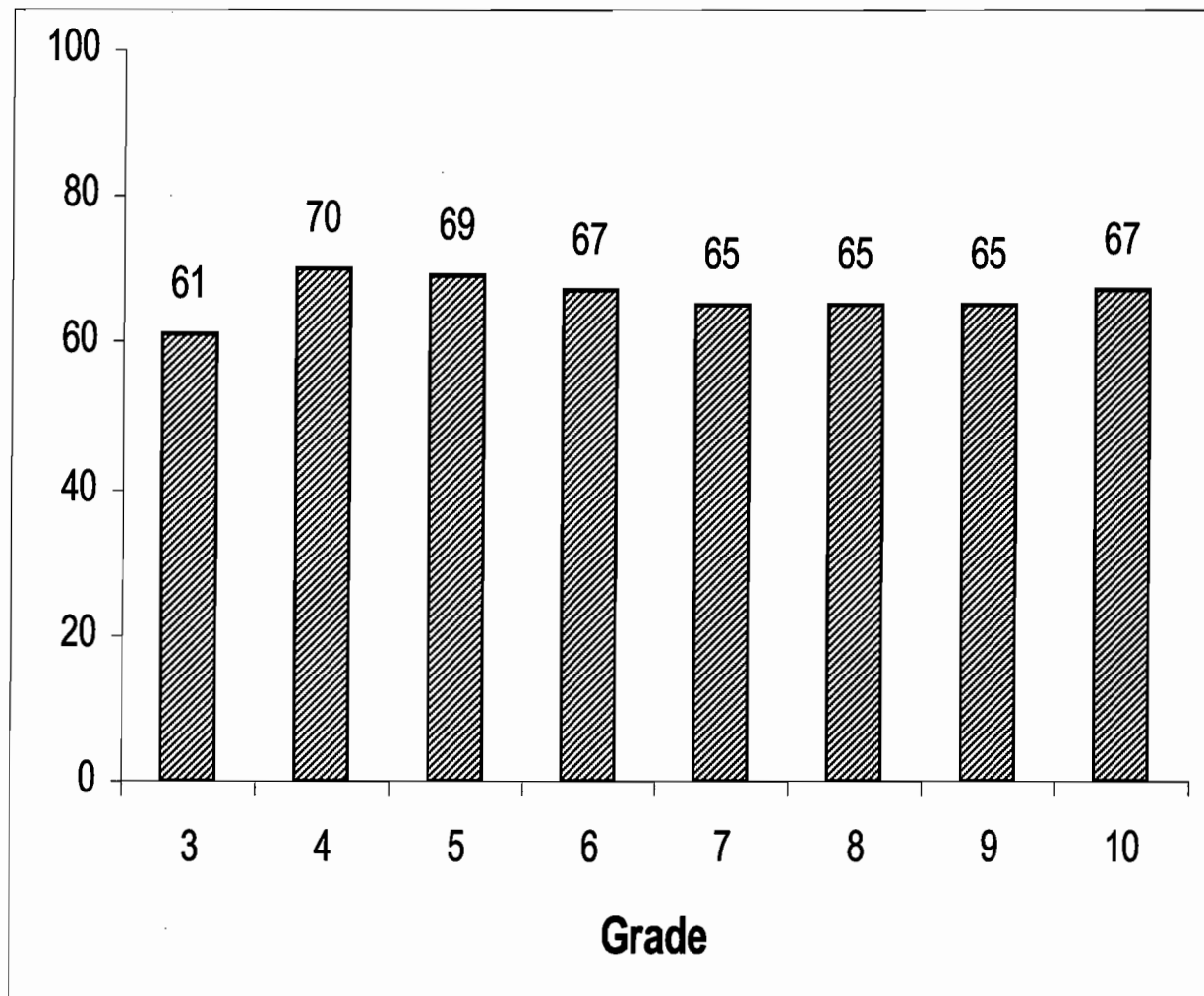


Figure 4. Median percentiles on the reading component of the 2006 FCAT-NRT.

Therefore, the FCAT-NRT results show that Florida's secondary students score above average, when compared to a national sample, in both math and reading. More importantly, the results show that Florida's secondary students do not exhibit large declines in either their math or reading FCAT-NRT results.

The contrasting results of the FCAT-SSS and FCAT-NRT reading tests suggest that the two tests may not be assessing the same content. The section that follows looks at this possibility.

Correlating the FCAT-SSS and FCAT-NRT Results: Not having access to individual student test scores statewide, the present analysis relies on the test scores of Miami-Dade County Public Schools (M-DCPS) students. The M-DCPS sample size is considerable (n > 20,000 per grade level). However, unlike the State, M-DCPS encompasses a population that is predominantly minority. Nevertheless, it is expected that the test results for the State will mirror the results of M-DCPS.

As shown in Table 1, the correlation of the FCAT-SSS and FCAT-NRT mathematics and reading scale scores are quite high. In mathematics, the correlations range between .73 and .85, depending on grade level. In reading, the correlations range from .79 to .84. These are considerably high correlations which lead to the conclusion that the two tests have concurrent validity. That is, the tests, and significantly the reading tests, measure similar constructs.

Given that the FCAT-NRT has a long and established history of test validity, as the Stanford Achievement Test, it can be said that the FCAT-SSS scale scores allow for valid interpretations of student achievement and that both tests measure similar content areas.

Table 1. Correlation of M-DCPS 2006 FCAT SSS and FCAT-NRT Scale Scores.

Grade	Mathematics	Reading
3	.85	.84
4	.83	.84
5	.84	.84
6	.82	.84
7	.81	.83
8	.82	.83
9	.80	.79
10	.73	.80

Conclusion

The present results provide conflicting information concerning the reading performance of Florida's secondary students on standardized tests. On the one hand, students compare favorably with a national sample on the FCAT-NRT and also maintain a consistent level of performance across all secondary grades. On the other hand, the students' reading performance appears to decline progressively across secondary grades as measured by the FCAT-SSS. These effects are not observed on the mathematics sections of the FCAT-NRT and FCAT-SSS.

Correlations of reading scale scores on the FCAT-NRT and FCAT-SSS are high across all grades and thus show that the two tests are in fact measuring similar constructs. Consequently, it can be inferred that the reading performances of secondary students are not actually declining as students advance through the secondary grades. Instead, it is reasonable to infer that the criteria for establishing FCAT-SSS reading Levels have been set to increasingly higher standards as students advance through the secondary grades.

As noted earlier, the FCAT-SSS is of central importance in making high-stakes decisions at the school and teacher levels. Given the above results, it would appear that middle and senior high schools, as compared to elementary schools, would be at a disadvantage when relying on the FCAT-SSS Achievement Levels for school accountability purposes. In summary, it might prove prudent to examine closely the validity of the FCAT-SSS Levels before continuing to rely heavily on its use.

References

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