JEOC BRIEF

April 19, 2018

Value-Added in Ohio

Background. SAS Value-Added services have been used in Ohio for several years yet the Value-Added topic often evokes confusion on the part of Ohio's education community. Much of the confusion is over the method used in computing individual student (or teacher, or building, or district) performance gains and that part of Ohio's Value-Added endeavors is beyond the scope of this effort. The focus of this paper is on some aspects of the interpretation of results for districts but most of the principles might apply to buildings as well.

What is Value Added?

In the simplest terms, Value Added is a measure of change in student achievement. Ohio's statewide assessment system consists of 21 grade level and subject area tests administered in the spring of each year. There are also fall and summer administrations for high school tests and a fall administration of the 3rd grade English Language Arts test. Each test is designed to produce both performance levels (as required by federal law) and scale scores for each student. Because each test is on a score scale specific to the content for the grade and subject area being tested, determination of growth or gain in student achievement cannot be computed by simply subtracting last year's scale score from this year's score to estimate how much a student's ability has grown. Further complicating matters, there is considerable missing data where students did not test in some administration.

In order to estimate growth from the data that Ohio collects, SAS offers a method that employs normal curve equivalents to determine change in achievement level for students. In the simplest terms, the SAS EVAAS process takes all the student scores in the state of Ohio in one year for one grade level and subject area and references each score using a unit called the normal curve equivalent. Then, the system compares those scores to prior year scores for students. In cases where there are missing scores for students, the EVAAS SAS model will use other data to estimate the growth in achievement for a student. In Ohio, in the past, this has been done using three years of assessment data. Recently, due to changes in the tests themselves, EVAAS SAS estimations have been based on one or two years' data.

The growth data generated by the EVAAS SAS estimations are Overall Composite Gains (OCGs) for each district and building. According to conversations with SAS staff, the OCGs are produced by the model along with Overall Composite Indices (OCIs) and are related by dividing the OCG by the standard error of the measure to get the OCI. It is the OCI that is used by Ohio Department of Education to assign a letter grade for the progress component of the Ohio Report Card.

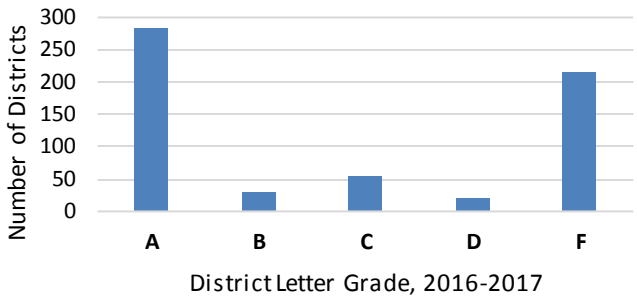
The assignment of letter grades in the Ohio Report Card.

In compliance with Ohio Revised Code, the Ohio Department of Education (ODE) confers letter grades on districts for the amount of academic performance growth that students show. ODE assigns a letter grade to districts for the Progress Indicator based on a scale in Ohio Revised Code applied to the Overall Composite Index calculated for each district. For example, ODE records for 2016-2017 provide the counts of letter grades for Ohio's 608 public districts shown in Table 1 and Figure 1.

Table 1. Counts of district letter grades for Value-Added growth in school year 2016-2017

District letter grade	Number of districts	Percent of districts
A	285	46.9
B	30	4.9
C	55	9.0
D	21	3.5
F	217	35.7
Totals:	608	100.0

Figure 1. Distribution of Value-Added Letter Grades

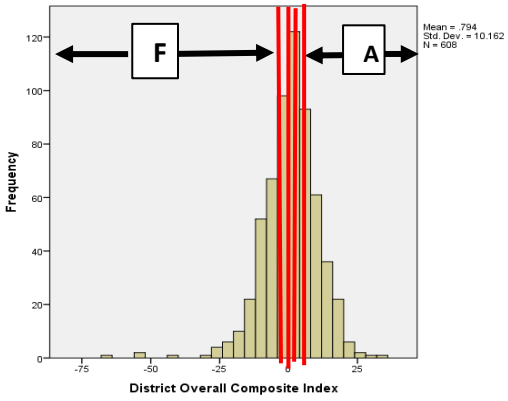


In an attempt to understand the distribution of the letter grades shown in Table 1, the Overall Composite Index – used to assign letter grades to districts - for 608 public districts was retrieved from ODE public documents and plotted as a distribution as shown in Figure 2. The cut scores (in standard error of the measure for the Overall Composite Index or OCI) for assigning letter grades for the Progress Indicator are defined in ORC 3302.03(A)(1)(e) and summarized in Table 2.

Table 2. Overall Composite Index (OCI) values as they relate to the progress measure in the Ohio Report Card

Condition	Assigned Grade
OCI ≥ 2	A
2 > OCI ≥ 1	B
1 > OCI ≥ -1	C
-1 > OCI ≥ -2	D
-2 > OCI	F

Figure 2. ORC 3302.03(A)(1)(e) cuts applied to the distribution of District OCI Cuts shown in Red



When these cuts are placed on the distribution of District Overall Composite Indices, they are so close to zero that districts are mostly divided into two groups – As and Fs. Figure 2 shows the cuts applied to the distribution of District Overall Composite Indices. Similar calculations are used for building report cards.