

Adjusting for Spanish to English Transition Teachers

Introduction

Students transitioning from Spanish tests to English tests typically score measurably lower on the English test in their first year. To ensure that no teachers or campuses were advantaged or disadvantaged by the number of these students in this transition, two processes have been put into place. First, a student-level adjustment was made so that the progress for the “Spanish to English” students (students who tested in Spanish last year and tested in English this year) was the same as the progress of the “English to English” students (students who tested in English last year and this year). This adjustment is made in two different ways depending on whether the multivariate response model (MRM) or univariate response model (URM) is used. Second, the teacher growth measure has been adjusted after the analyses if there is any existing relationship in that specific subject and grade that was not removed by the student-level adjustment.

Adjusting the Student Scores

In the MRM or gain model analysis, regression lines using Deming regression (aka Errors-in-Variables regression) were used to obtain a relationship from the current year Normal Curve Equivalents (NCEs) to the previous year NCEs for students who are transitioning and students who are testing in English both years. The Deming regression approach is used to take into account measurement error at the student level with both the current year score and the prior year score.

A set of regression lines is obtained for every subject and grade. The two regression lines are then adjusted to equate the two lines to one another by manipulating the prior year’s Spanish NCE for those students transitioning from Spanish to English.

In the URM or predictive model analysis, each student receives a predicted score that is utilized in the model. An additional covariate is introduced into this regression-based model that identifies the transition type of the student. Any group that is relatively large (Spanish to English, Spanish to Spanish, and English to English) is considered a transition type in the early grades. By certain grades, the Spanish to Spanish group of test-takers is almost non-existent; by a later grade, the Spanish to English group is non-existent. This covariate adjusts the expectation of students based on the type of transition they are making, which will ensure no advantage or disadvantage at the student level.

Adjusting the Teacher Gain Index after Analysis

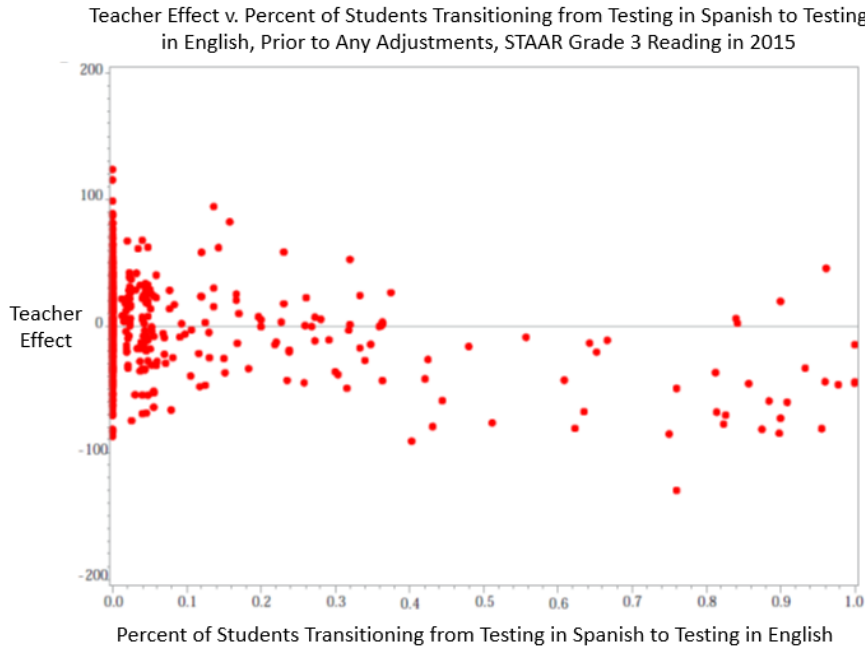
After the analysis has been run, in certain subjects and grades, the teacher gain index (TGI) may still have a relationship with the percentage of students transitioning from Spanish to English that year. To address this, a second adjustment is made to remove that relationship. This typically does not happen in many subjects and grades, but does seem to be more prevalent in certain subjects and grades. This adjustment, even though it will not have an effect on most subjects and grades, will be made in every applicable grade and subject with these types of transitioning students to ensure a consistent approach is used throughout.

To make this adjustment, a regression line is obtained for the percentage of students transitioning from Spanish to English that year with a teacher’s effect as the response variable. The teacher effect in the URM is just the teacher growth measure. The teacher effect in the MRM is the deviation from the district average. The residuals from that regression line will now be uncorrelated with the percentage of transitioning students. Since we are using teacher effect in each model, which will sum to 0 for given year/subject/grade, the residuals from the model can now be used as the new teacher effect. From these, new growth measures are generated that will ultimately give the new teacher gain index values.

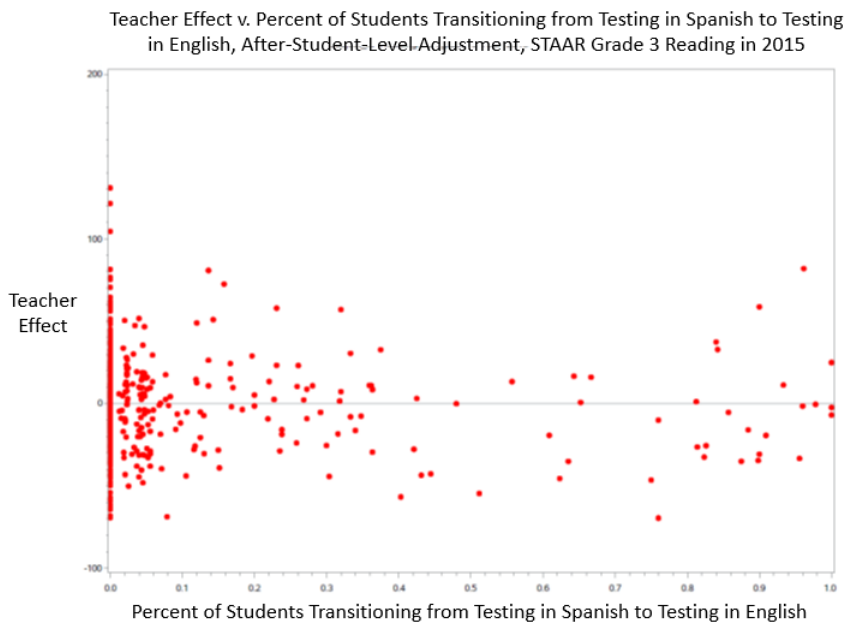
Examples of the Relationship

The following plots show the relationship between the teacher effect value-added measure and the percent of the teacher's students who are transitioning from testing in Spanish to testing in English. Each red dot represents one teacher, and the line represents a regression line of this relationship.

The following graph shows the relationship between teacher effect measures and the percent of students who are transitioning from testing in Spanish to testing in Grade 3 Reading in 2015, prior to any adjustments.



The graph below shows the same relationship for Grade 3 Reading in 2015 after the student-level adjustments have been made.



The final graph shows the relationship between teacher effect measures and the percent of students who are transitioning from testing in Spanish to testing in Grade 3 Reading in 2015 after both student-level and teacher-level adjustments have been made.

Teacher Effect v. Percent of Students Transitioning from Testing in Spanish to Testing in English, After-Student-Level and Teacher-Level Adjustments, STAAR Grade 3 Reading in 2015

