COLORADO
Department of Education

Growth-to-Standard: Update

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Topics to Cover

- Quick Recap of Growth to Standard creation so far and what we have left to do
- Compare 2016 Catch Up & Keep Up target scenario results and provide recommendation for moving forward

Growth-to-Standard Requirem

- According to 22-11-203(1)(a), CDE will calculate "what will constitute adequate longitudinal adequate growth for each student for that school year in each subject that is included in the statewide assessments… (b) The department shall use data available for longitudinal analysis to review and revise the calculation of adequate longitudinal growth as necessary"
- Required performance indicator for inclusion in annually-determined school and district rating calculations: "Student academic growth to standards, based on students progress toward meeting the state standards… or for students who meet grade-level expectations on the state standards, progress toward higher levels of achievement, if available, as measure by the statewide assessments." 22-11-204(1)(a)(III)

CMAS ELA and Math Growth t
Initial Theoretical Decision Po

- Should all targets be set to “Meets State Expectations” or should interim targets be used for Catch Up trajectories?
- Does the clock start over every year or should this be a set trajectory where we track student progress from the first test result? To be successfully on-track, do students have to maintain the gains made?
- How many years should students be given to attain their target performance level? Should that vary by grade, content area, and/or initial performance level?
- How should the Growth to Standard metric be reported on the performance frameworks?

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In Progress

- Does the clock start over every year or should this be a set trajectory where we track student progress from the first test result? To be successfully on-track, do students have to maintain the gains made?

TBD-January

- How many years should students be given to attain their target performance level? Should that vary by grade, content area, and/or initial performance level?

TBD-Jan/Feb

- How should the Growth to Standard metric be reported on the performance frameworks?

Should all targets be set to "Me
should interim targets be used

TAP recommended using interim targets and a "stepping-stone" model based on observed data and theoretical considerations.

- The proportions of students moving up in 1, 2, 3, and 4-years varies by content grade level and starting achievement level, but in general a fairly low (40-60%) of students are on track to move up one or more achievement levels.
- Maintaining these gains is quite difficult with nearly half of all students dropping back down to their original proficiency level at some point during the next 4 years.

Should all targets be set to "Me
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Pros	• Emphasizes the gains over the course of a year, rather than solely focusing on did students hit the minimum expectation for a grade level. • Resetting the clock acknowledges each school year as an independent learning instance and gives credit in the frameworks for the progress/contribution of that year/teacher/school
Cons	• Focus on reaching next proficiency level rather than grade level/college & career readiness standards • Can create unrealistic expectation of how often student expects to move up • Doesn't measure whether students are making consistent progress
Consider-ations	• Only realistic if evidence based targets are set, as regards the # of years of students take to move up and when they stop • Is there a way to think about "percentile improvement" such that you capture improvement even if not between levels? Caveat is that you would have to define "meaningful improvement" • How do we support educators and leaders to understand the clock gets reset every year? How do we help school staff wrap their heads around evaluating the service models for students with a constantly changing bar?

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On Track Target Student Growth Percentile Scenarios

Does the clock start over every year or should this be a set trajectory where we track student progress from the first test result? To be successfully on-track, do students have to maintain the gains made?

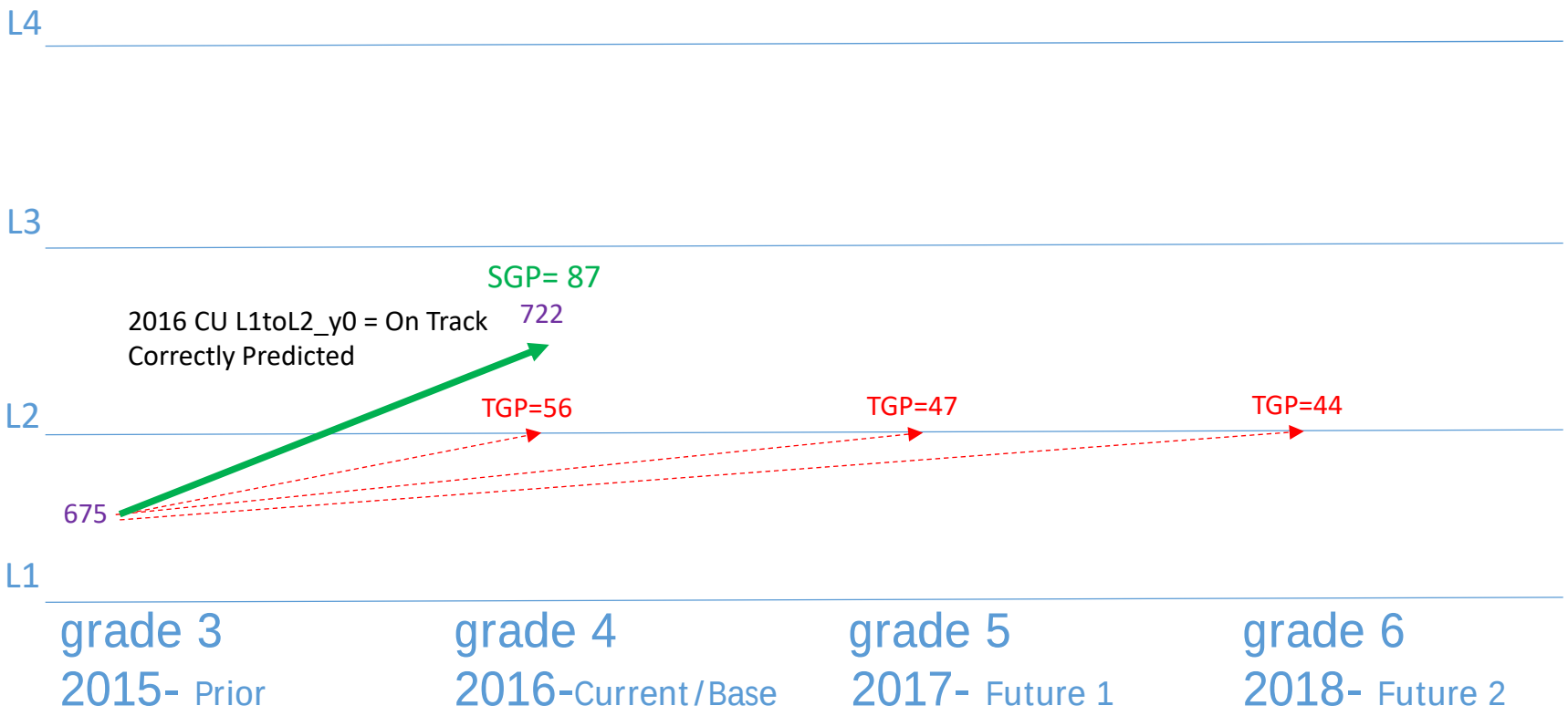
Hypothetical 2016 On Track Pr
3 Scenarios for Setting Target G

Within a stepping-stone model there are different possibilities for setting individual target student growth percentiles and on track predictions in the baseline year and then subsequent years and then tracking whether the predicted outcomes were correct. Using 2016 as the baseline year and tracking through the 2018 outcomes, these three target scenarios were explored:

- Maintain Initial 2016 Targets
- Maintain Initial 2016 Targets Until Attained, then Reset
- Reset Targets Every Year

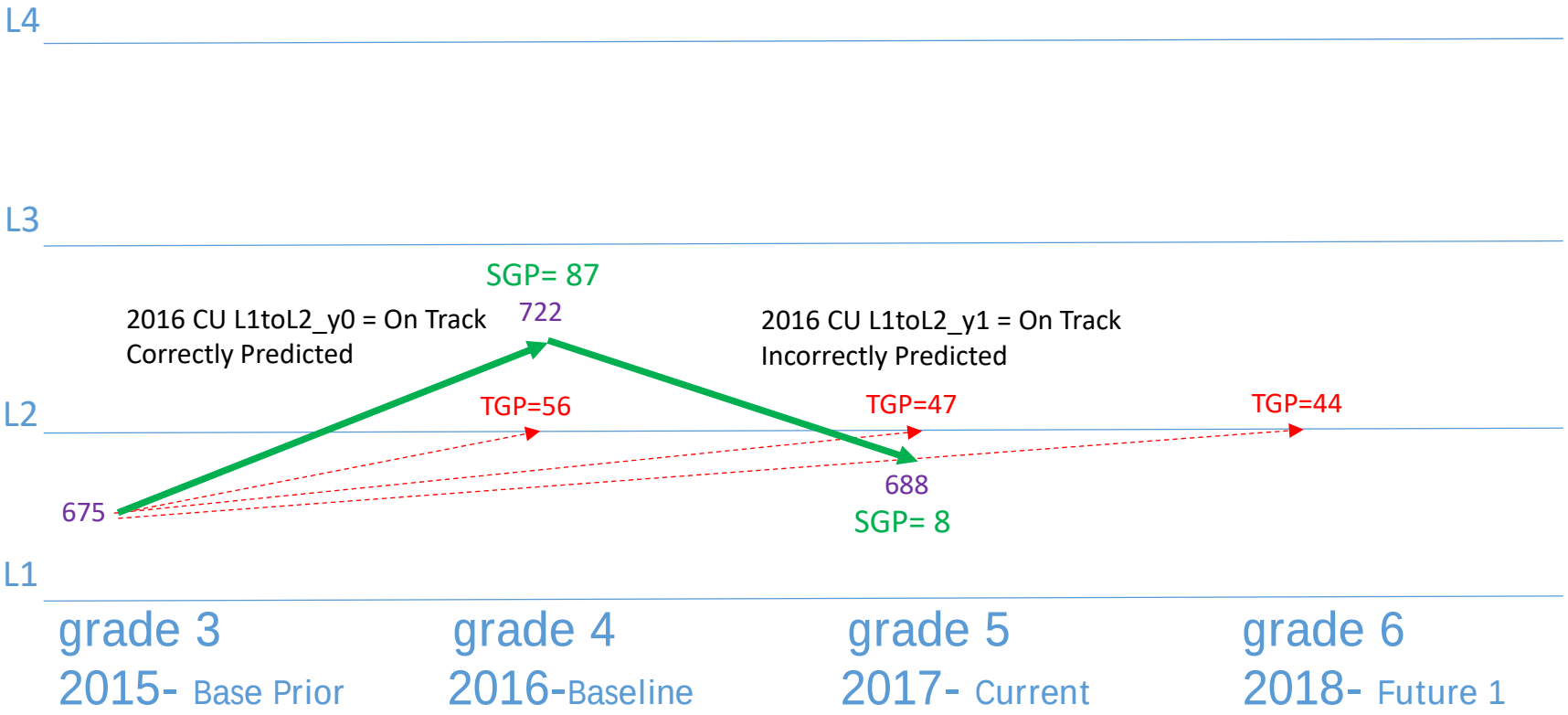
On Track Up Prediction Outco
Maintaining Initial 2016 Targe

The year 0 projection is always 100% accurate because we already know what happened between the prior and current year.



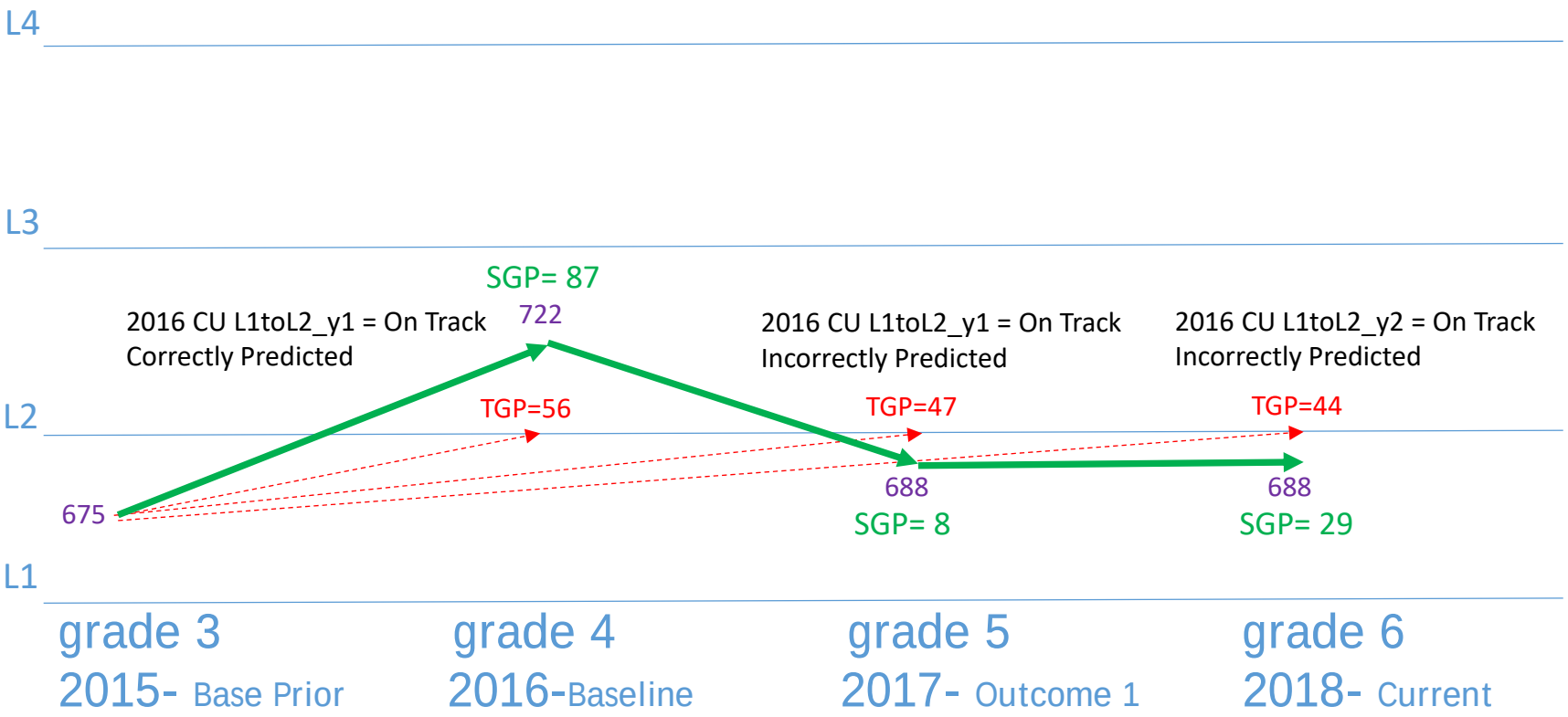
On Track Prediction Outcomes Maintaining Initial 2016 Targe

If we maintain the 2016 trajectory and target growth percentiles (TGPs) and compare these against 2017 outcomes, our predictive accuracy goes down, averaging 82.3% for ELA and 82.7% for Math, combining Catch Up and Keep Up across Elementary grades.



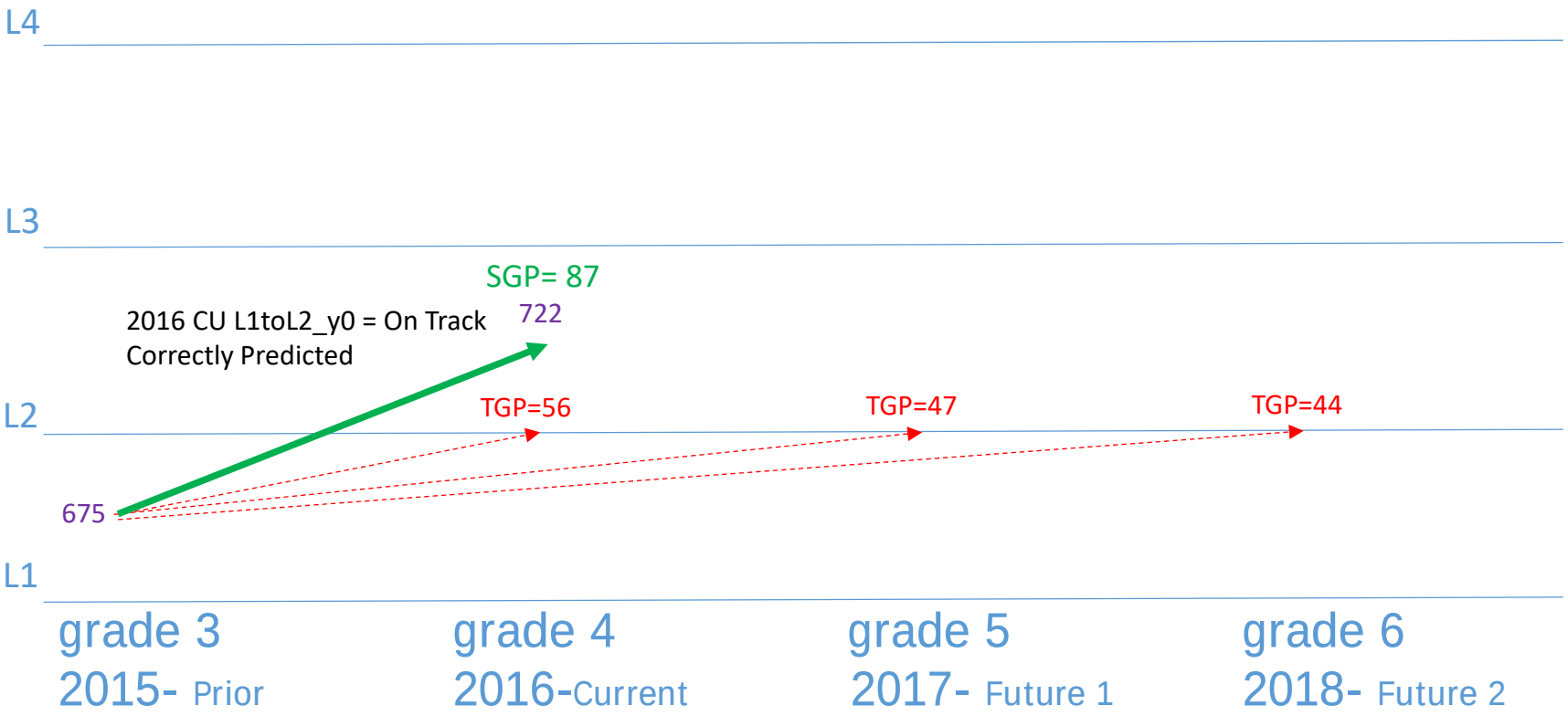
On Track Prediction Outcomes Maintaining Initial 2016 Targe

Comparing the 2016 trajectory and TGPs against the 2018 outcomes reduces the accuracy of our On Track predictions a little bit more, averaging 75.2% for ELA and 76.1% for Math combining Catch Up and Keep Up across Elementary grades.



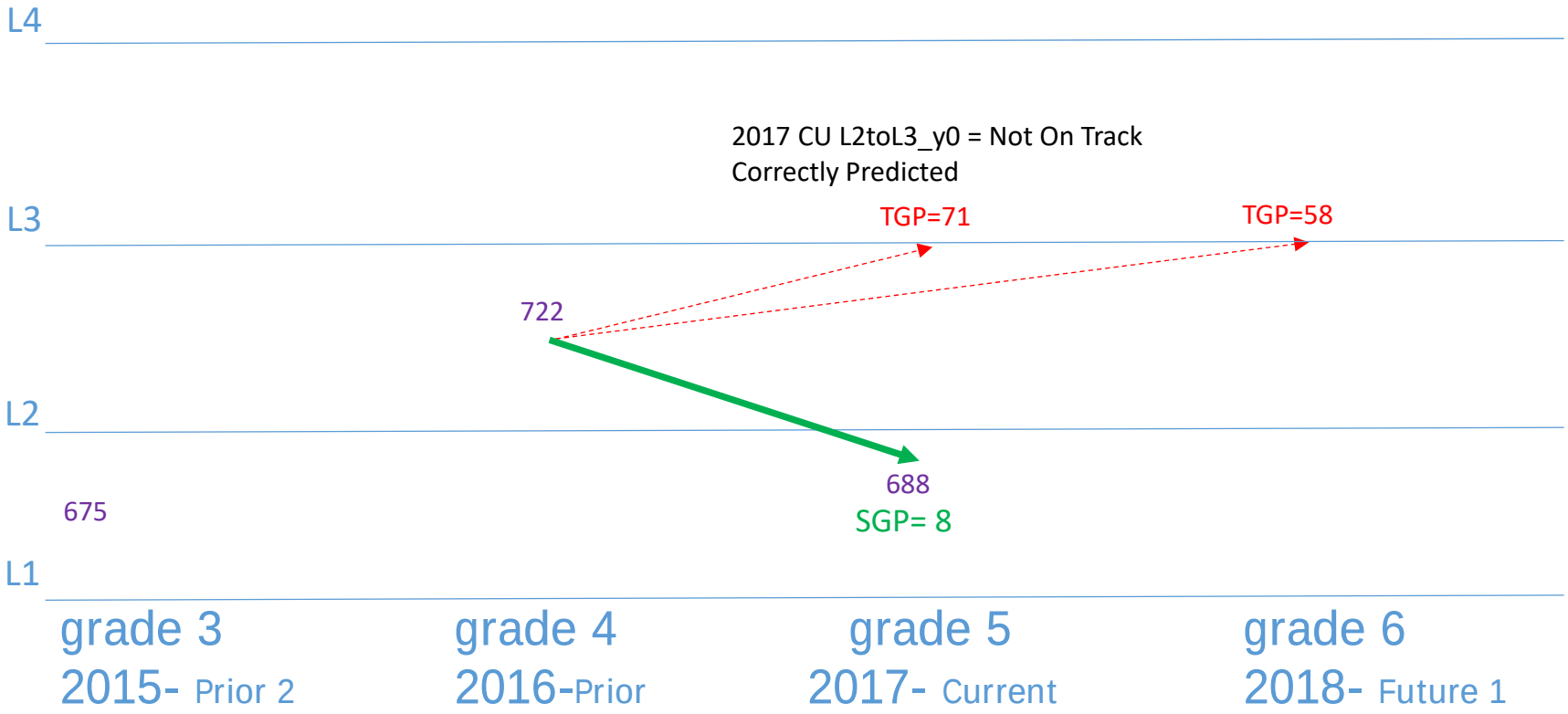
On Track Prediction Outcomes: Maintaining 2016 Targets Until Attained, then Reset

Again, using the year 0 TGP is always 100% accurate because we know what actually happened between the prior and current year.



On Track Prediction Outcomes: Maintaining 2016 Targets Until Attained, then Reset

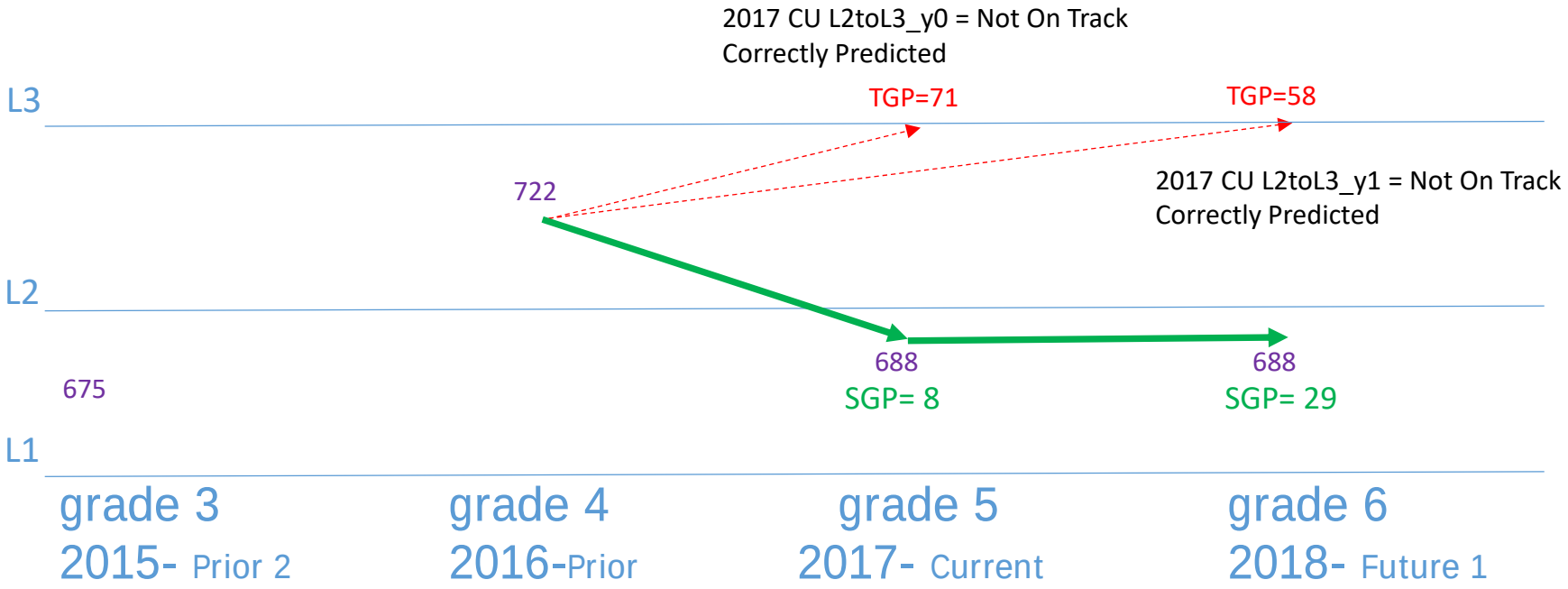
Students scoring at or below the same proficiency level in 2015 and 2016 maintain their 2016 TGPs, while students moving up 1+ PLs have their targets reset to their 2017 TGPs. Looking at the 2017 outcomes, our predictive accuracy drops significantly, averaging 64.7% for ELA and 70.4% for Math, combining Catch Up and Keep Up across Elementary grades.



On Track Prediction Outcomes: Maintaining 2016 Targets Until Attained, then Reset

There are now four possible combinations of student proficiency trajectories-

1. No movement from 15 to 16, or 16 to 17 – use 2016 TGP
2. No movement from 15 to 16, upward movement from 16 to 17- use 2018 TGP
3. Upward movement from 15 to 16, no movement from 16 to 17- use 2017 TGP
4. Upward movement from 15 to 16 and 16 to 17- use 2018 TGP



On Track Prediction Outcomes
Reset Targets Every Year

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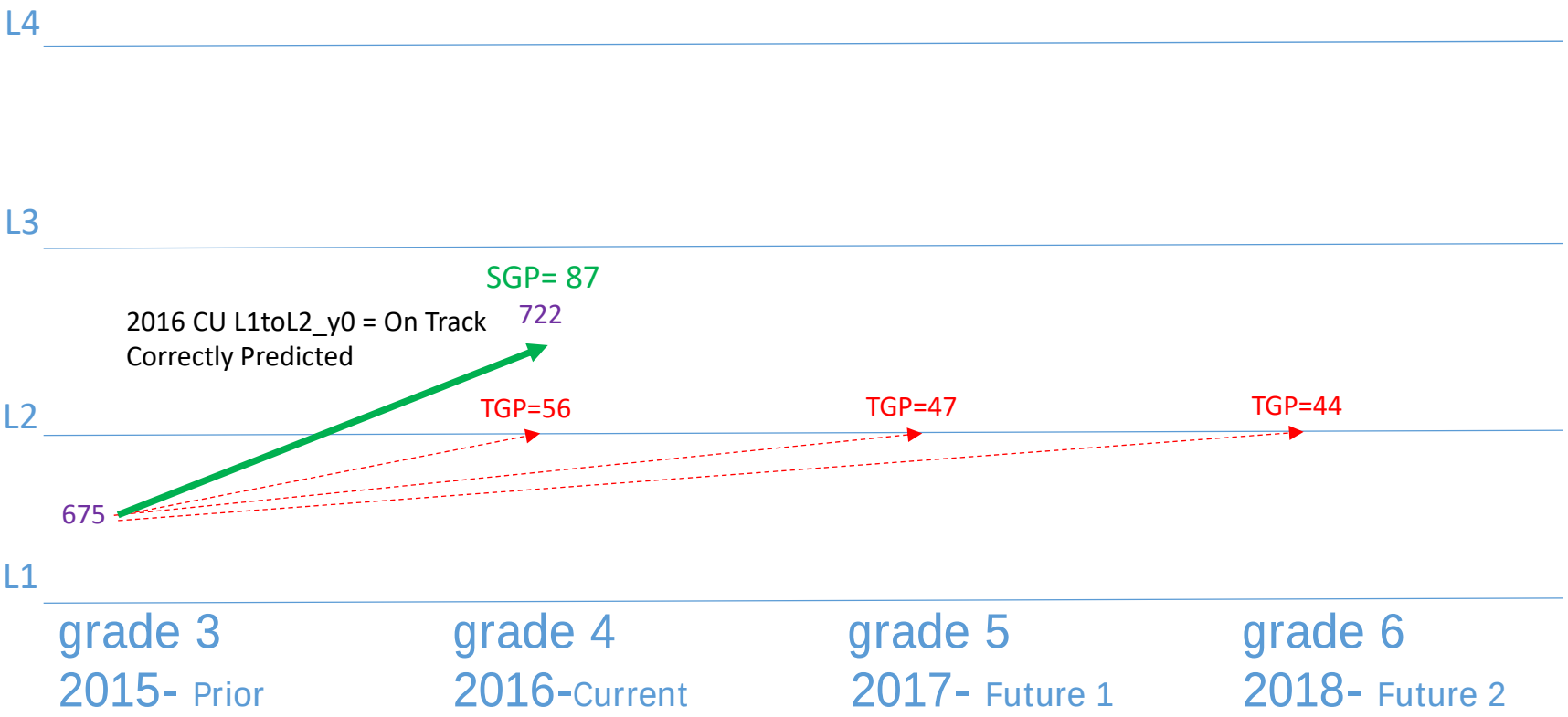
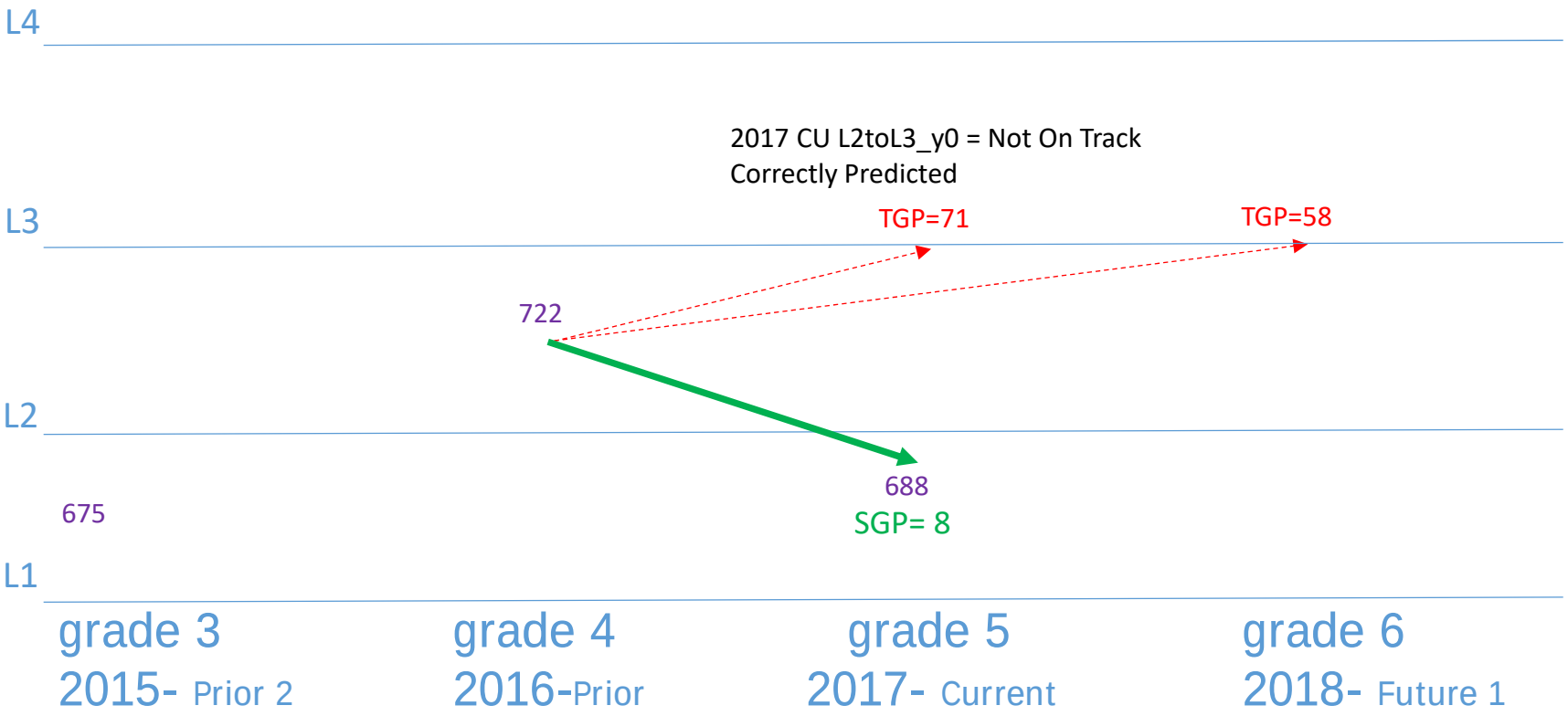


On Track Prediction Outcomes
Reset Targets Every Year

Since the targets reset each year, our predictions will always be 100% accurate because the slate of prior target expectations and timelines is wiped clean each year.



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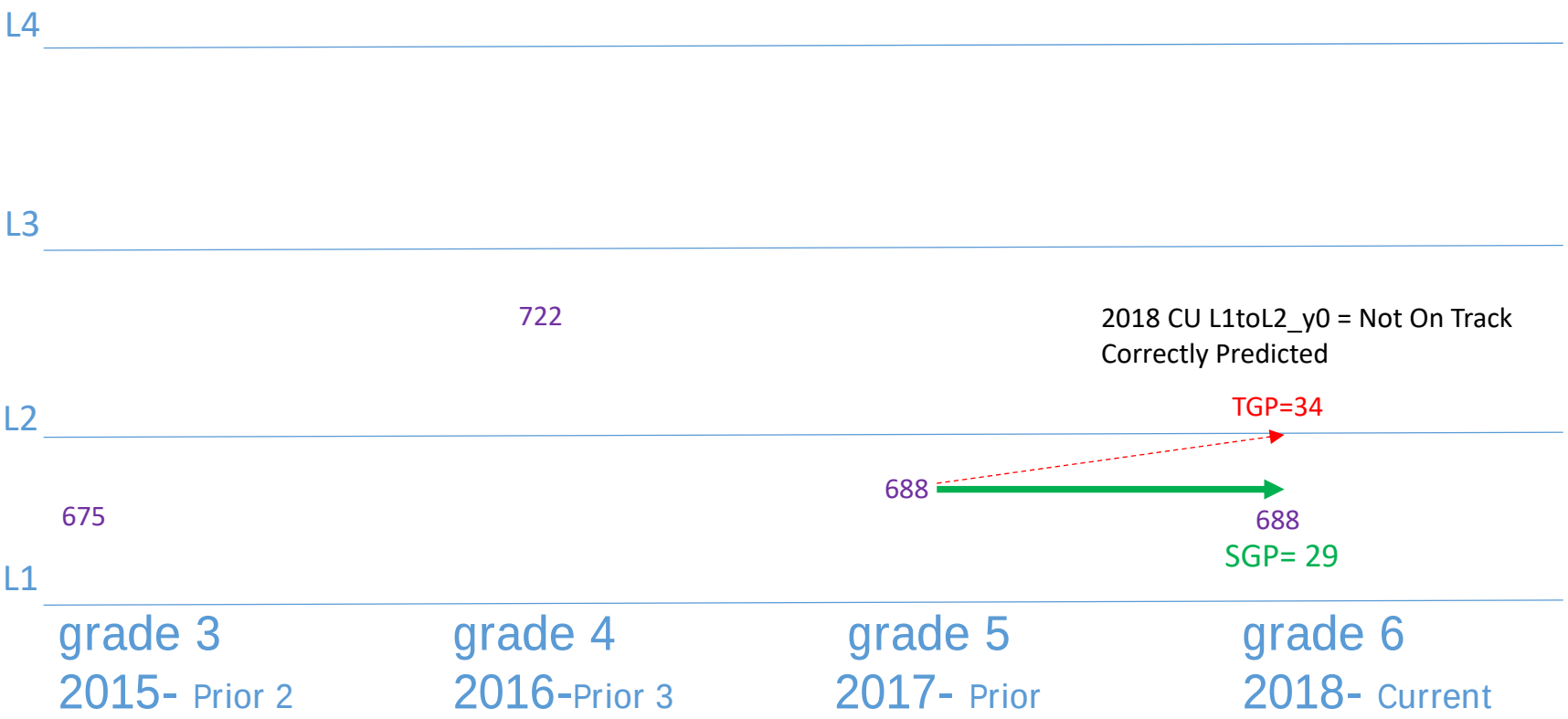
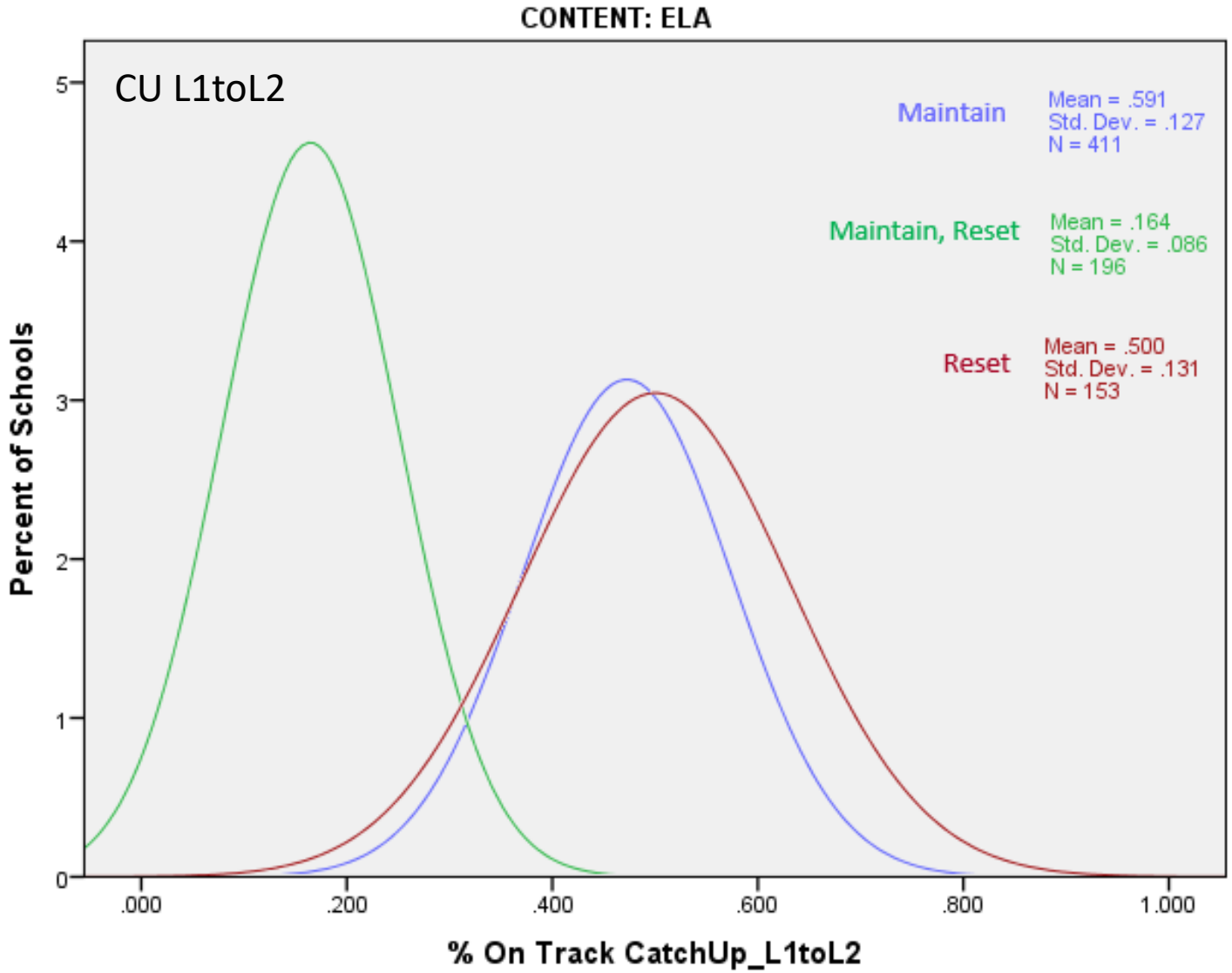


Observed 2018 School Aggregations of 2016 2 Year On Track Target Scenarios

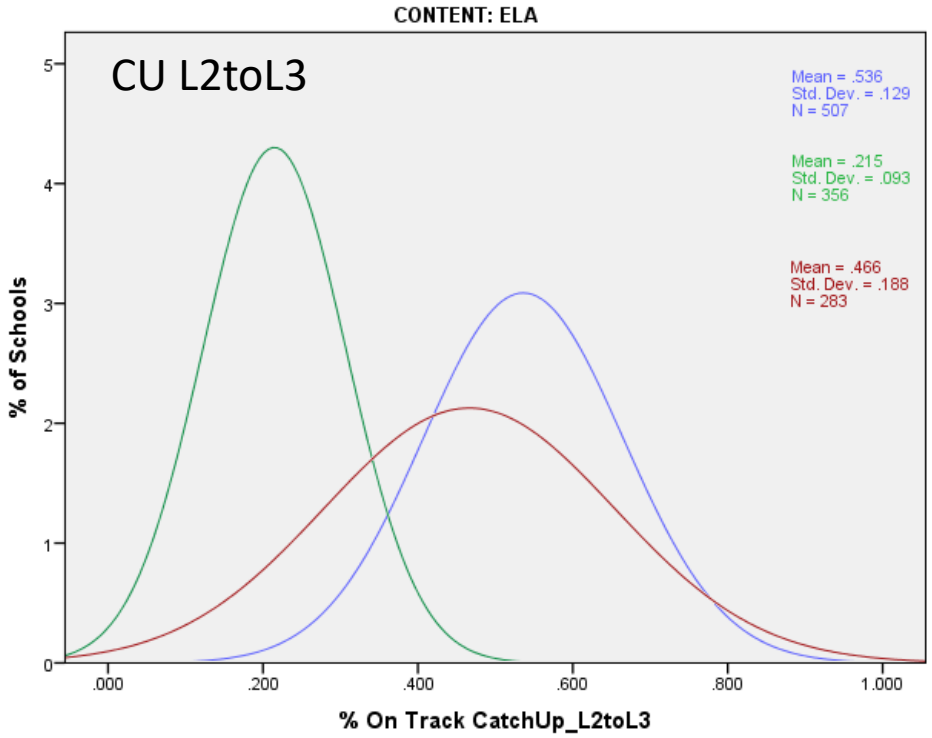
Observed 2018 School Aggrega
2016 2 Year On Track Targets

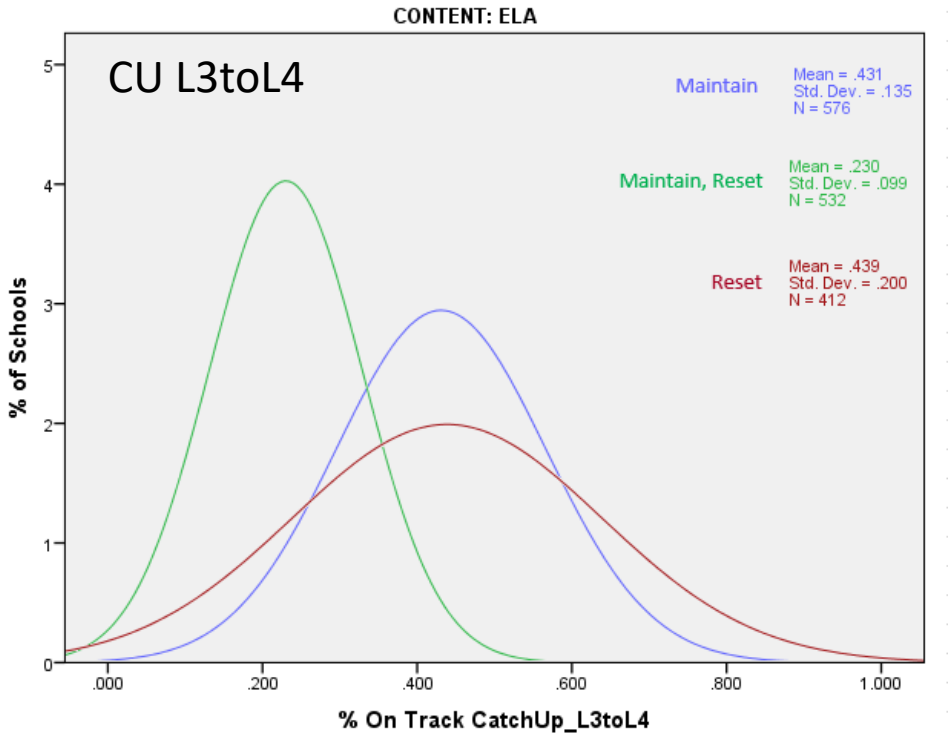
Aggregated by school the observed 2018 student On/Off Track flags for each of the above 2016 2 Year Target Scenarios then compared outcomes to see how different the inferences of average student performance become depending upon which target-setting methodology is used.

Observed 2018 School Aggrega
2016 2 Year On Track Targets



Comparison of 2018 School Ag
Track 2016 2 yr Target Scenari





Blue= Maintain
Green= Maintain, Reset
Red= Reset

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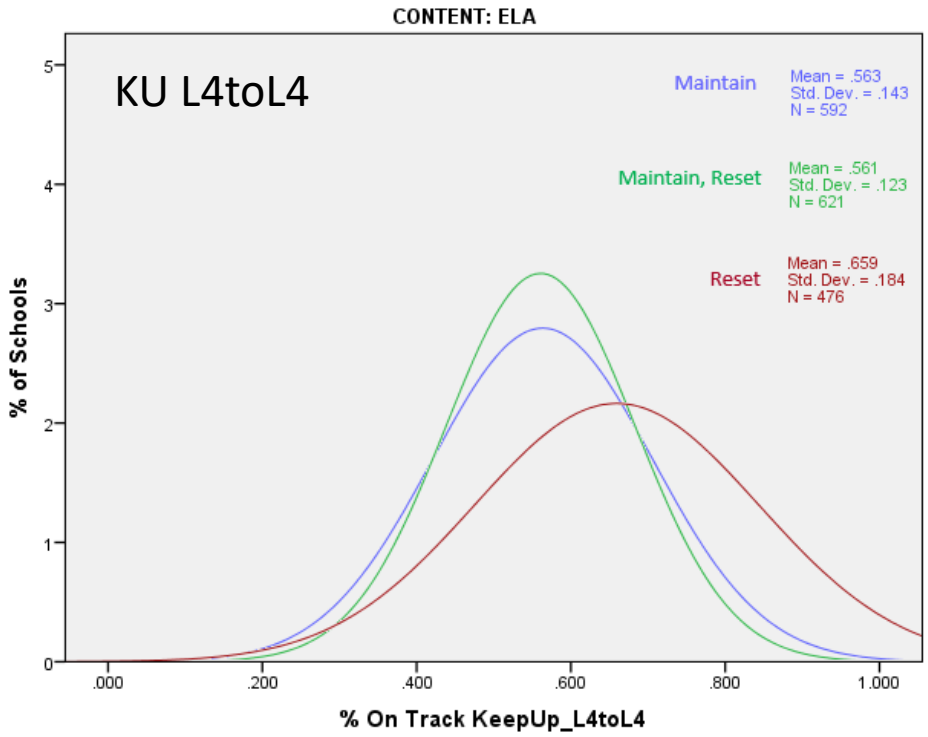

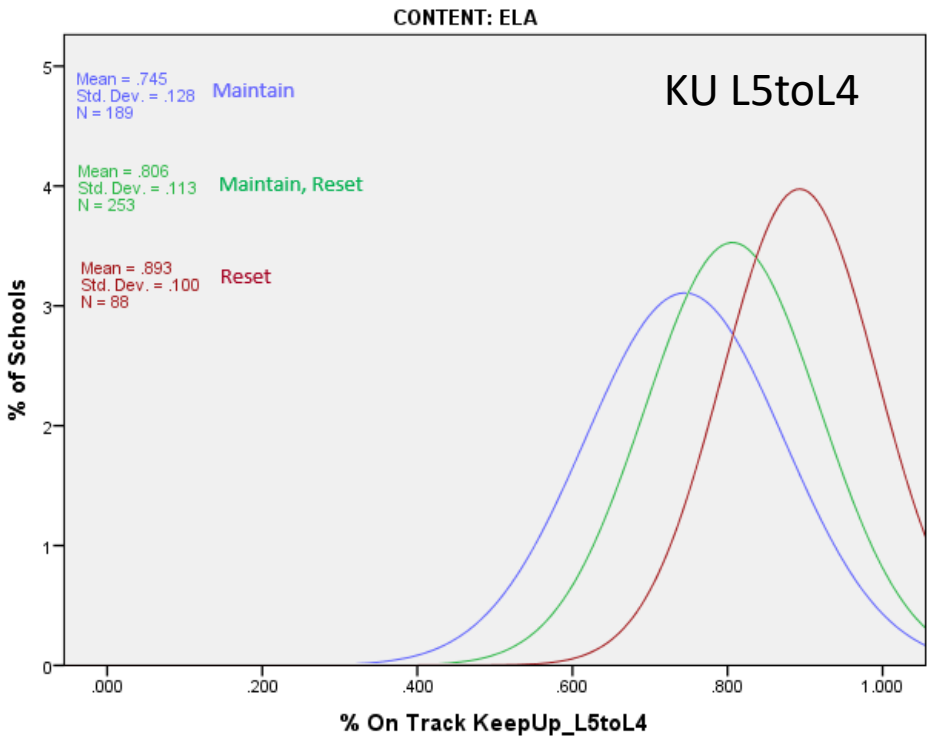

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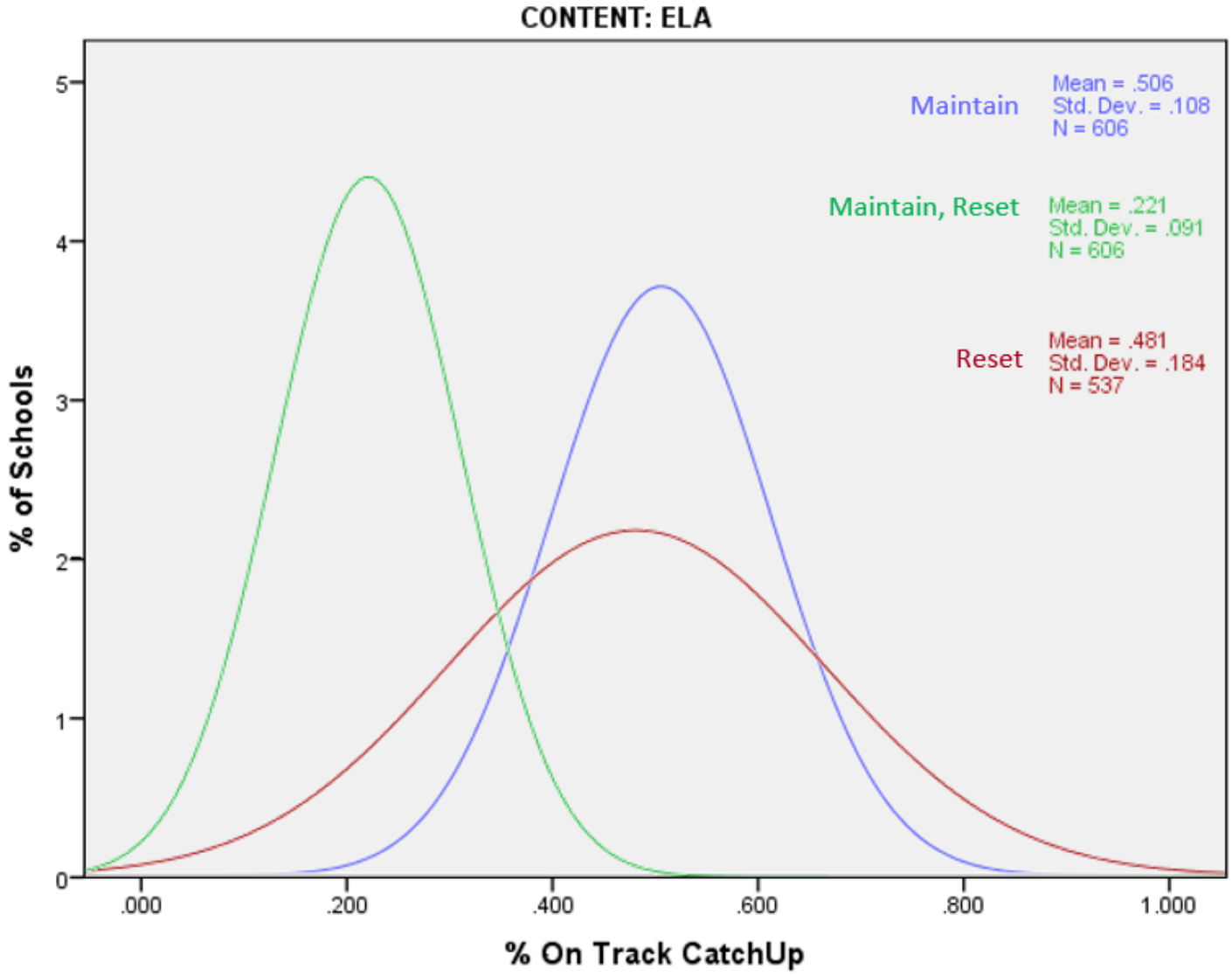

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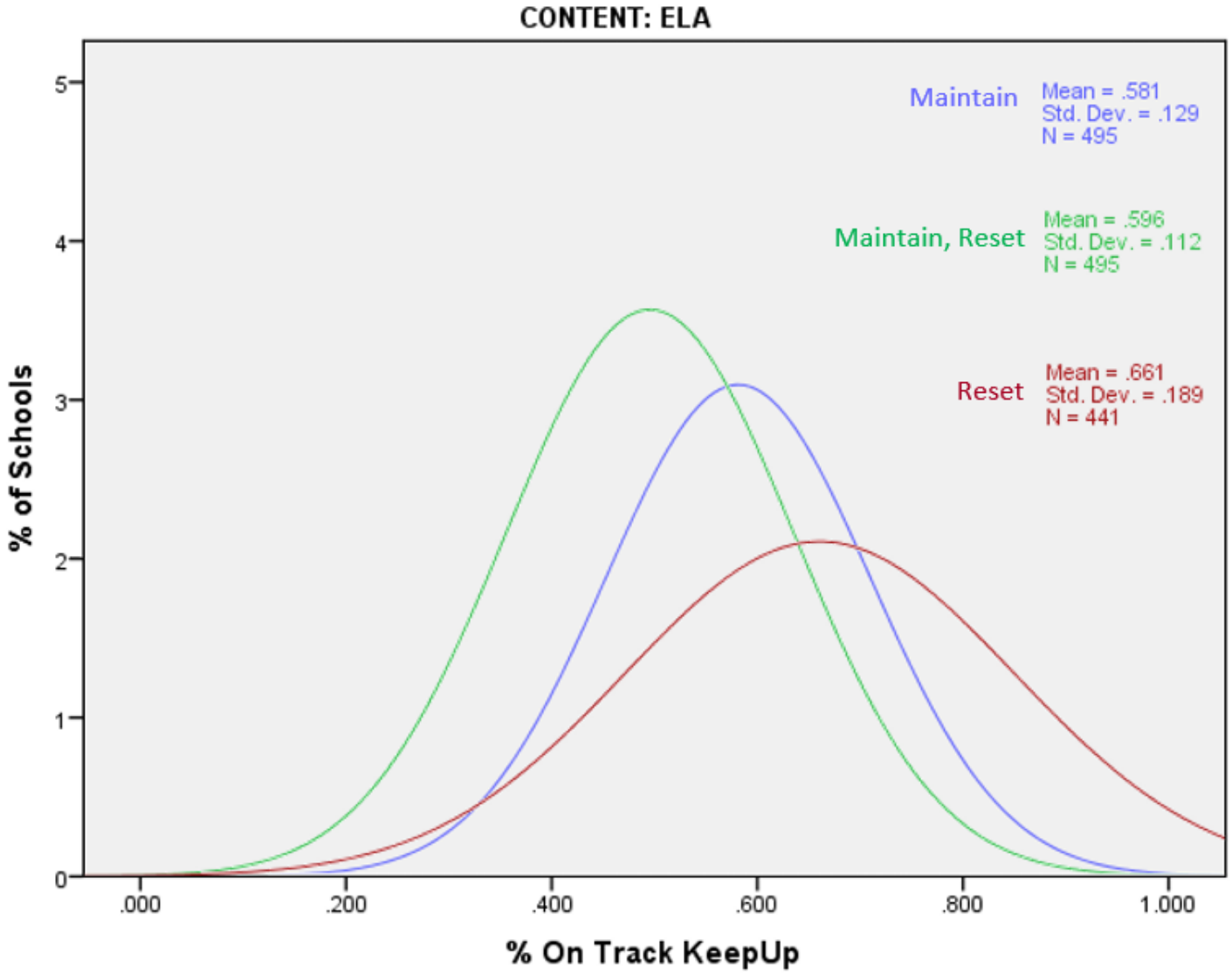

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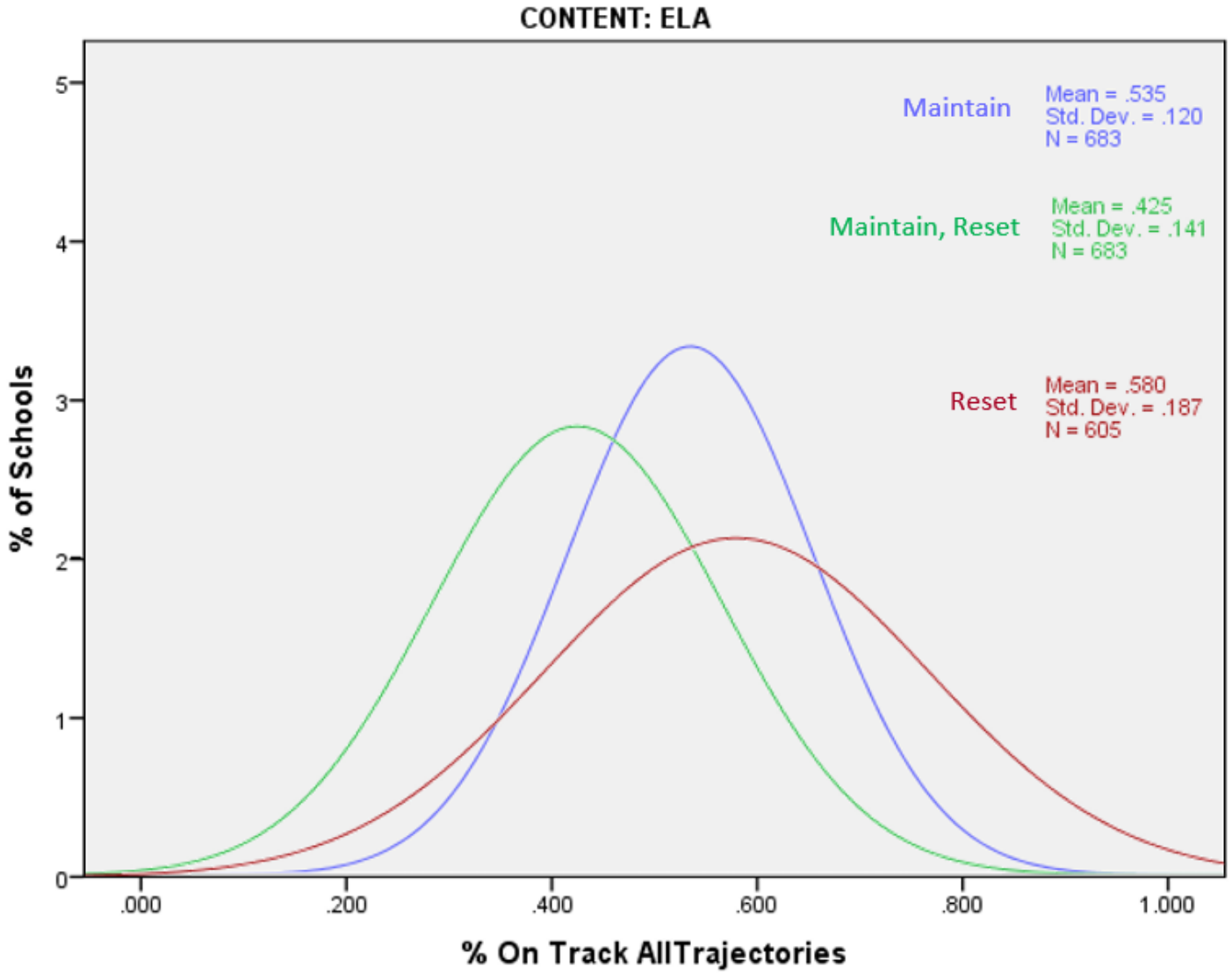

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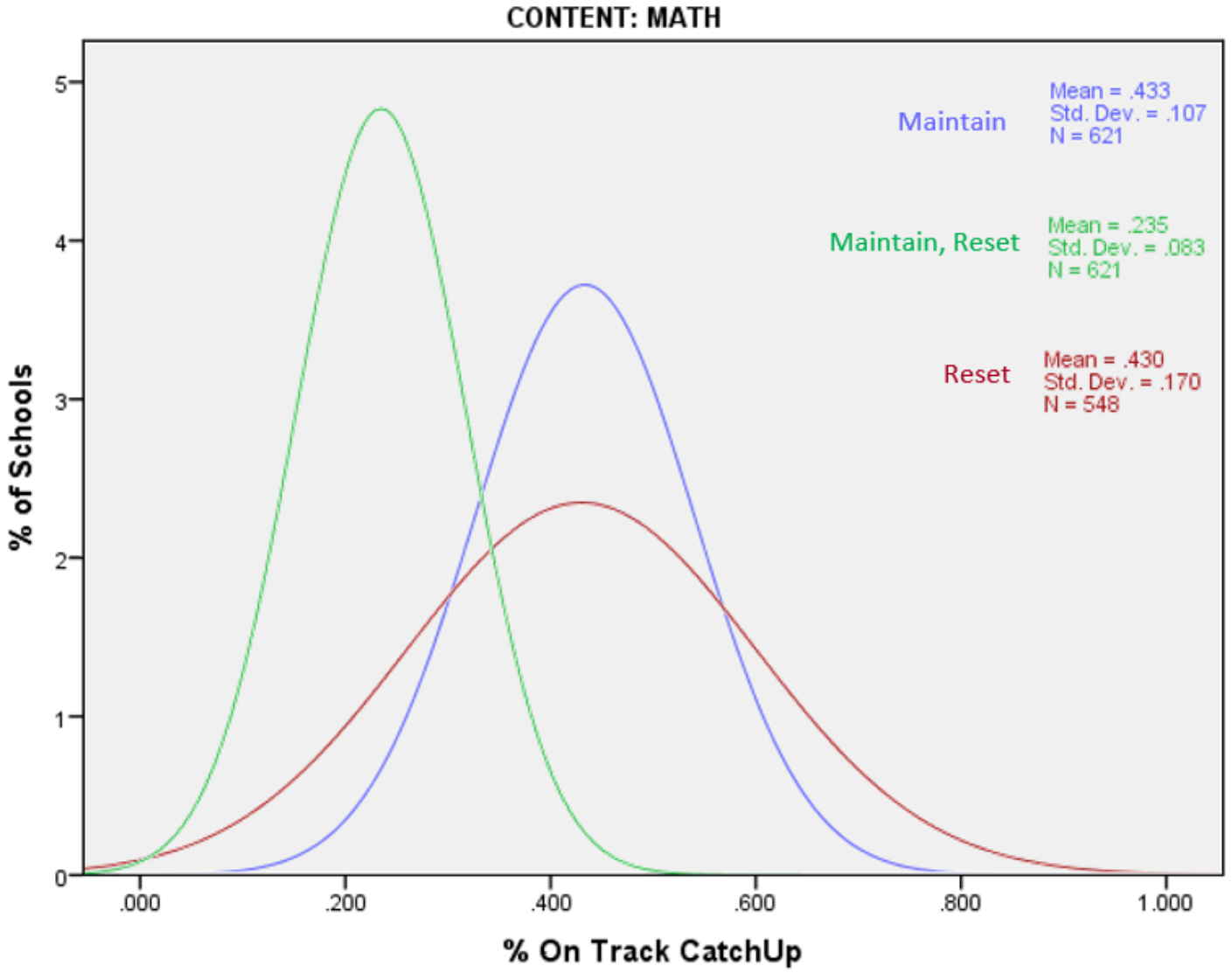

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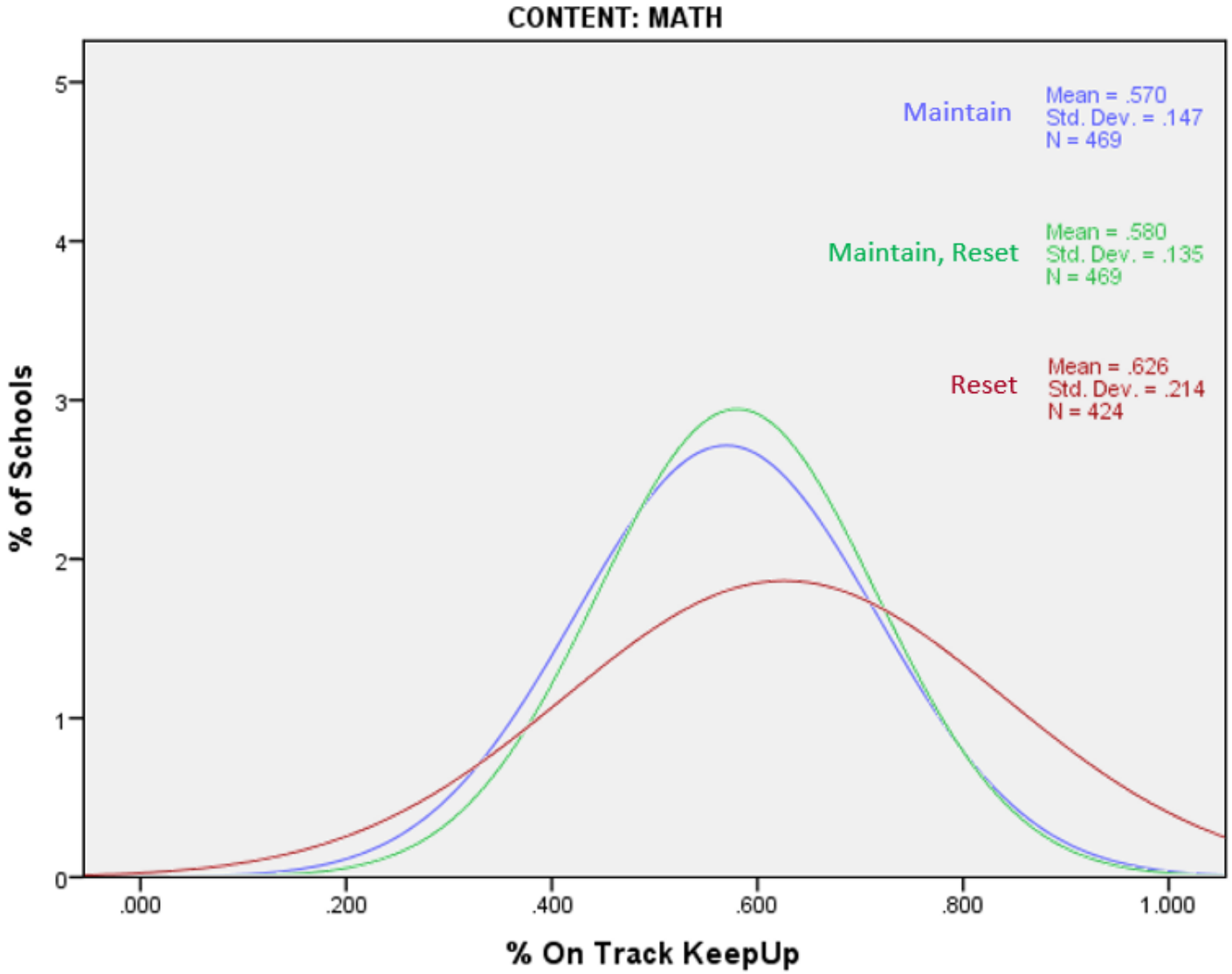

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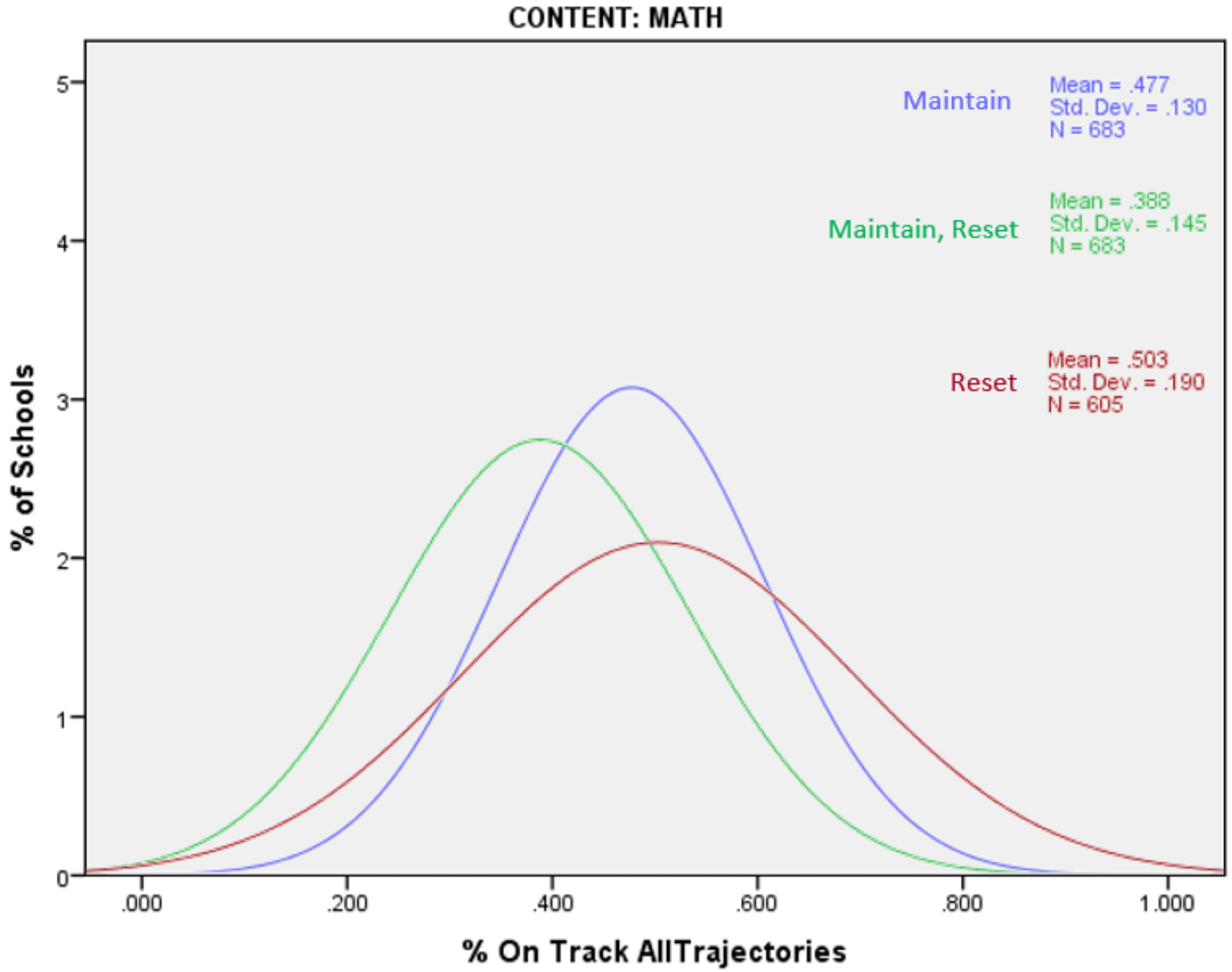


Reflection Time

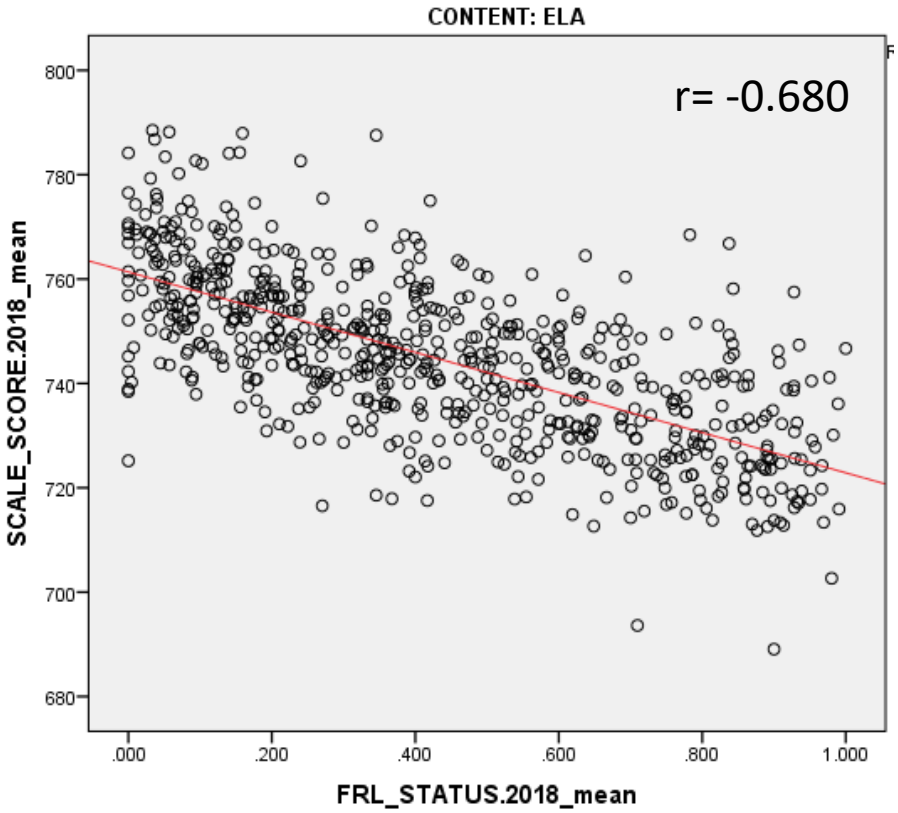
Observed 2018 School Aggregations of 2016 2 Year On Track Target Scenarios – by Demographic Composition

Impact of School Size and Dem Composition

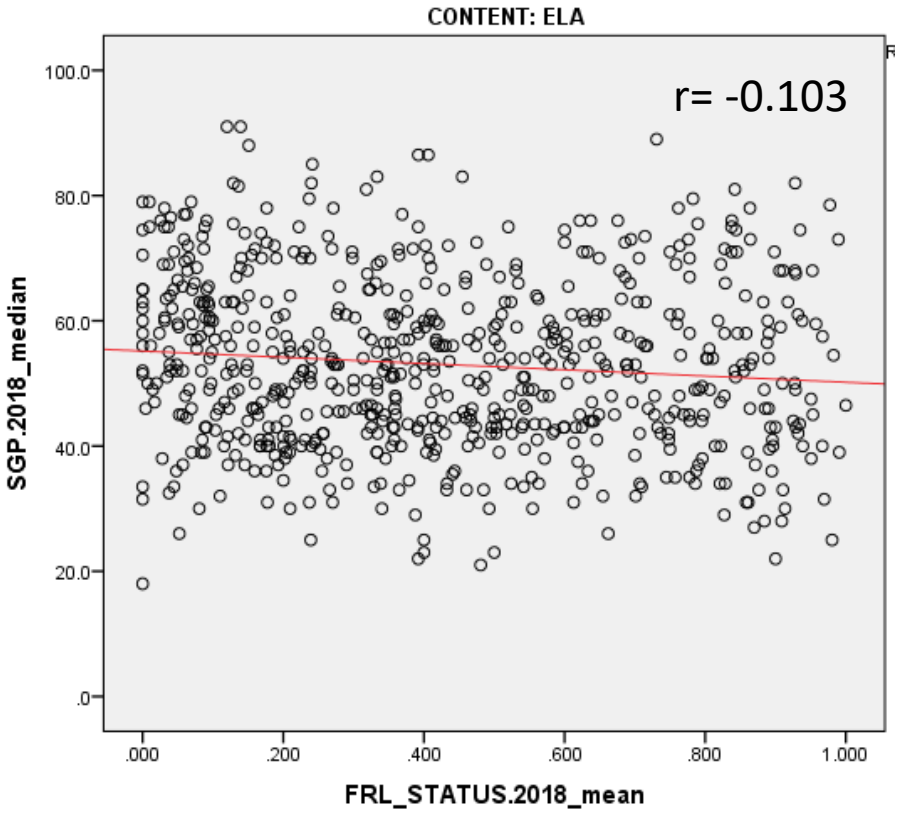
- How do the % On Track results compare to the mean scale score and median student growth percentile distributions by school demographic profile?
- How does school demographic profile impact the % On Track results under each target scenario?

2016 2 Year % on Track by Scer Demographic Concentration-

Achievement



Growth



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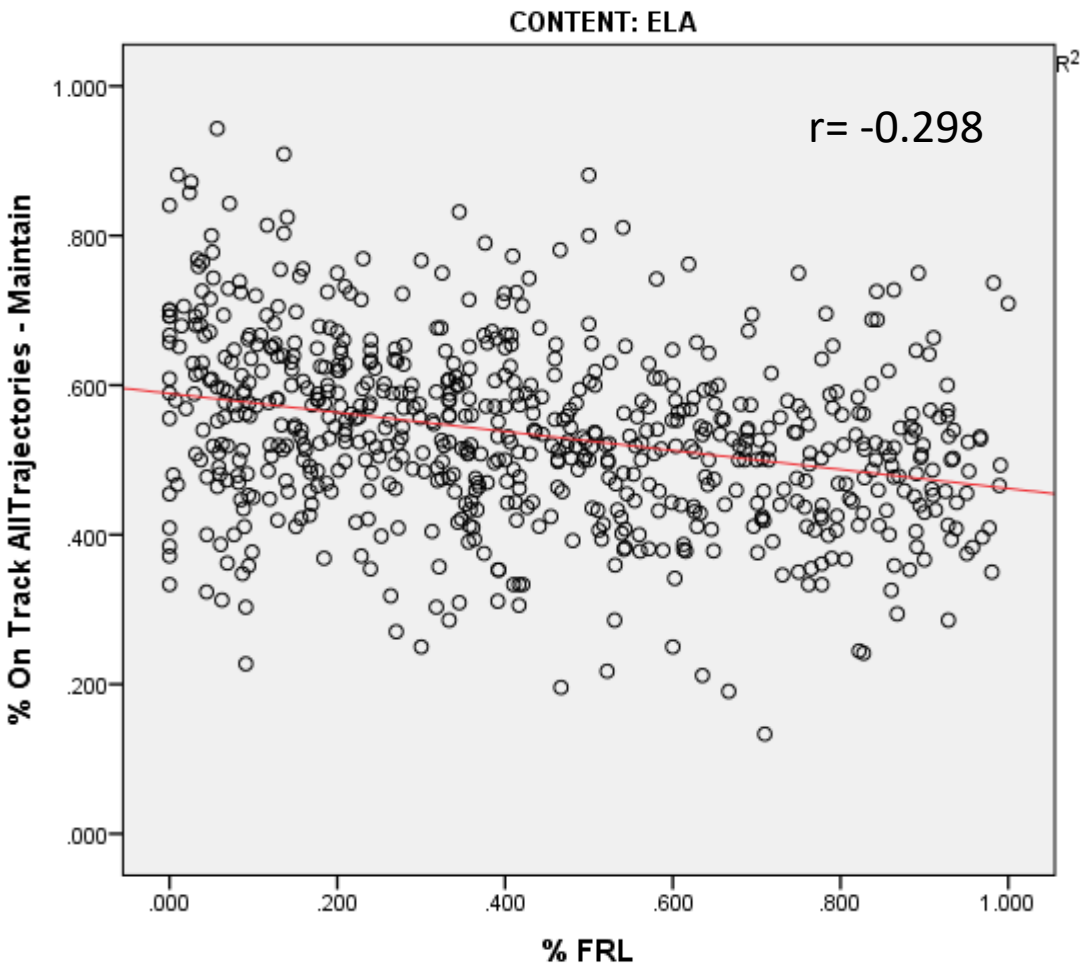
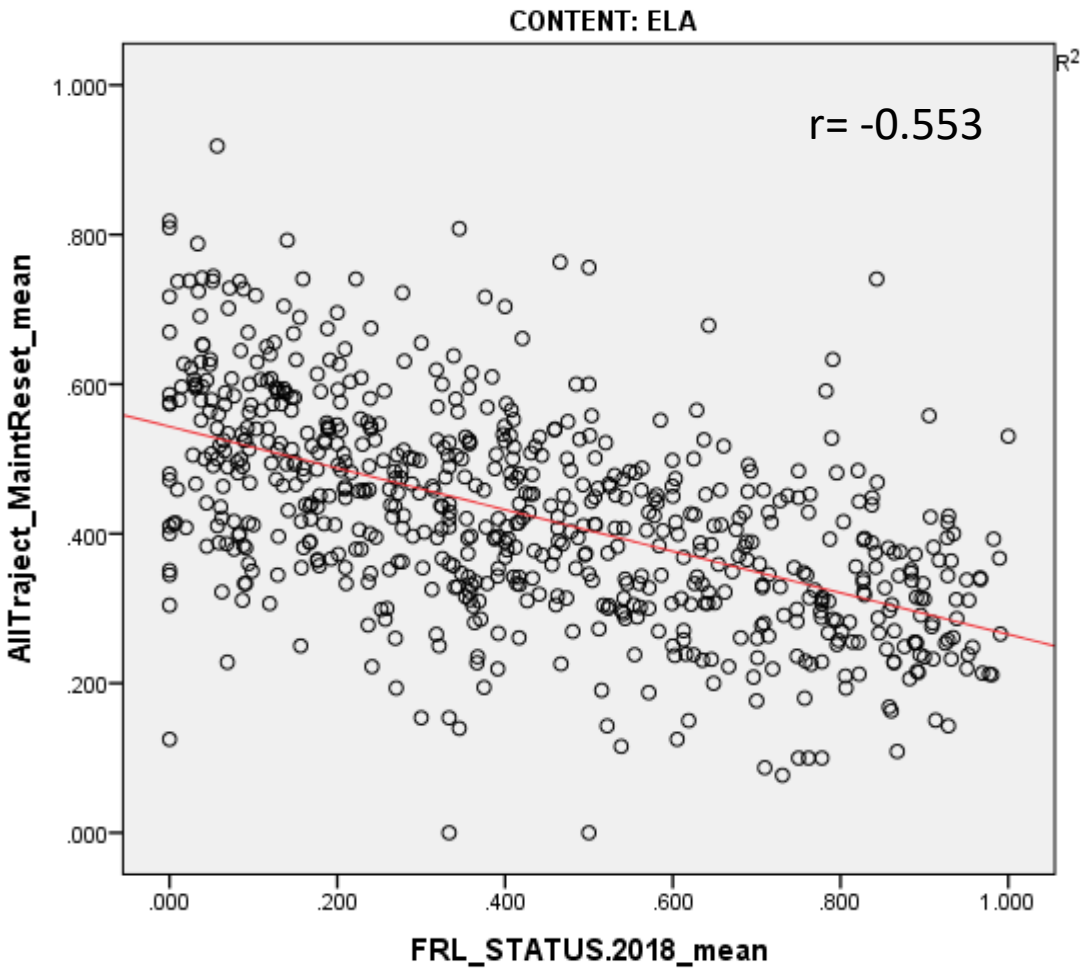


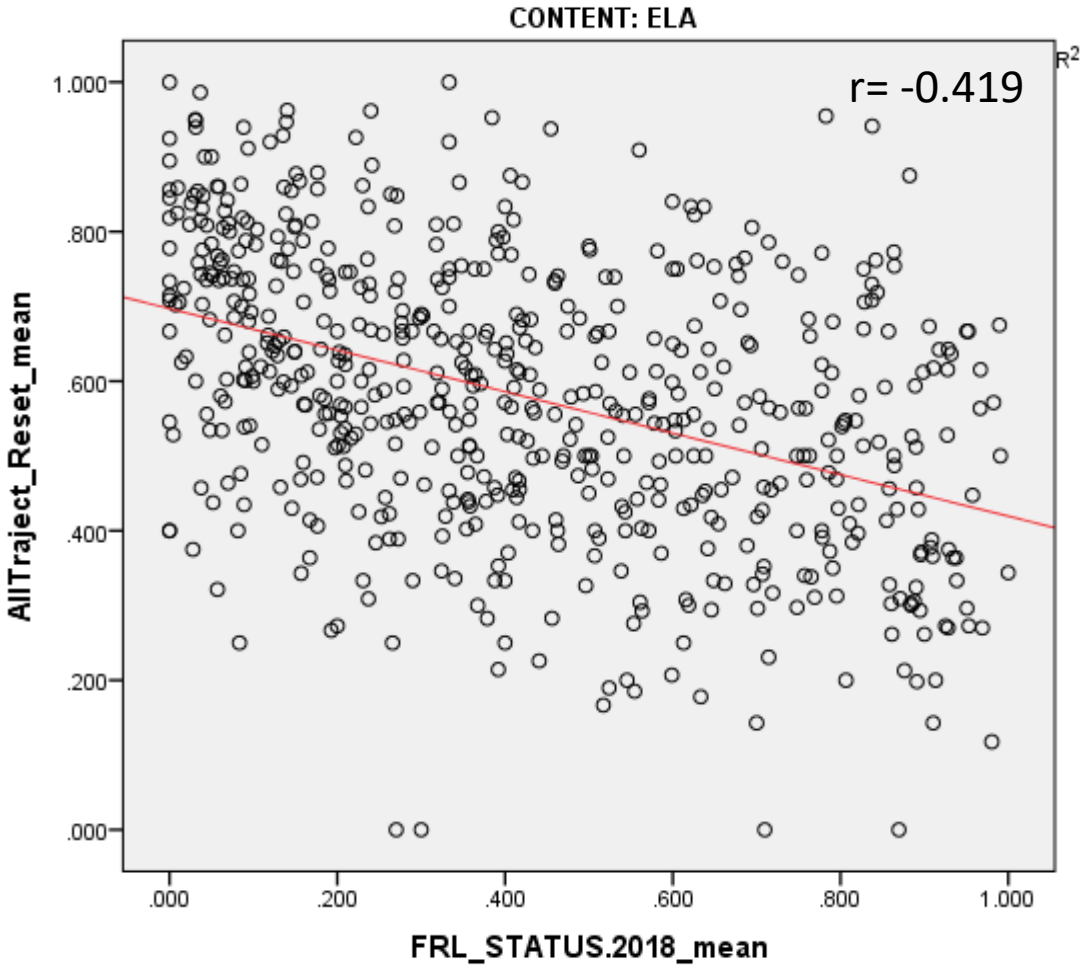
- Comparing the % of students on track across all CUKU trajectories under the "Maintain" Target scenario (y-axis) against the % of students eligible or Free- or Reduced-price lunch program (x-axis), shows a weak relationship between the variables, with low-poverty schools doing a little better than high-poverty schools.

2016 2 Year % on Track by Scer Demographic Concentration-



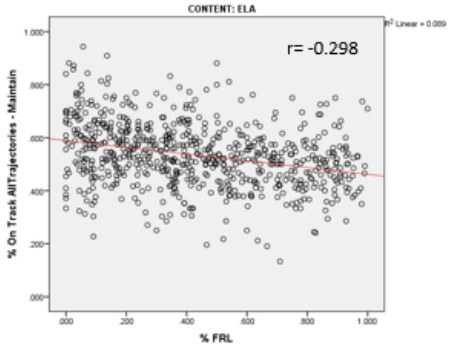
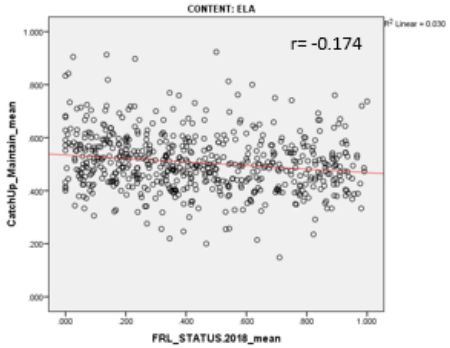
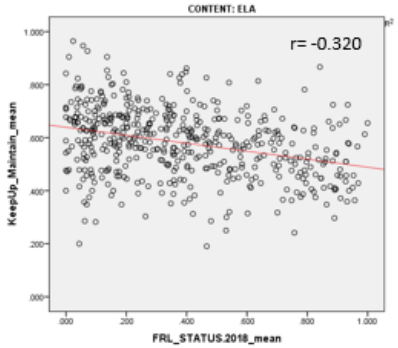
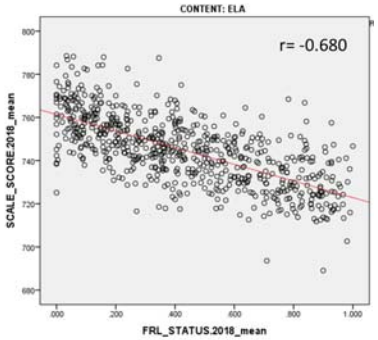
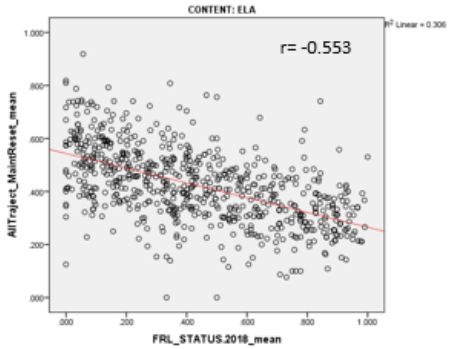
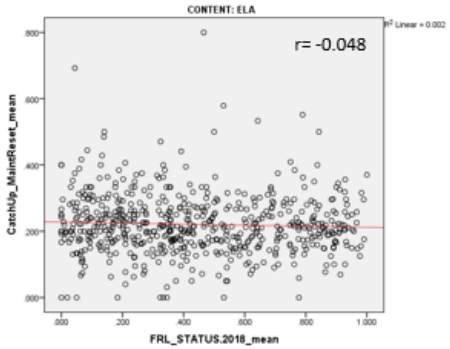
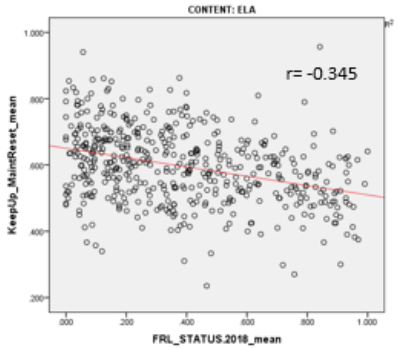
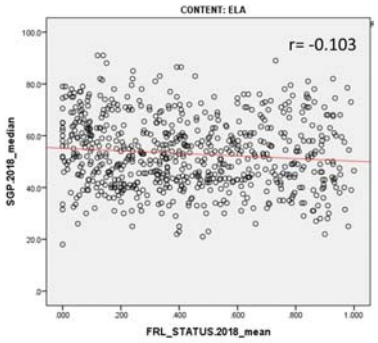
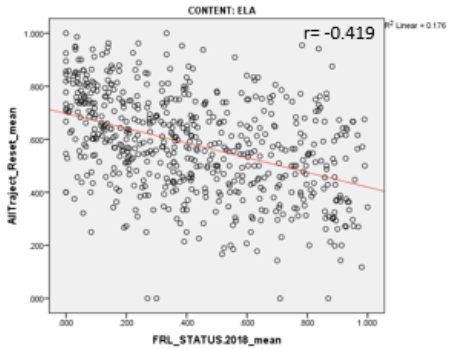
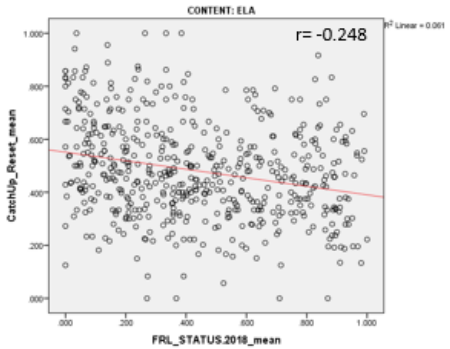
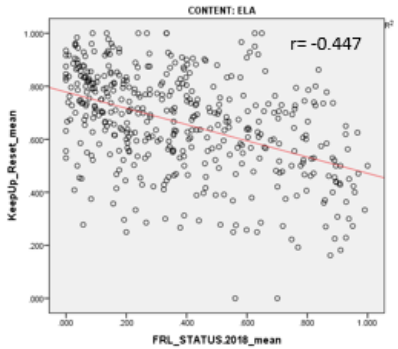
- The % of students on track under the "Maintain, then Reset" Target scenario is noticeably lower and more correlated to the % of students in a school eligible for FRL than the "Maintain" scenario, but not quite as deterministic as the straight scale score results.

2016 2 Year % on Track by Scer Demographic Concentration-

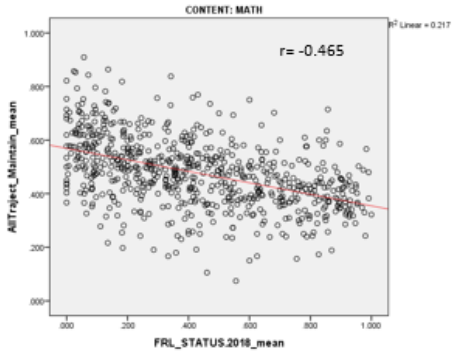
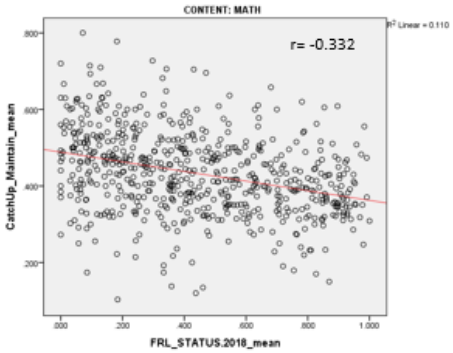
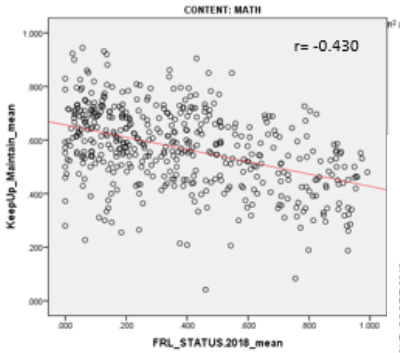
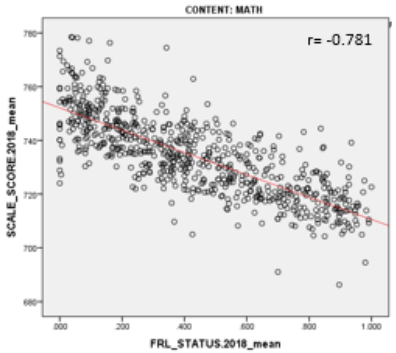
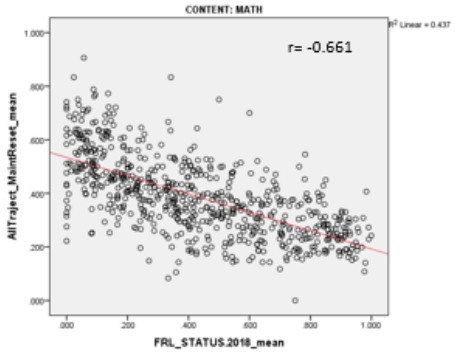
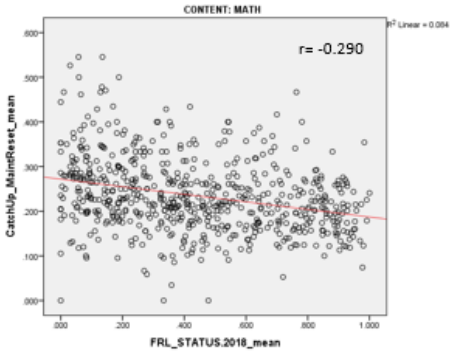
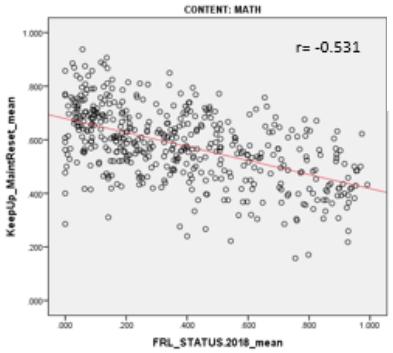
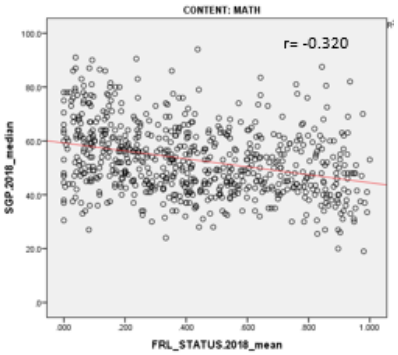
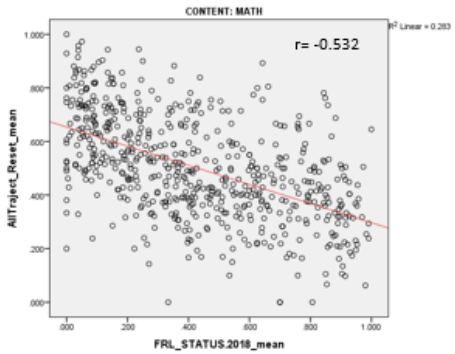
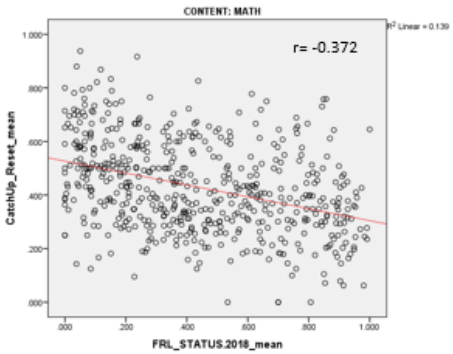
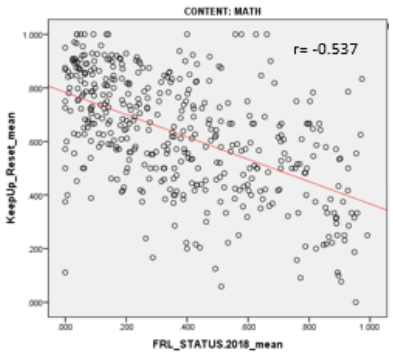


- The "Reset" Target scenario shows more variability in the % of students on track overall, and the correlation splits the difference between the "Maintain" and "Maintain, Reset" scenarios
- How should this correlation inform the framework weighting given to the growth to standard measures?

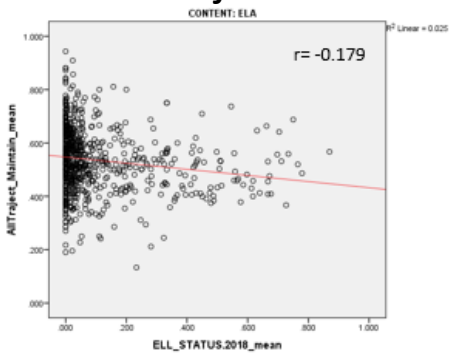
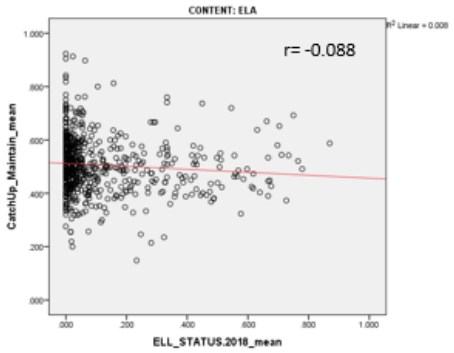
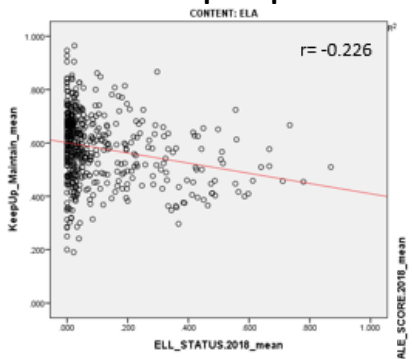
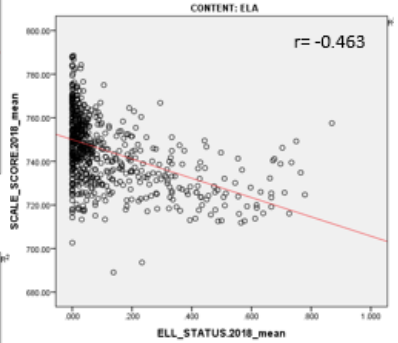
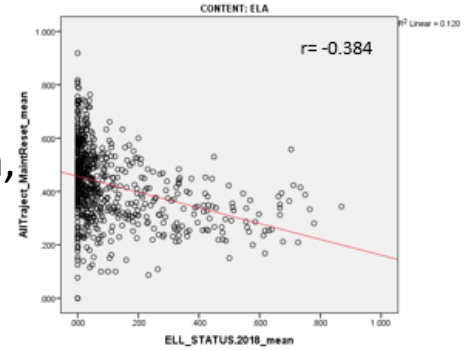
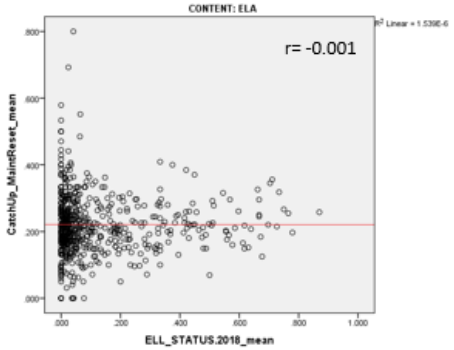
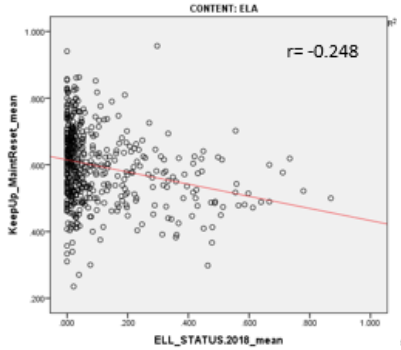
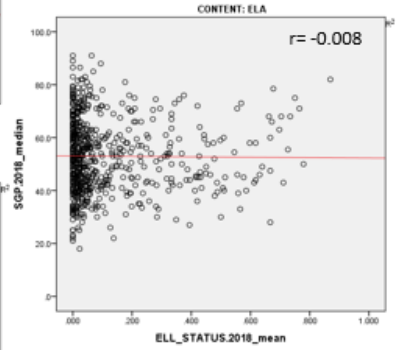
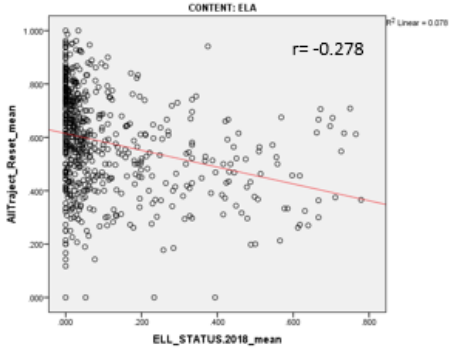
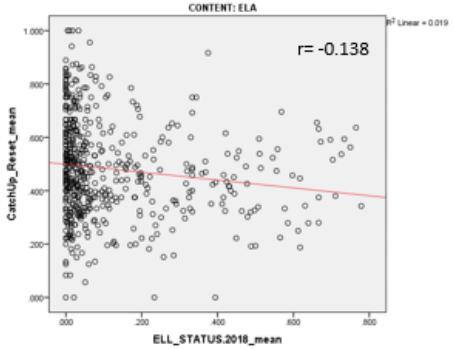
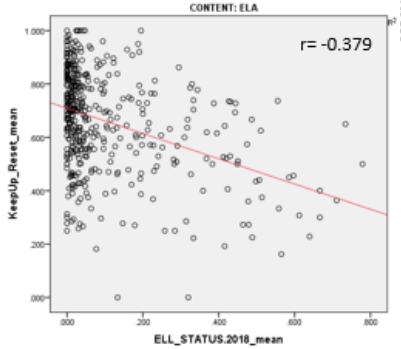
2016 2 Year % on Track by Scer
Demographic Concentration-

	All Trajectories	Catch Up	Keep Up	Scale Score	Growth
Maintain					
Maintain, Reset					
Reset					

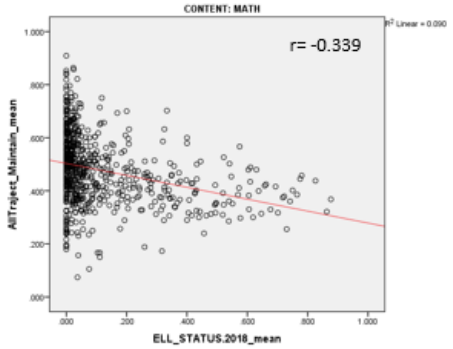
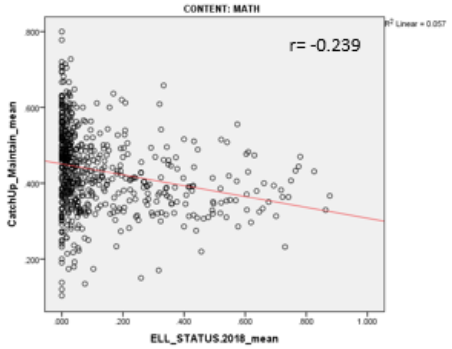
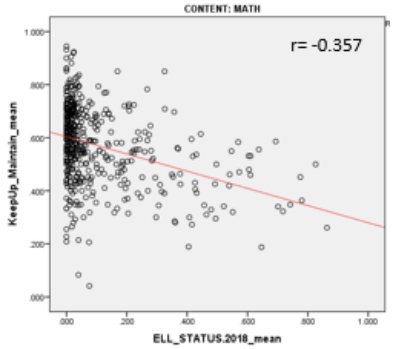
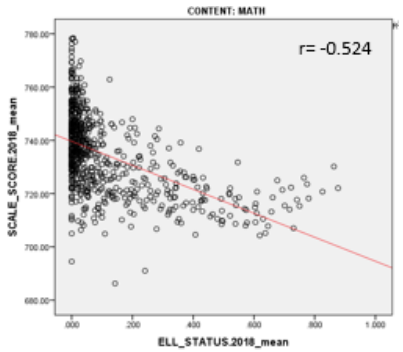
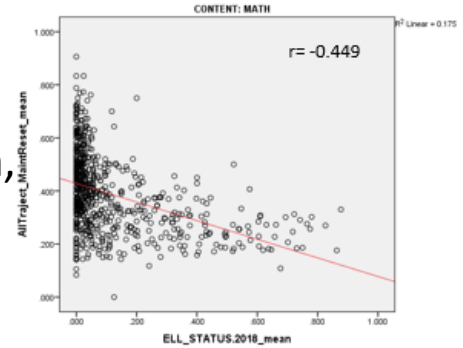
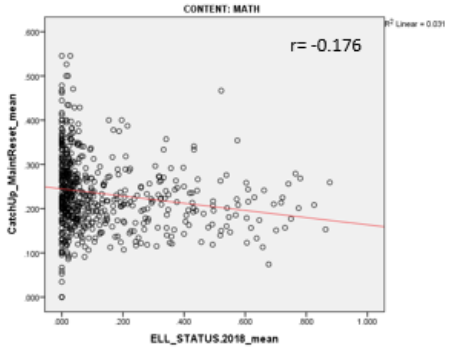
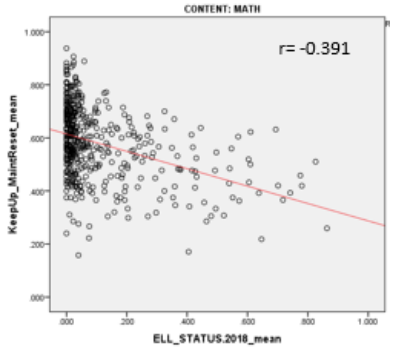
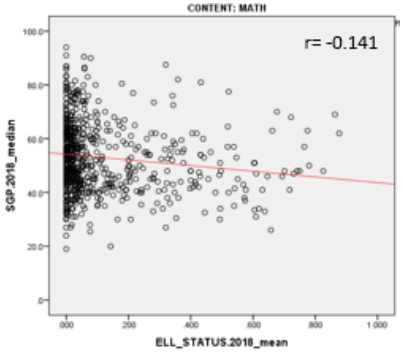
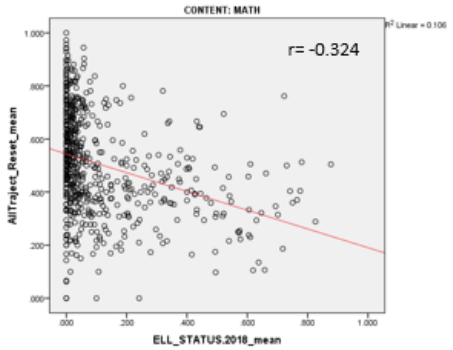
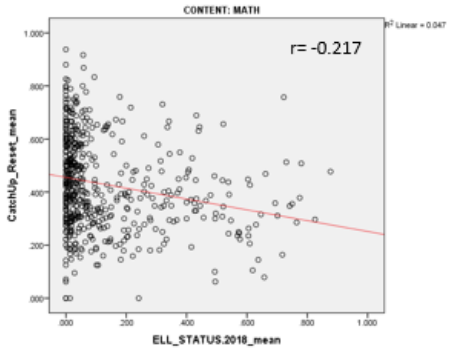
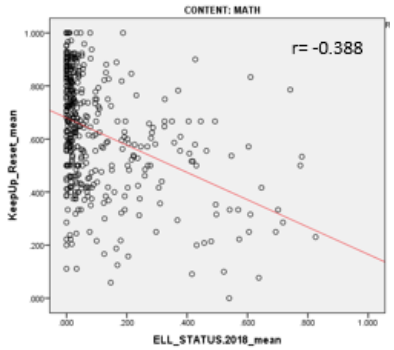
2016 2 Year % on Track by Scer Demographic Concentration-

	All Trajectories	Catch Up	Keep Up	Scale Score	Growth
Maintain					
Maintain, Reset					
Reset					

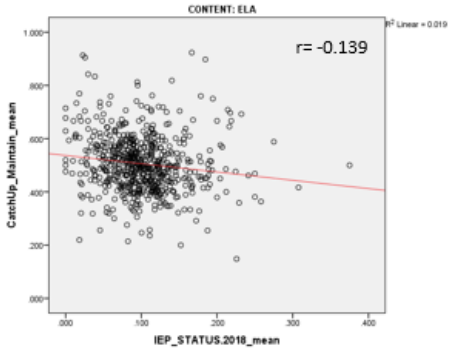
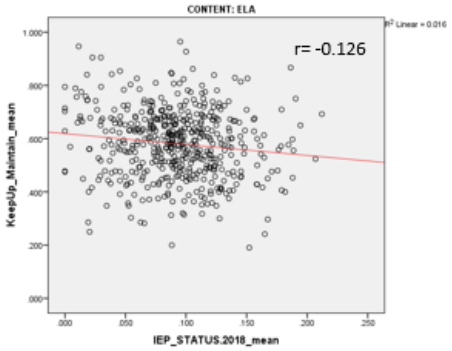
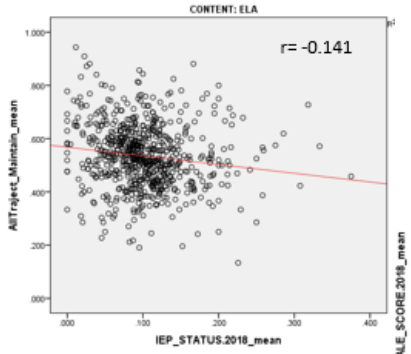
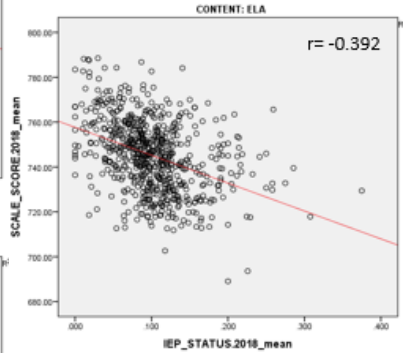
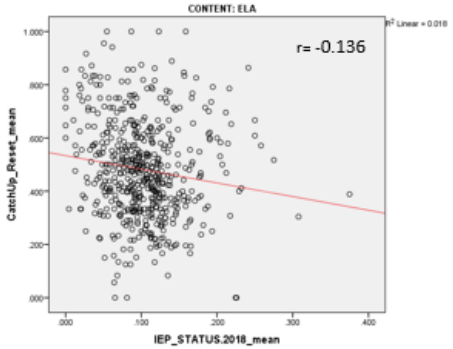
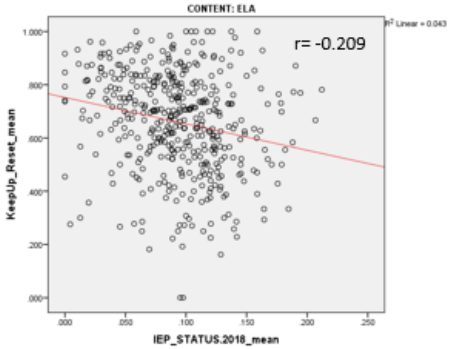
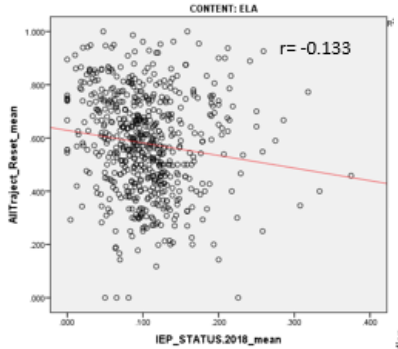
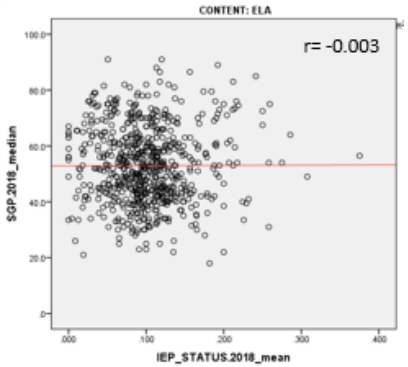
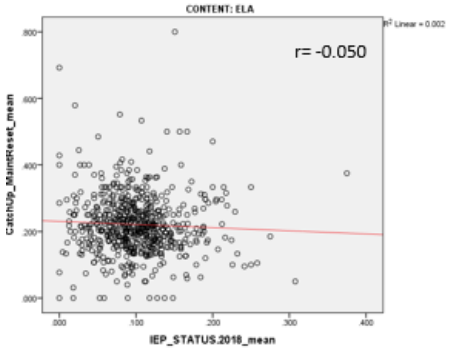
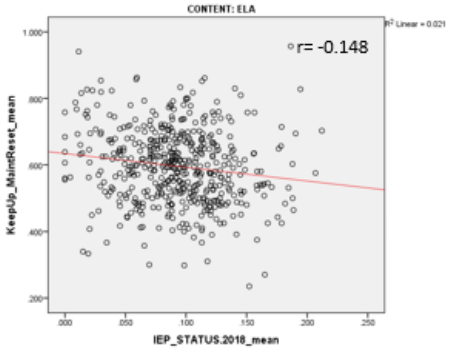
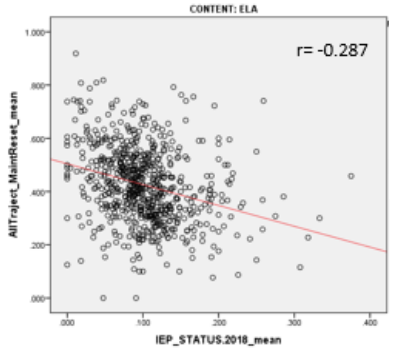
2016 2 Year % on Track by Scer Demographic Concentration-

	All Trajectories	Catch Up	Keep Up	Scale Score	Growth
Maintain					
Maintain, Reset					
Reset					

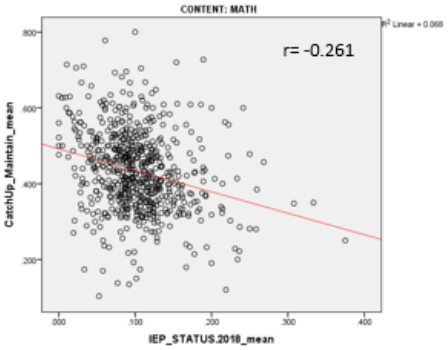
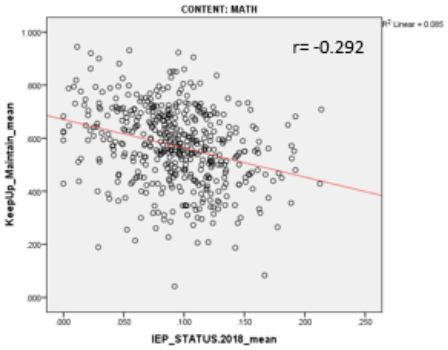
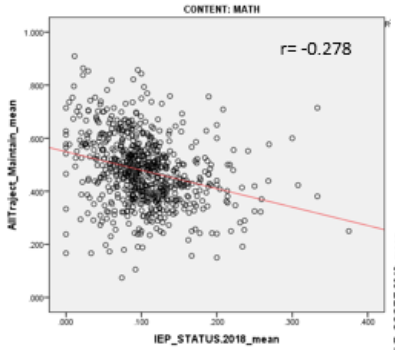
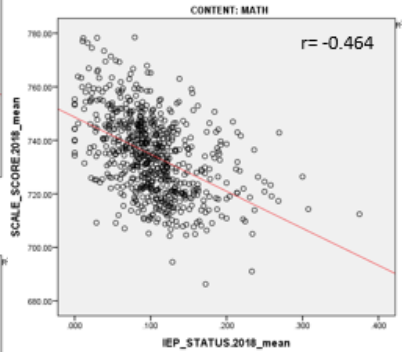
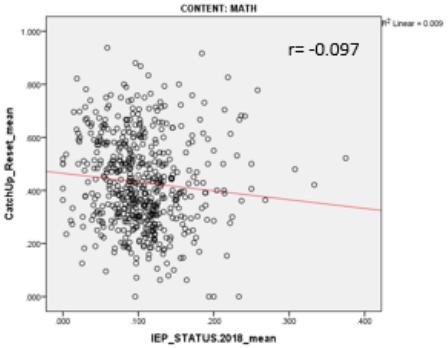
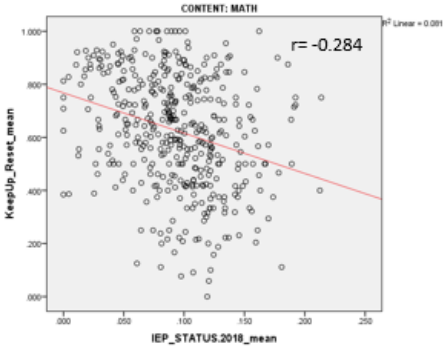
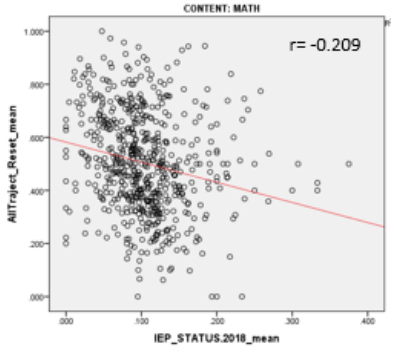
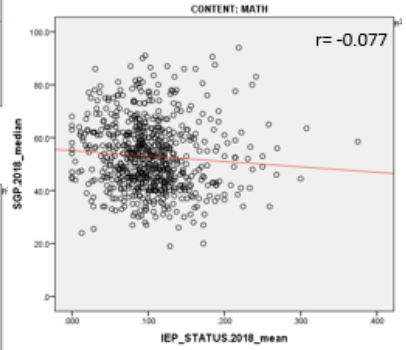
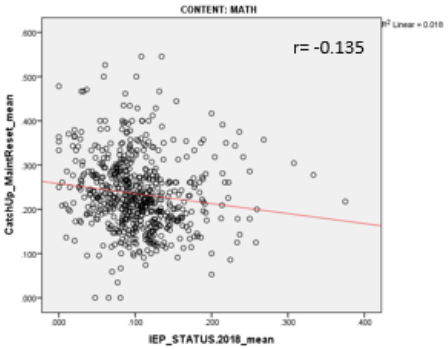
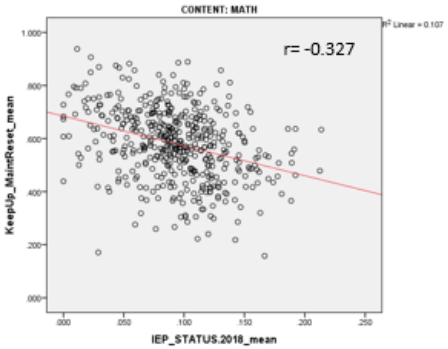
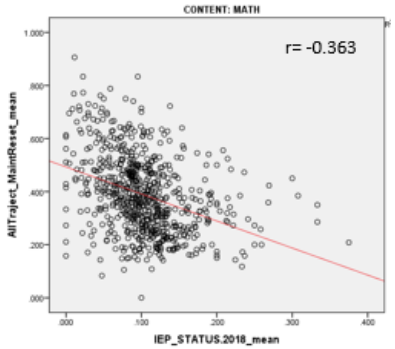
2016 2 Year % on Track by Scer Demographic Concentration-

	All Trajectories	Catch Up	Keep Up	Scale Score
Maintain				
Maintain, Reset				Growth 
Reset				

2016 2 Year % on Track by Scer
Demographic Concentration-

	All Trajectories	Catch Up	Keep Up	Scale Score
Maintain				
Maintain, Reset				Growth 
Reset				

2016 2 Year % on Track by Scer Demographic Concentration-

	All Trajectories	Catch Up	Keep Up	Scale Score	Growth
Maintain					
Maintain, Reset					
Reset					

Reflection Time

TAP Recommendation

Does the clock start over every year or should this be a set trajectory where we track your progress from the first test result? To be successfully on-track, do you have to maintain the gains made?

What is the TAP's recommended methodology for calculating each student's annual target growth percentile?

Theoretical Decision Points & I

- Should all targets be set to “Meets State Expectations” or should interim targets be used for Catch Up trajectories?

TBD-January

- Does the clock start over every year or should this be a set trajectory where we track student progress from the first test result? To be successfully on-track, do students have to maintain the gains made?

TBD-January

- How many years should students be given to attain their target performance level? Should that vary by grade, content area, and/or initial performance level?

TBD-Jan/Feb

- How should the Growth to Standard metric be reported on the performance frameworks?