

Update on the Student-Level Growth Model and the 2018 Dashboard

**Analysis, Measurement, and Accountability
Reporting Division**

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Topics

- Update on Student-Level Growth Model
- Accountability Structure: Change vs. Growth
- New business rule on participation of English learners (ELs) on the **English language arts/literacy (ELA)** assessment
- Timeline for submitting data in the California Longitudinal Pupil Achievement Data System (CALPADS) for 2018
California School Dashboard (Dashboard)

Student-Level Growth Model

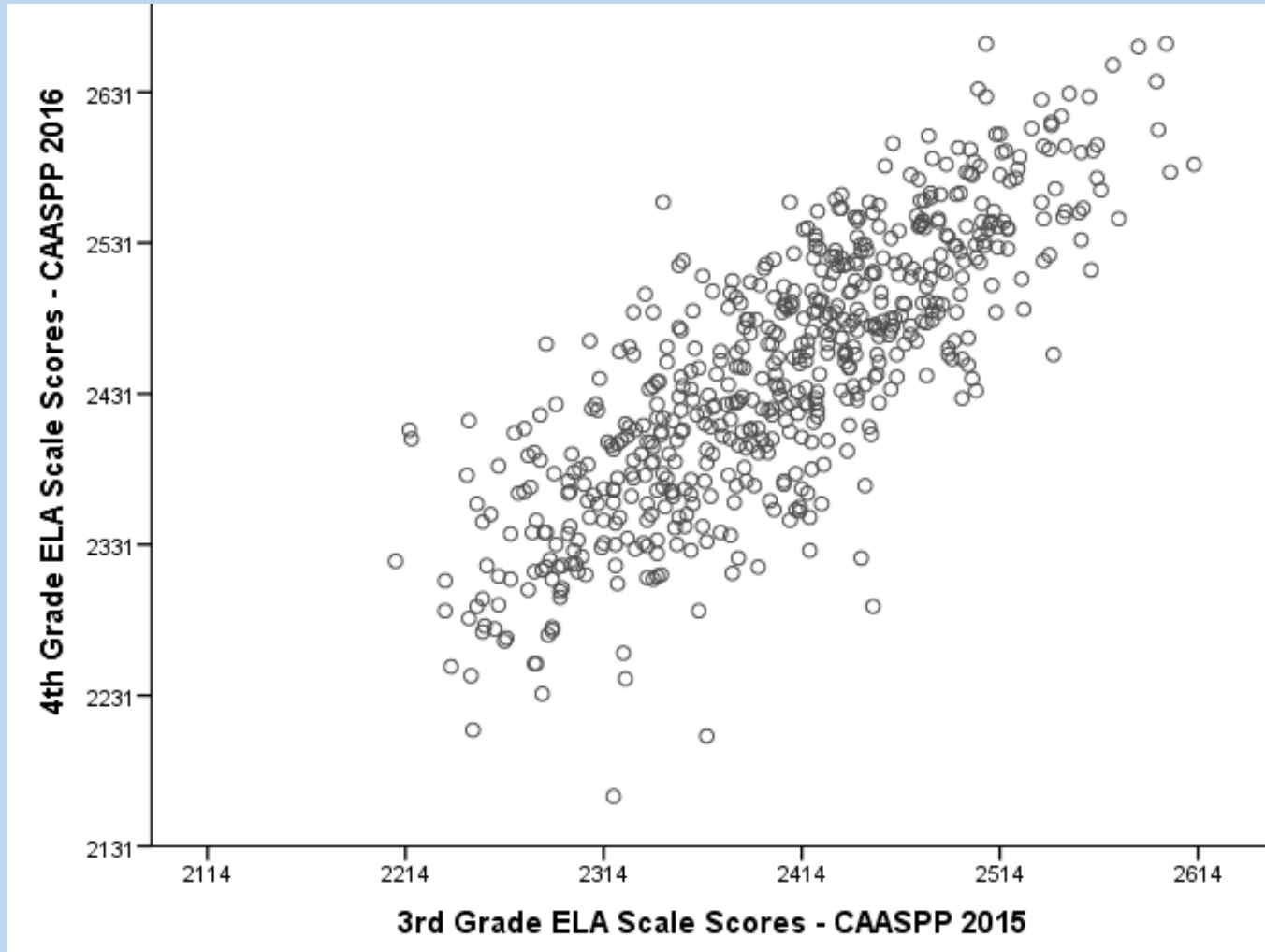
May 2018: Action on the Growth Model

- Three growth model options were presented to the State Board of Education (SBE) for consideration:
 - SBE approved the Residual Gain (RG) model for further exploration and expressed interest in using the growth model for other options outside of the California School Dashboard (Dashboard)

Residual Gain Model

- RG provides a relative measure of student growth on the current test scale.
 - It **predicts** the student's current-year score in either mathematics or ELA using the student's prior-year mathematics *and* ELA scores.

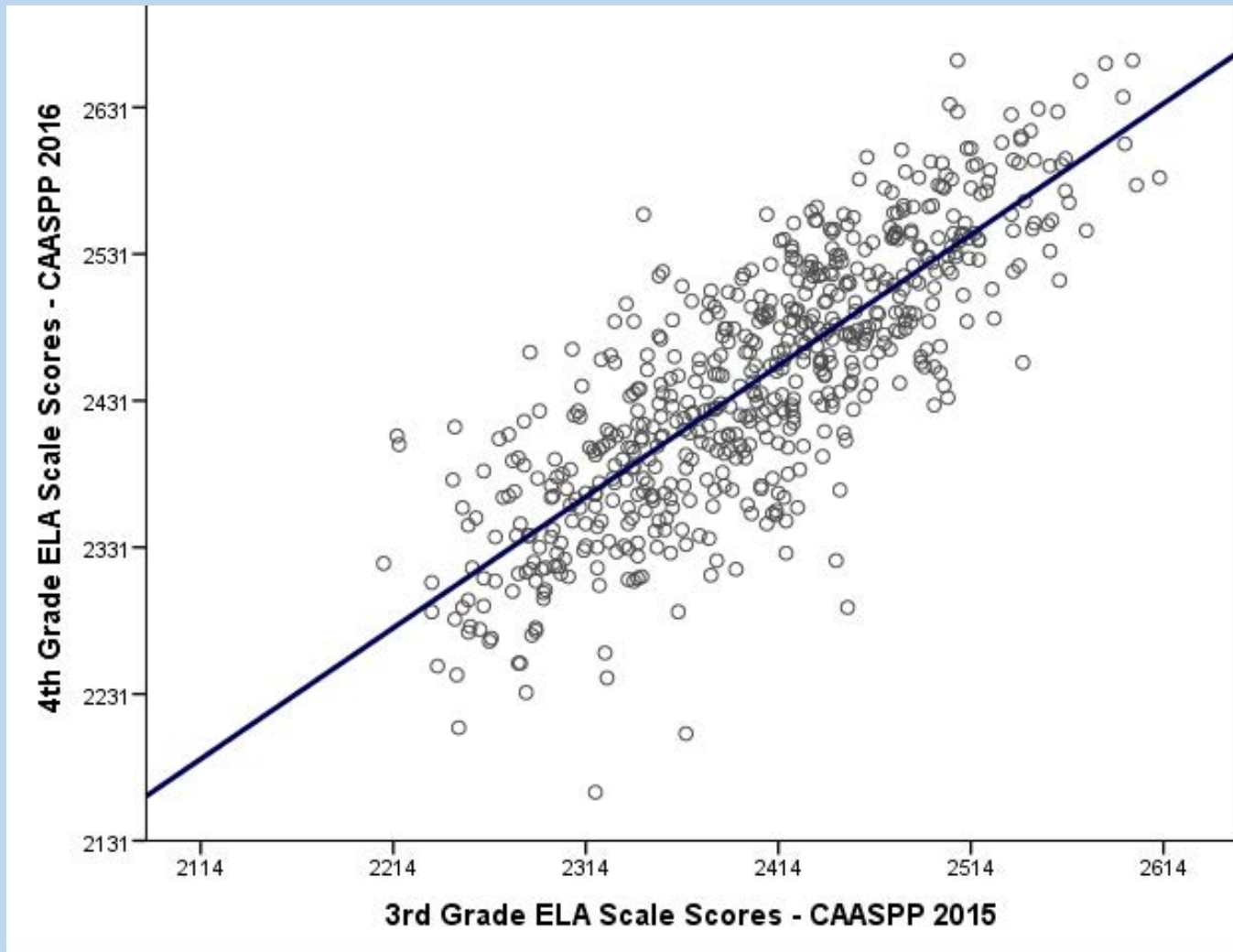
How Does RG Work: Scatter Plot of Scores



This is a scatter plot of student English Language Arts (ELA) scale scores. Each student is represented by a dot on the scatter plot. The x-axis reflects their 3rd grade score on the 2015 ELA CAASPP with a score range of 2114 to 2614. The y-axis reflects their 4th grade score on the 2015 ELA CAASPP with a score range of 2131 to 2631.

This is a manufactured example of 1,000 student test scores and none of the data is real.

How Does RG Work: Line of Best Fit

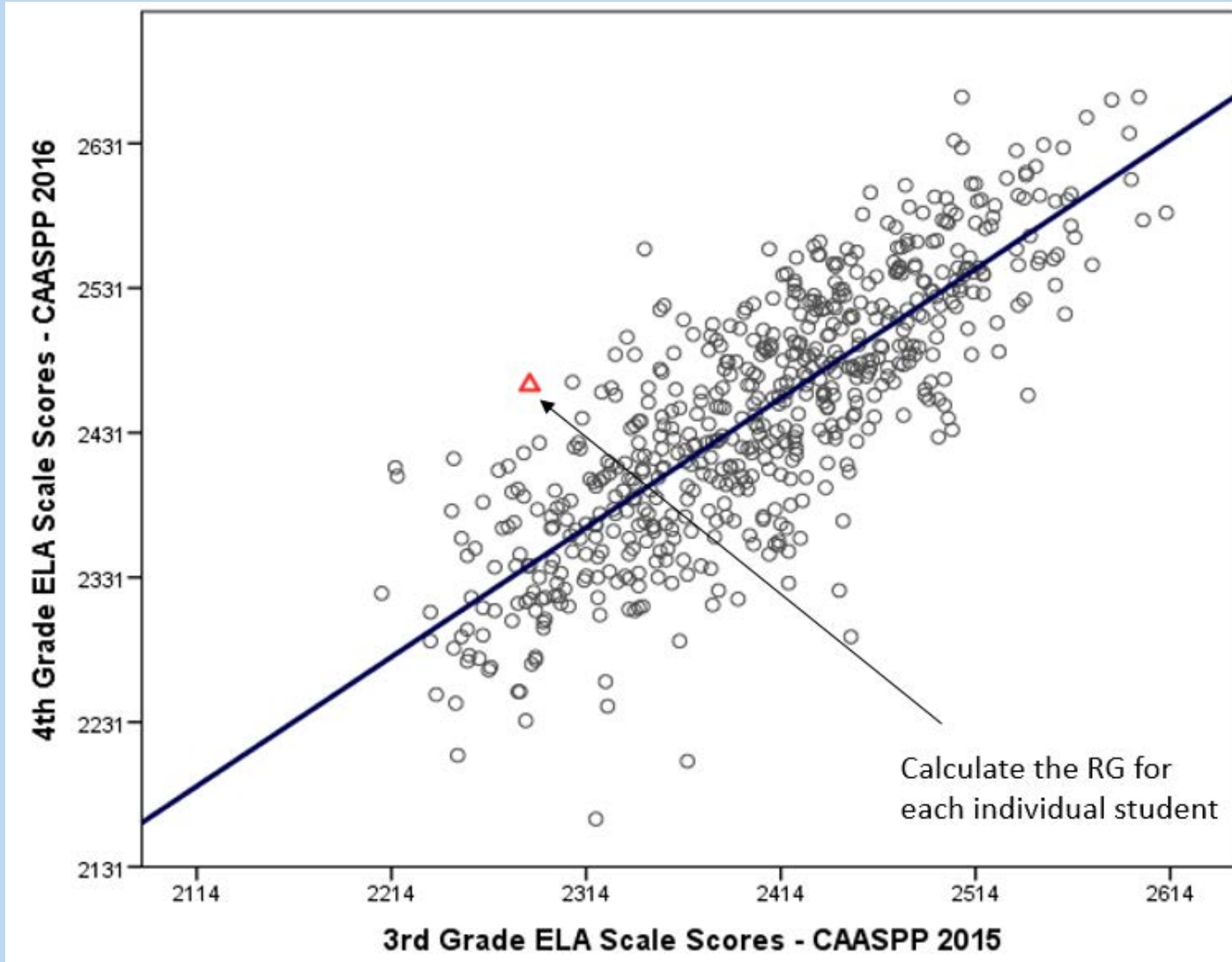


This is a scatter plot showing 1,000 student test scores. Each student is represented by a dot on the scatter plot. The x-axis reflects their 3rd grade score on the 2015 English Language Arts CAASPP. The y-axis reflects their 4th grade score on the 2015 English Language Arts CAASPP.

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A line of best fit is drawn through the dots.

How Does RG Work: Calculate RG for Each Student



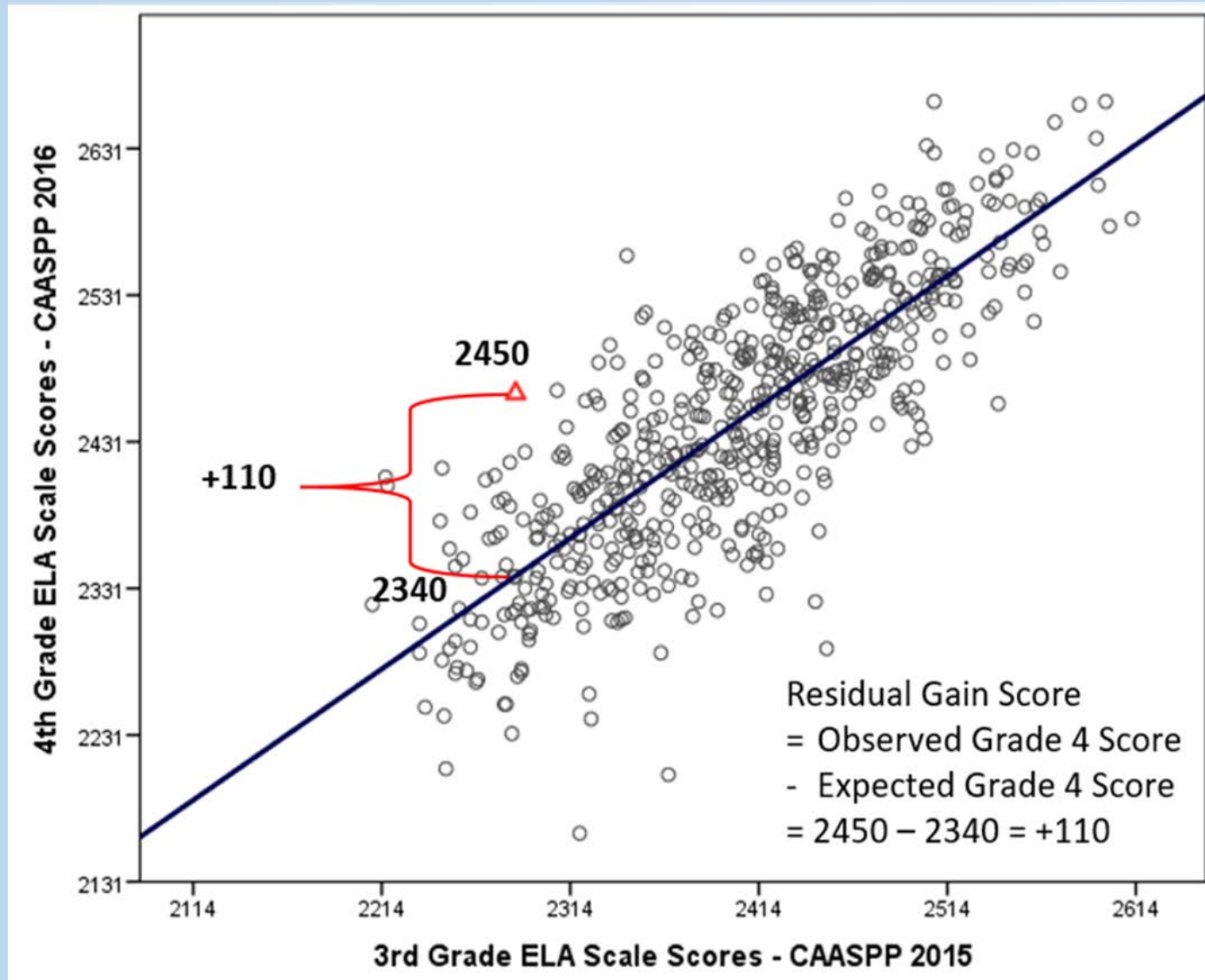
This is a scatter plot showing 1,000 student test scores. Each student is represented by a dot on the scatter plot. The x-axis reflects their 3rd grade score on the 2015 English Language Arts CAASPP. The y-axis reflects their 4th grade score on the 2015 English Language Arts CAASPP.

This is a manufactured example of 1,000 student test scores and none of the data is real.

A line of best fit is drawn through the dots.

A single student score is highlighted with an x-value of 2300 and a y-value of 2450.

How Does RG Work: Results for One Student



This is a scatter plot showing 1,000 student test scores. Each student is represented by a dot on the scatter plot. The x-axis reflects their 3rd grade score on the 2015 English Language Arts CAASPP. The y-axis reflects their 4th grade score on the 2015 English Language Arts CAASPP.

This is a manufactured example of 1,000 student test scores and none of the data is real.

A line of best fit is drawn through the dots.

A single student score is highlighted with an x-value of 2300 and a y-value of 2450. It is 110 above the line of best fit.

The residual gain score is calculated by subtracting the y-value of the line of best fit, which is 2340, from the y-value of the student's score, which is 2450. This student would have a residual gain score of 110.

Accountability Structure: Change vs. Growth

The State Accountability Structure

- The accountability system was design to consider both current performance (Status) and improvement from year to year (Change)
- To accomplish this goal, the five by five grid was developed:
 - Examined the distribution of performance for Status and Change
 - Set five cut score ranges for both Status and Change
 - Combine Status and Change to obtain one of five performance levels (e.g., colors)
- The established cut scores will remain in place for several years to provide all schools the opportunity to demonstrate improvement (unless the annual review may reveal revisions are necessary).

Continuous Improvement

- The expectation is that all schools and LEAs improve their Status and Change over time, which will in turn, improve their performance level. For example:
 - A school with a Red performance level would need to improve each year to increase their status and performance level (e.g., Red to Yellow)

The State's "Distance from Level 3" 5x5 Matrix: Mathematics

District Math Academic Indicator – Distance from Level 3

Level	Change: Declined Significantly by more than 15 points	Change: Declined By 3 to 15 points	Change: Maintained Declined by less than 3 points or Increased by less than 3 points	Change: Increased by 3 to less than 15 points	Change: Increased Significantly By 15 points or more
Status: Very High 35 points or higher	Green	Green	Blue	Blue	Blue
Status: High zero to 34.9 points	Green	Green	Green	Green*	Blue
Status: Medium -25 to less than zero	Yellow	Yellow	Yellow	Green*	Green
Status: Low -25.1 to -95 points	Orange	Orange	Orange	Yellow	Yellow
Status: Very Low -95 points or lower	Red	Red	Red	Orange	Orange

2019
Status = -20
Change = +8

2018
Status = -28
Change = +12

Fall 2017
Status = -40
Change = -4

An example of a school that improved on their performance level placement on the 5-by-5 color table for the Mathematics Academic Indicator. In this example, the school improved their performance level from orange to yellow then green based on their Status and Change from 2017 to 2019. Please refer to [5-by-5 color table](#) for a description of the Mathematic Academic Indicator 5x5 Matrix.

In 2017, their Status was -40 and their Change was -4 which placed them in the orange performance level.

In 2018, their Status was -28 and difference (Change) from 2017 was +12. This placed them in the yellow performance level.

In 2019, their Status was -20 and the difference (Change) from 2018 was +8. This placed them in the green performance level.

What Does Distance from Level 3 Change Tell Us?

- The Academic Indicator uses the Distance from Level 3 (DF3) methodology:
 - The results of DF3 show, on average, the needed improvement to bring the average student to Level 3 or the extent to which the average student exceeds Level 3.
 - **Change reflects the difference in how students in the current year performed on the Smarter Balanced Assessment compared to students in the prior year.**

What Does the RG Growth Model Tell Us?

- The RG provides growth for each student with current and prior year test scores (cohort of students) for grades 4 through 8
 - Whether or not student met their predicted test scores
 - How far the student was below the predicted score, or how much the student exceeded the predicted score
- Meeting expected growth does not necessarily mean a student is at or above level three
- Schools with low and high DF3 scores can show high growth

Change vs. Growth Data (ELA)

Student Group	Average Academic Status (DF3)	Average Academic Change (DF3)	Average Academic Growth (RG)
All Students	-17	-0.5	0.0
Socioeconomically Disadvantaged	-45.9	-1.3	-2.3
English Learners	-50.8	-1.6	-2.5
White	15.1	-0.5	1.8
African American	-60.9	-1.9	-4.7

SBE Future Action

- Requested more information at July 2018 SBE meeting:
 - What information does a student-level growth model provide?
 - What are the limitations of a student-level growth model?
 - How does it compare to the DF3 measures already included in the Dashboard?
 - How can a student-level growth model be incorporated in the accountability system (i.e., in the Dashboard for accountability, reporting only, etc.) ?

Next Steps

- **June 2018 Technical Design Group (TDG) Meeting:** Review RG model for needed technical refinements
- **July 2018 SBE Meeting:** Present growth model simulation results and any recommended refinements and discussion around expected metrics and indicator placement.
- **September 2018 SBE Meeting:** SBE approval of final model and methodology for possible inclusion in the 2018 Dashboard.

New Business Rules on ELA Participation Rate for English Learners New to the Country

Prior Business Rules

- English Learner (EL) students who first enrolled in a U.S. school *after April 15* of the prior year were exempt from taking the most current Smarter Balanced Summative Assessments for ELA.
 - Example: For the *2017* Dashboard, ELs enrolled in a U.S. school *after April 15, 2016* were exempt from taking the *2017* Smarter Balanced Summative Assessments for ELA.
- ELs enrolled for less than one year in a U.S. school and who opted to take the ELA assessment were counted in the participation rate.

New Business Rule

- For the 2018 Dashboard, all EL students enrolled in a U.S. school *after* April 15, 2017 are still exempt from taking the **ELA** assessment. However, these students will now be excluded from the calculation of the **ELA** participation rate, even if they opted to take the ELA assessment.

No Changes to Mathematics

- All ELs enrolled in a U.S. school for less than one year are still required to take the assessments for mathematics.
 - These students will still be counted in the mathematics participation rate.

Exclusion from DF3

- As in prior years, all ELs new to the country who take the ELA and/or mathematics assessment **will not** be included in DF3 calculations.

Timeline for Submitting Data in CALPADS for 2018 Dashboard

End of Year (EOY) Submission Dates

CALPADS Submission	Primary Data Submitted	State Indicator	Official Submission Window	Certification Deadline	Amendment Window
EOY 1	<ul style="list-style-type: none"> Course completion for grades 9–12 CTE* participants, concentrators, completers 	College/Career	May 14 to July 31, 2018	July 31, 2018	August 1-24, 2018
EOY 2	<ul style="list-style-type: none"> Program Eligibility/Participation Homeless students 	Used for All Indicators	May 14 to July 31, 2018	July 31, 2018	August 1-24, 2018
EOY 3	<ul style="list-style-type: none"> Student Discipline Student Absence Summary Exit Codes 	<ul style="list-style-type: none"> Suspension Rate Chronic Absenteeism Graduation** 	May 14 to July 31, 2018	July 31, 2018	August 1-24, 2018

*CTE: Career Technical Education

**Exit codes will be extracted from the Operational Data Store on September 15, 2018 to calculate the graduation rates