Research Brief
Research Services

Vol. 0803
February 2009

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Performance Flags: Using Local Norms to Highlight Needy Students and Exceptional Teachers

References to FCAT results dominate the appraisal of our students, schools, and districts. Yet, with all these reports of scores and grades it is not easy to spot extraordinary performance. For any chosen school we can get the percent of students scoring at Level 3 or above, but how does that school rank among all our schools? We may know if a school is an A or B school or worse, but are its students progressing at a slower or faster rate than similar schools? Which schools are doing an exemplary job with their level of students and which students are in need of special attention?

To address these kinds of questions we need a different way of looking at FCAT performance. We need a means of describing achievement relative to an appropriate reference group. We need to take into consideration not only students' current standing, but their growth among their achievement level peers. And, we need these new performance markers to be easy to understand and quick to identify.

It is the purpose of this paper to introduce Performance Flags – a new look to FCAT statistics that can help our district in the simple and speedy detection of exceptional achievement at a school, grade, or classroom level. These Performance Flags, an outgrowth of Local Norms, are color-coded to readily differentiate the extraordinary from the ordinary. They are founded on comparisons within our own school district and display both absolute and relative standing among students, classrooms, and schools. They can be applied at various levels, compared easily to discover trends, and can hopefully contribute substantively to program evaluation, policy making and improvement planning.

Understanding Local Norms

The concept of Local Norms has been under development in our district over the last few years. There are two kinds of Local Norms – Status Norms, and Growth Norms. Generally speaking, a Status Norm reflects the student's current absolute standing in FCAT performance within his/her grade-level classmates throughout the district. A Growth Norm, on the other hand, reflects the student's current relative standing in FCAT performance within a subpopulation of his/her grade-level classmates that had similar FCAT scores the previous year. Thus, the Status Norm is a percentile within grade level, and a Growth Norm is a percentile within the previous year's performance group.

Status Norm: *your percentile standing among all students in the district.*

Growth Norm: *your percentile standing among all students at your starting performance level.*

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An Example of a Student's Norms

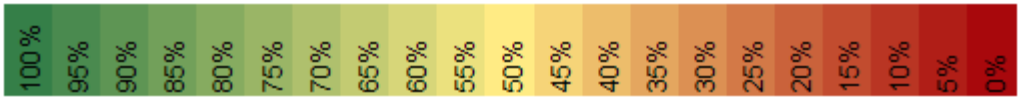
Let's first look at the Status Norm for a hypothetical student. Suppose a student scored 274 in 5th Grade FCAT Reading this year. Among all students in 5th Grade throughout the district, this score ranks at the 31st percentile, **considerably below average for the district**. This student's Status Norm would then be 31.

The Growth Norm is a bit more complicated. We must first take into account this student's standing the previous year, in 4th Grade. As it happened, this student scored 269 that year, which was at the 21st percentile (that is, his last year's Status Norm was 21). We define a reference group for this student as all of his fellow students who scored between the 20th and the 30th percentile in 4th Grade. Now, among that set of students, his current FCAT score of 274 is at the 71st percentile. Thus, his Growth Norm is 71, **considerably above the average for his performance starting group**.

In a similar fashion, we can calculate a Status Norm and a Growth Norm for every student. The Status Norm is the percentile standing for this year's score among all his grade-level classmates. The Growth Norm is the percentile standing for this year's score among his performance peers, those students who scored in the same decile group the previous year.

Performance Flag Reports

To make mean percentiles easy to interpret, they are color-coded on a graded three-color scheme from green (above average) to yellow (average) to red (below average) according to the legend below.



Above Average Performance **Below** Average Performance

Using this kind of reporting scheme, it is easy to spot exceptional performance. As an example, on the next page are the Performance Flags for all M-DCPS high schools on the 2007 FCAT Reading Test.

School-Level Report

It is easy to spot exceptionally good as well as exceptionally poor performances among schools with this kind of report. Although there is a natural tendency for the Status Norm of any given year to be related to the Growth Norm for that year (the higher your score in the district, the higher your score in your comparison group), there are notable exceptions. Note also that these norms are for the 9th Grade and 10th Grade combined – something that is easy to do with this type of Local Norm.

School Location #	Status Norm	Growth Norm
School A	67%	56%
School B	76%	66%
School C	45%	49%
School D	72%	61%
School E	10%	15%
School F	10%	9%
School G	55%	48%
School H	10%	16%
School I	66%	52%
School J	72%	57%
School K	6%	18%
School L	60%	55%
School M	61%	47%
School N	61%	68%
School O	34%	46%
School P	53%	49%
School Q	75%	54%
School R	51%	49%
School S	90%	75%
School T	83%	67%
School U	41%	45%
School V	63%	50%
School W	41%	50%
School X	62%	56%
School Y	31%	41%
School Z	64%	56%
School AA	90%	69%
School AB	57%	58%

Classroom-Level Report

Perhaps more interesting, this kind of Performance Flag report can be generated for individual classrooms and teachers. The figure to the right presents the Local Norms for students from one classroom in a selected high school. These students are arranged from lowest to highest Growth Norms. The averages for the entire class, at the bottom of the table, reveal that, despite having a slightly below average class in terms of absolute performance (Status Norm = 42%), this teacher's students have performed slightly above average compared to their performance peers (Growth Norm = 55%). Furthermore, the norms for individual students can help this teacher see which cases have been particularly successful.

	Status Norm	Growth Norm
Student A	2%	15%
Student H	13%	20%
Student Q	33%	20%
Student S	55%	20%
Student E	20%	30%
Student O	44%	46%
Student D	4%	46%
Student K	5%	55%
Student B	42%	55%
Student C	22%	57%
Student J	85%	63%
Student N	57%	69%
Student M	65%	71%
Student R	23%	74%
Student P	76%	75%
Student F	75%	75%
Student G	45%	81%
Student I	77%	82%
Student L	61%	91%
Total Class	42%	55%

Conclusions

The Status Norms and Growth Norms for all students can be calculated on a regular basis. These norms, for both FCAT Reading and Mathematics, can easily be color-coded and presented as Performance Flags. These Performance Flags can be aggregated at any level and can be used to make meaningful interpretations of trends and quick identifications of exceptional performance. It is hoped that they will contribute to the improvement of instruction and provide guidance for policy development and program enhancement.

METHODOLOGICAL NOTE

A Few Statistical Properties of Local Norms

Because the Growth Norms are calculated within each group defined by the span of 10 percentile points in the previous year's score distribution, they are essentially independent of the student's performance starting point. This means that we do not have to concern ourselves with "regression toward the mean" effects. No matter where a student scored the previous year, his Growth Norm is unconstrained and uncorrelated.

Once the norms are computed for all students, they can be averaged at any level – school, grade level within school, course within school, teacher within school within course, etc. Although, technically, the percentiles themselves should not be averaged, the z-scores upon which these percentiles are determined can be averaged. In addition, since these scores are computed from the standardized scores across the district, they can be interpreted as "effect size" measures. This means that, while exercising normal cautions, the averages for any subgroup can be meaningfully interpreted and compared. (These and other statistical details are fully explained in a Technical Paper "Calculating FCAT Local Norms," accessible from the district website at http://drs.dadeschools.net/LiteratureReviews/LR.asp.)

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