RESEARCH BRIEF
Research Services

Predicting FCAT Performance

Introduction

Student scores on the FCAT tests are increasingly being used for administrative purposes. Promotion and placement decisions are largely governed by FCAT performance. Although efforts are made to make the FCAT scores available as soon as possible, for some purposes they are not on hand when needed. Additionally, as the importance of FCAT scores increases, it becomes more desirable to have some kind of early indication of how students are expected to score at each grade level, even before the tests are administered. In response to these growing needs for anticipation of FCAT scores, this paper presents a method for predicting FCAT scores based on the previous year's performance.

Methodology

Although many variables could be included in a prediction process, the simplest approach is to use the single previous FCAT score to predict the next. The statistical method employed here was simple linear regression. The equations were created using the relationships of FCAT Reading and Mathematics scores in 2003 to those in 2004, respectively. Correlations of FCAT scores between years averaged approximately .80 across all grade levels — sufficiently strong to yield meaningful estimates.

The Equations

The following equations can be used for predicting FCAT scores for the 2005 administration. As a general rule of thumb, approximately 50 percent of the time these equations should yield estimates that are within 20 points of actual results.

Reading
116.45 + ((3rd grade score) * .663) = predicted 4th grade score
31.76 + ((4th grade score) * .843) = predicted 5th grade score
56.02 + ((5th grade score) * .816) = predicted 6th grade score
69.82 + ((6th grade score) * .776) = predicted 7th grade score
58.99 + ((7th grade score) * .803) = predicted 8th grade score
64.52 + ((8th grade score) * .770) = predicted 9th grade score
68.13 + ((9th grade score) * .784) = predicted 10th grade score

Mathematics
103.64 + ((3rd grade score) * .665) = predicted 4th grade score
109.66 + ((4th grade score) * .720) = predicted 5th grade score
-1.80 + ((5th grade score) * .929) = predicted 6th grade score
58.70 + ((6th grade score) * .791) = predicted 7th grade score
88.66 + (7th grade score) * .753) = predicted 8th grade score
11.34 + ((8th grade score) * .922) = predicted 9th grade score
118.23 + ((9th grade score) * .685) = predicted 10th grade score

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Example: a 7th grade student had a score of 260 in
Reading last year as a 6th grader.
What would be his/her predicted score in 7th grade?
*69.82 + (260 * .776) = 271.58*
Predicted score in 7th grade is 272

This information could then be used by the classroom teacher to target students for appropriate remediation.

Cutoff Scores

Using the above equations, we can compute the minimum values from one year that would predict whether a student is likely to score in level 3 or above the following year. For this data, predictions of this type should be correct approximately 80 percent of the time.

Reading
If 3rd grade score was at least 275, predict level 3 or higher in 4th grade.
If 4th grade score was at least 302, predict level 3 or higher in 5th grade.
If 5th grade score was at least 294, predict level 3 or higher in 6th grade.
If 6th grade score was at least 297, predict level 3 or higher in 7th grade.
If 7th grade score was at least 313, predict level 3 or higher in 8th grade.
If 8th grade score was at least 334, predict level 3 or higher in 9th grade.
If 9th grade score was at least 330, predict level 3 or higher in 10th grade.

Mathematics
If 3rd grade score was at least 292, predict level 3 or higher in 4th grade.
If 4th grade score was at least 300, predict level 3 or higher in 5th grade.
If 5th grade score was at least 341, predict level 3 or higher in 6th grade.
If 6th grade score was at least 313, predict level 3 or higher in 7th grade.
If 7th grade score was at least 294, predict level 3 or higher in 8th grade.
If 8th grade score was at least 309, predict level 3 or higher in 9th grade.
If 9th grade score was at least 287, predict level 3 or higher in 10th grade.

Cautions

There are many reasons why these predictions may not be proven correct. First, they are built on previous years' relationships and the associations will not be exactly the same. The unreliability in the scores, themselves, puts limits on predictive success. Furthermore, it is every student's ambition and every teacher's hope that the student will perform better than expected in any given year. Any extraordinary effort or especially effective program would, hopefully, result in the student exceeding these predictions. However, in the absence of other information and under pressing time constraints, these predictions should be useful.