

K-12 In Alaska

Investing in Effective Measures to Ensure Student Success in Life

Prepared by Mark A Foster (MAFA)

Prepared for Senate Finance

April 3, 2019

Overview

- How are Alaskan Students Doing on Standardized Tests?
 - NAEP & PEAKS, 4th & 8th Grade Reading/ELA & Math
- What drives the variation in standardized test scores?
 - Poverty & Standardized Test Scores
- How do we measure effective teaching?
 - Growth & Proficiency
- Which schools have students who are performing well above expectations?
- What do local superintendents report as the key factors driving student assessments?
- What does the national/international research say?
- Summary recommendations for Alaska

Disclosures, Caveats & Limitations

Disclosures

1. Mark A Foster & Associates (MAFA) has been retained by Senator Von Imhof to assist in the compilation and analysis of what drives student success and what education initiatives look most promising to deliver effective, efficient and affordable education services for all Alaskan students
2. Mark Foster was appointed to fill a short term vacancy on the Anchorage School Board, Seat A (October 2018-April 2019).
3. Mark Foster served as the Director, Office of Management & Budget, and CFO for the Anchorage School District from 2012-2016. Mr. Foster was the project manager on the Evidence Based Model for ASD (April 4, 2016).
4. MAFA has consulted for a wide range of private and public sector clients across multiple sectors in Alaska, U.S. and Internationally since 1994.
5. Mark Foster graduated from Lathrop High School in Fairbanks in 1979.

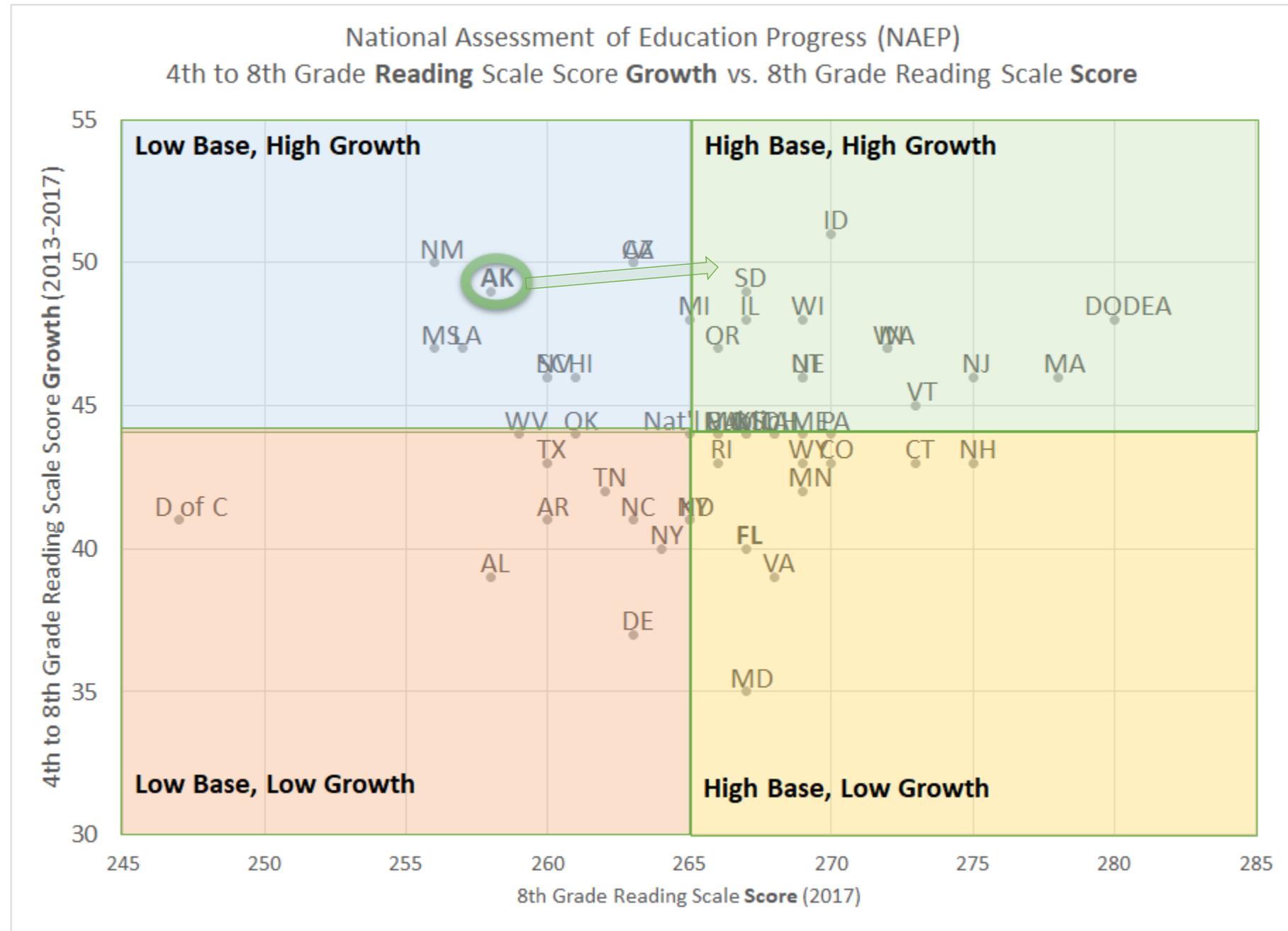
Caveats & Limitations

1. NAEP and PEAKS Standards Based Tests provide one summative approach to assessing student academic performance. Variation in student test scores are frequently correlated with poverty and related factors. The Gates Foundation Measuring Effective Teaching Project and subsequent research supports the use of student growth and proficiency as one domain to assess the value that teachers and schools contribute toward student academic success.
2. Standards Based Tests are modestly correlated with success in life (Raj Chetty)
3. Social skills tend to be better predictors of success in life (Kirabo Jackson, Raj Chetty)

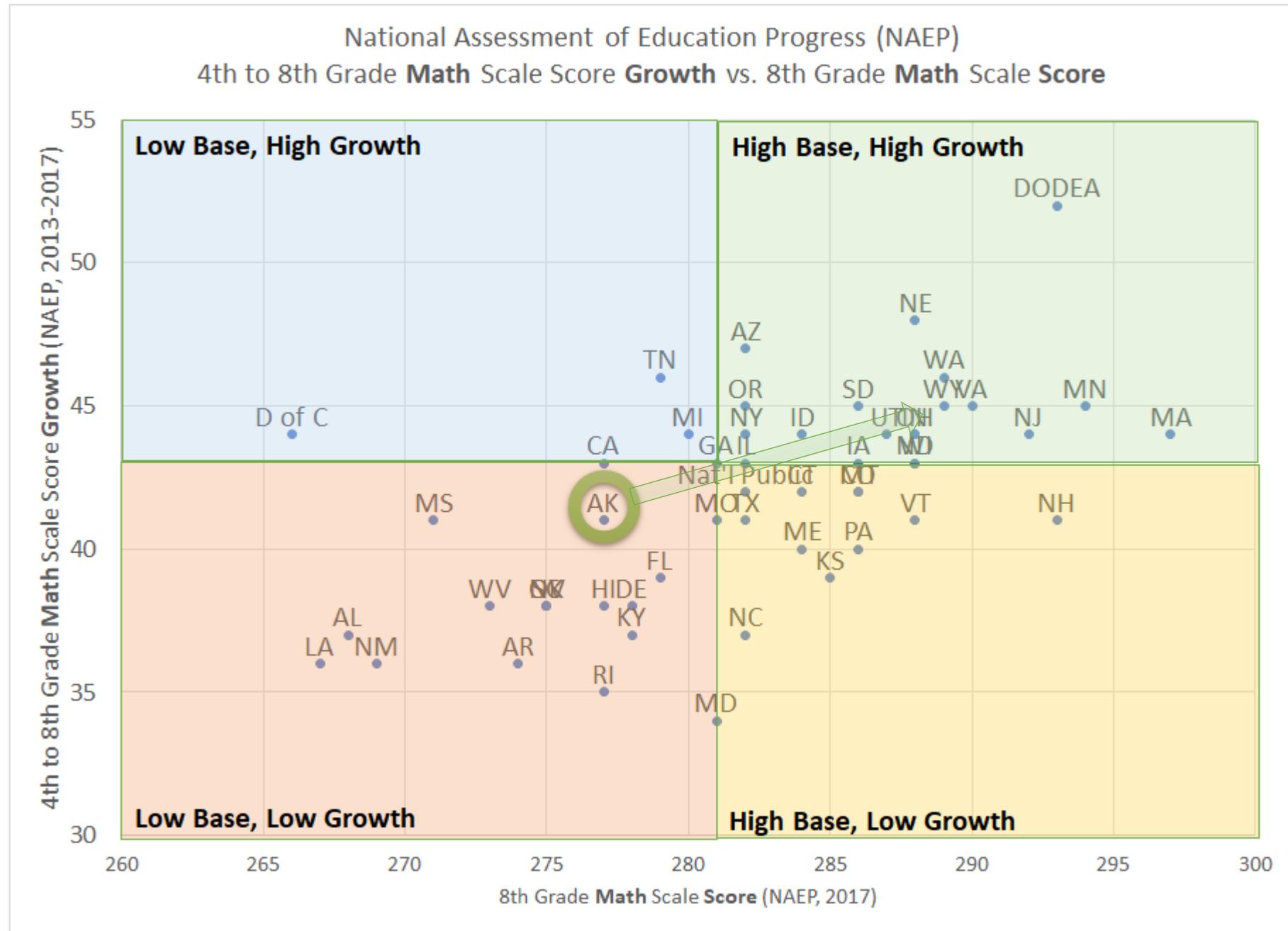
How are Alaskan Students Doing on Student Standards Based Assessments?

	4 th Grade	8 th Grade
National Assessment of Educational Progress (NAEP)		
Reading	4 th to 8 th Grade Scale Score Growth & 8 th Grade Scale Score	
Math	4 th to 8 th Grade Scale Score Growth & 8 th Grade Scale Score	
Performance Evaluation for Alaska Schools (PEAKS)		
English Language Learners	Percentage Proficient Maps	Percentage Proficient Maps
Math	Maps under dev't	Maps under dev't

K-12 Progress to Date
 AK Student Growth & Achievement:
 NAEP Reading

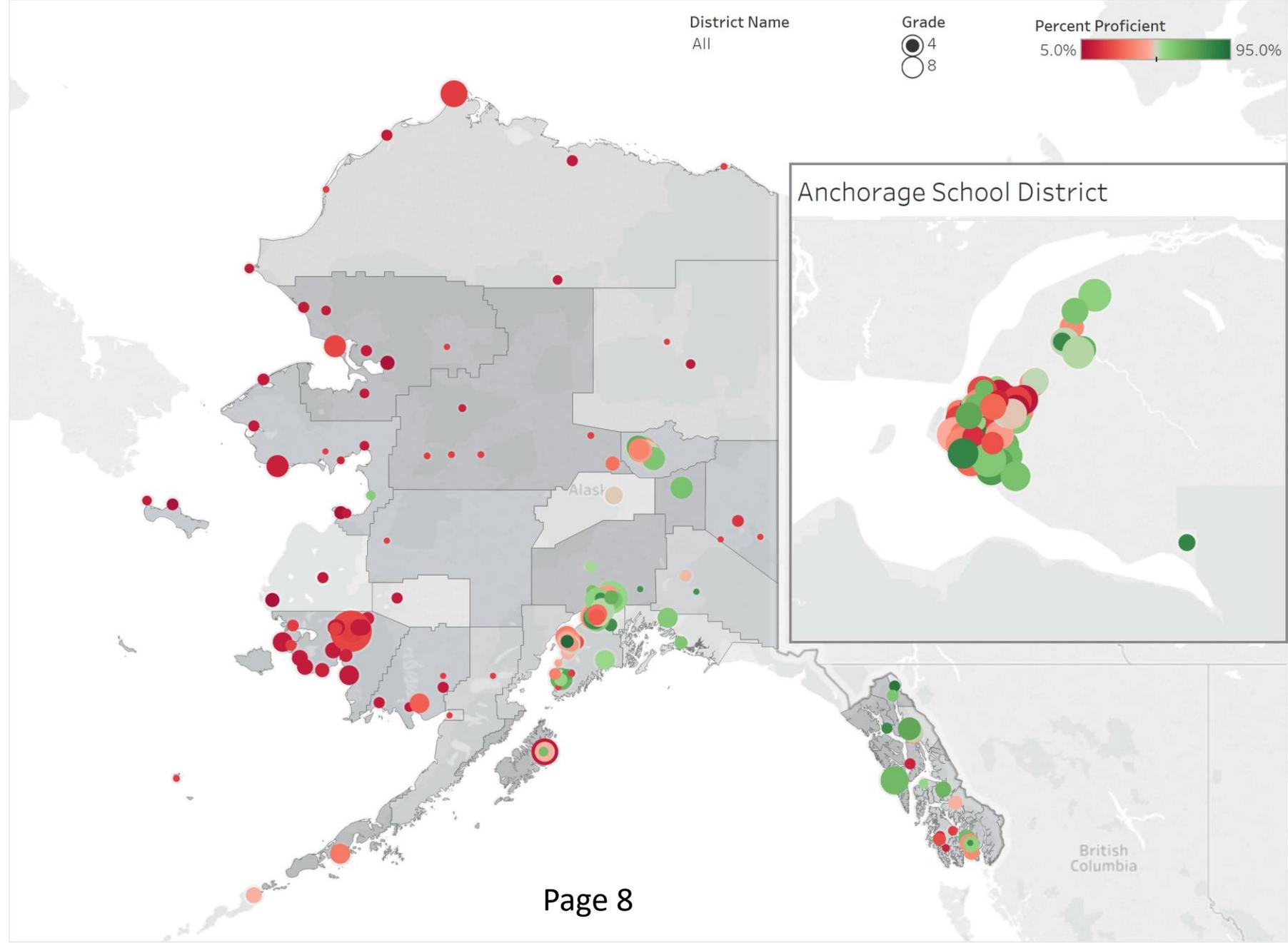


K-12 Progress to Date
 AK Student Growth & Achievement:
 NAEP Math

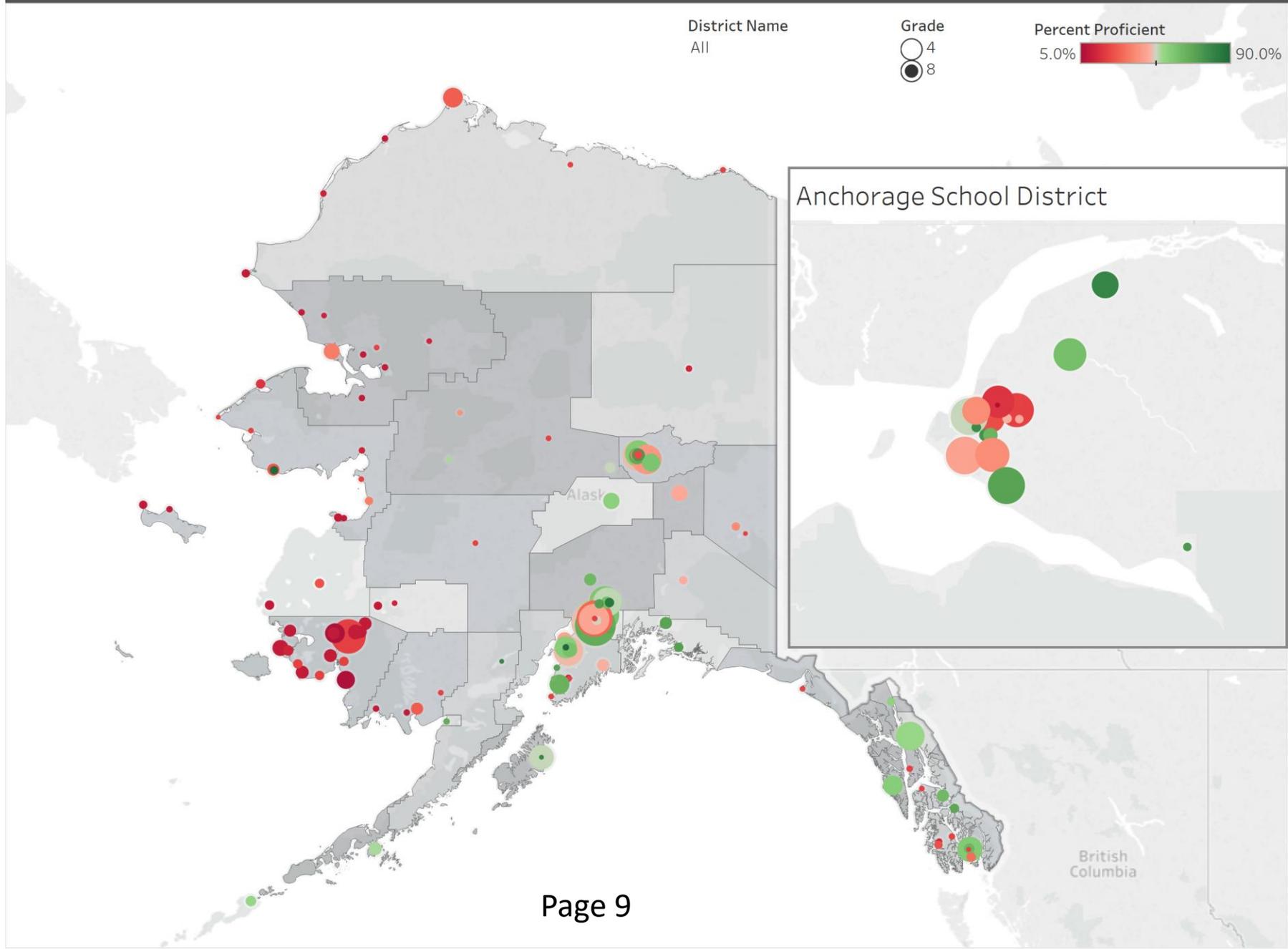


ALASKA PERFORMANCE EVALUATION FOR ALASKAN SCHOOLS (PEAKS)

4th Grade English Language Arts



8th Grade English Language Arts

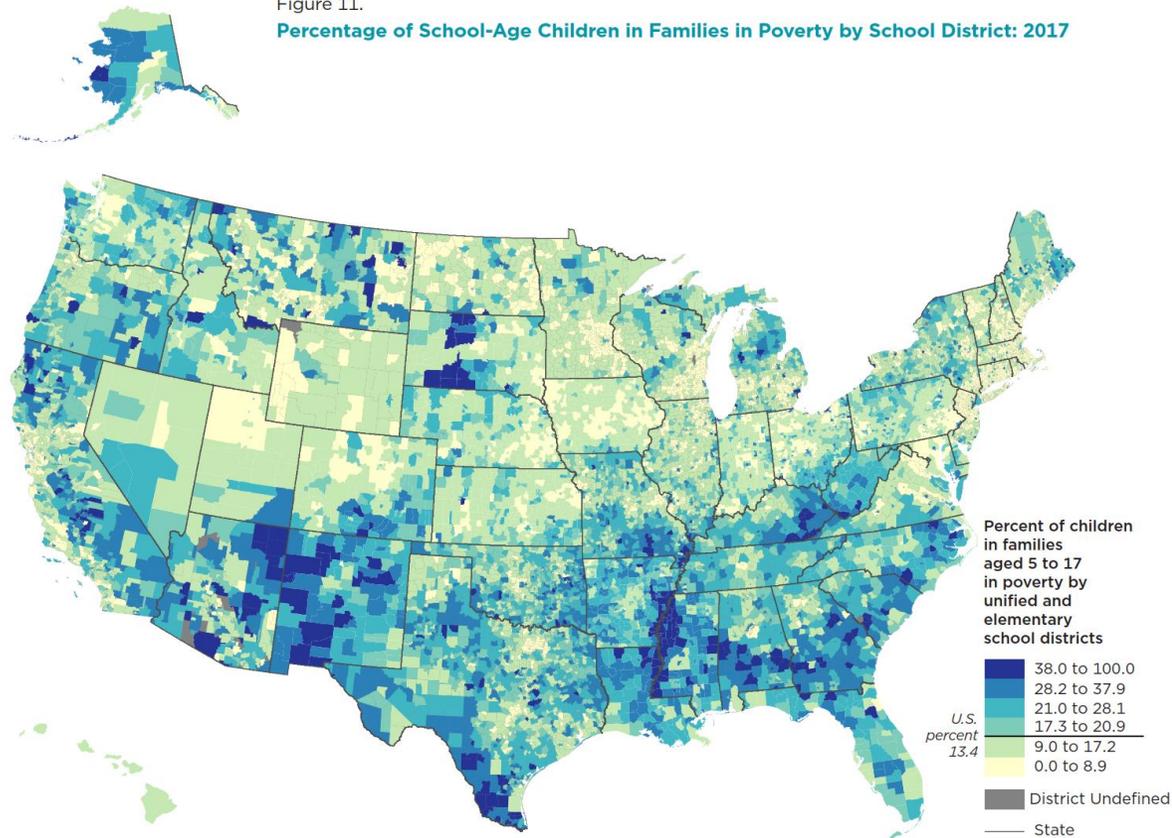


What drives the variation in test scores?

1. Test scores reflect poverty/affluence; frequently around $\frac{1}{2}$ of the variation in test scores reflect the household and neighborhood challenges associated with poverty
2. The Gates Foundation Project, “Measuring Effective Teaching” focuses on actual test scores less the predicted test score (based on social-economic demographics) to assess how well teachers are helping all of their students learn and grow, regardless of where they start.

Student Achievement & Poverty Are Highly Correlated across the U.S.

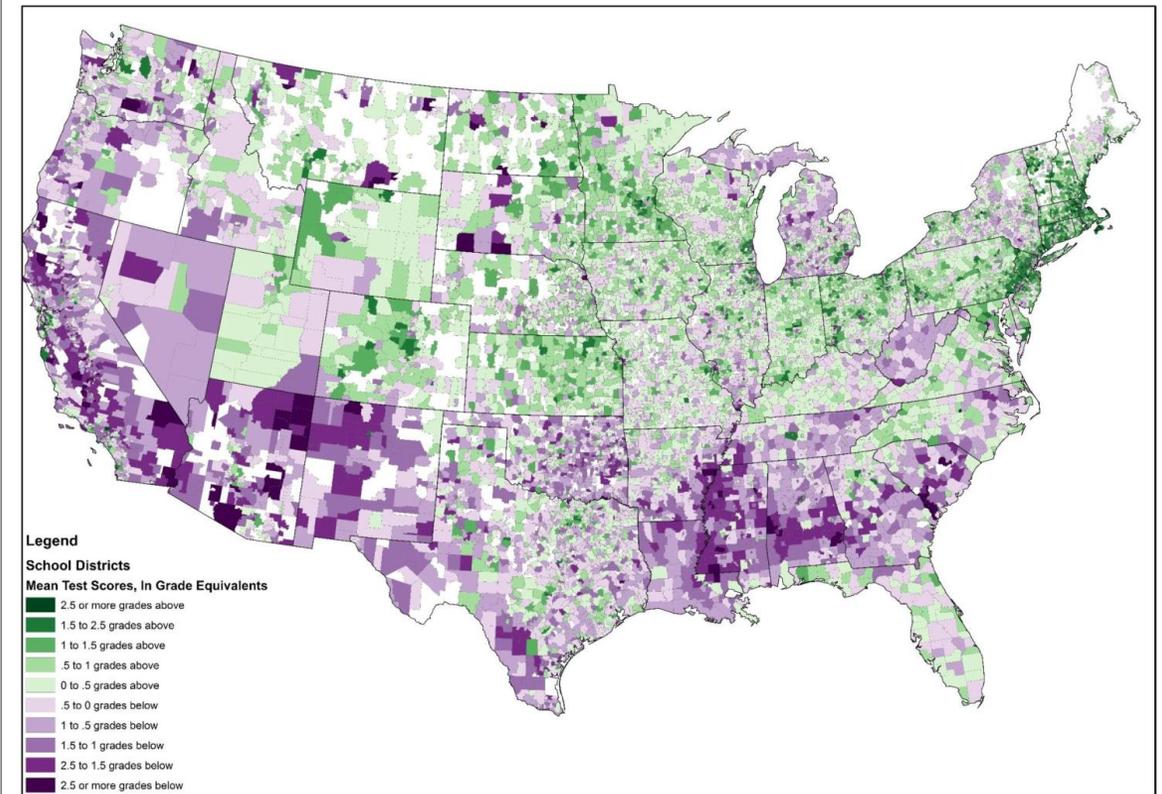
Figure 11.
Percentage of School-Age Children in Families in Poverty by School District: 2017



Note: The data provided are indirect estimates produced by statistical model-based methods using sample survey, decennial census, and administrative data sources. The estimates contain error stemming from model error, sampling error, and nonsampling error. Unified and Elementary School District boundaries are as of January 1, 2018.

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program, Dec. 2018.

Average Test Scores, by School District, Grades 3-8, 2009-2013

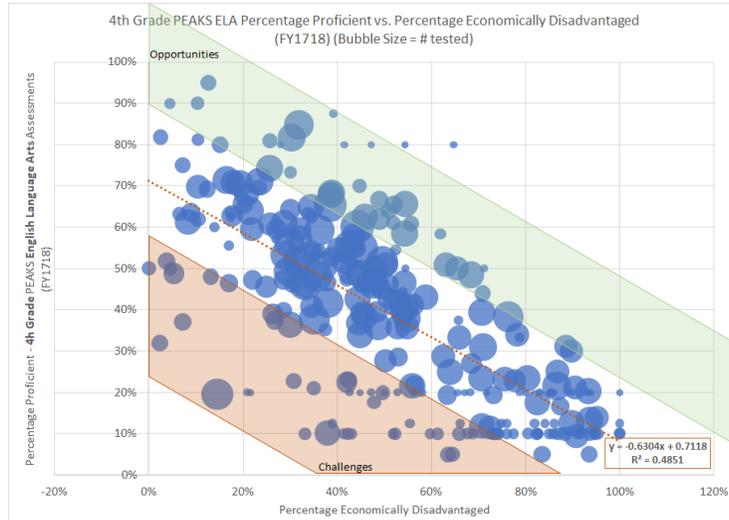


© (2016) sean f. reardon, Demetra Kalogrides, Erin Fahle, Kenneth Shores, and Benjamin Shear. Stanford Education Data Archive: seda.stanford.edu

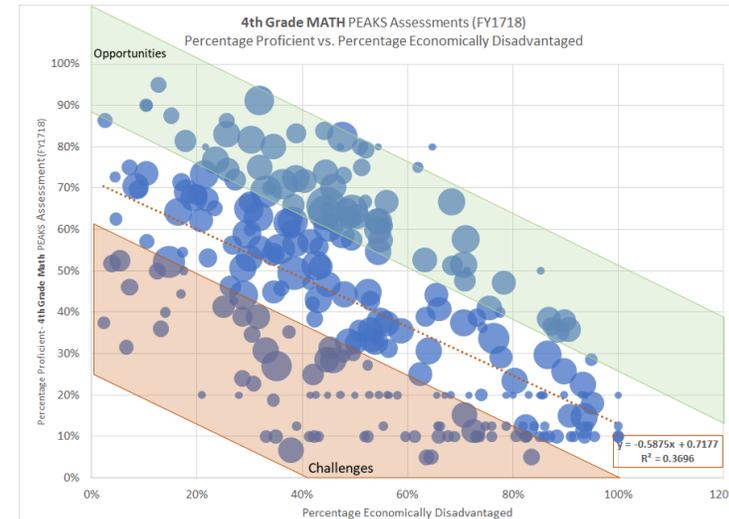
Student Achievement & Poverty Are Highly Correlated Across Alaska

4th Grade

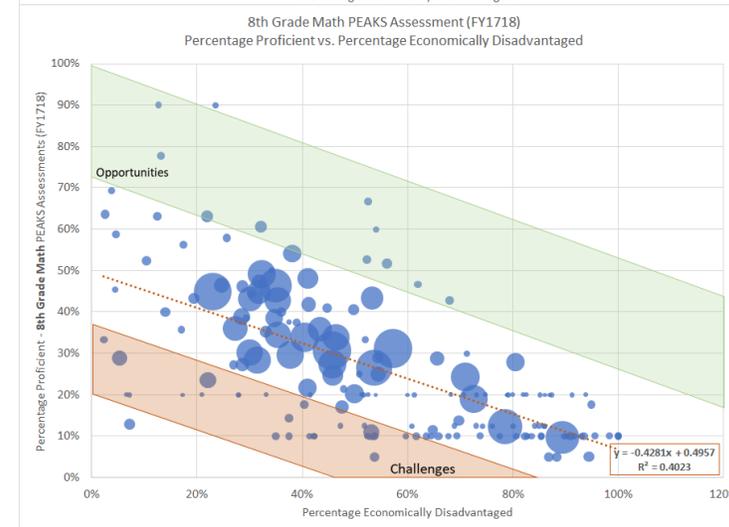
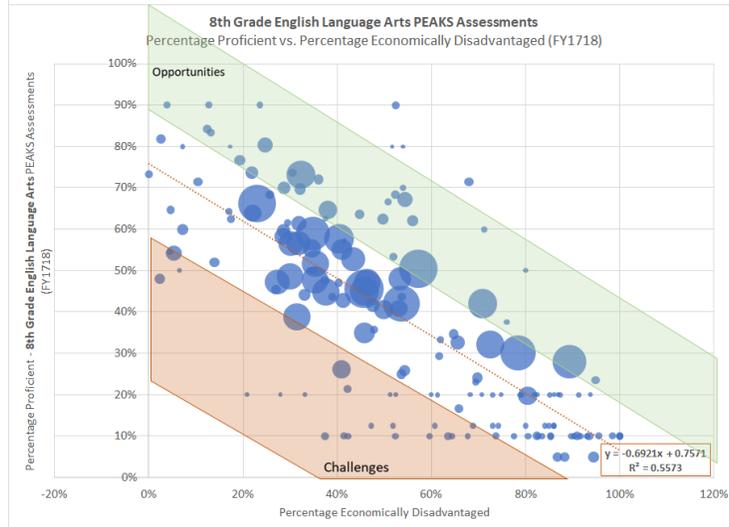
English Language Arts



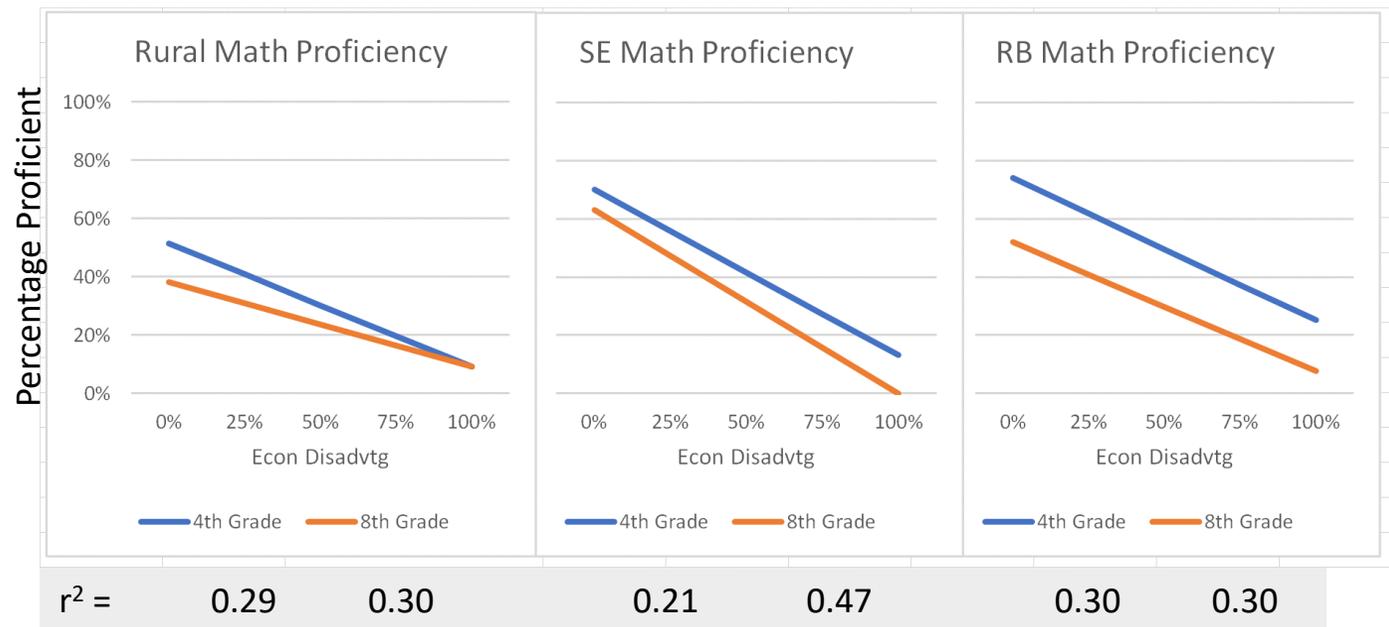
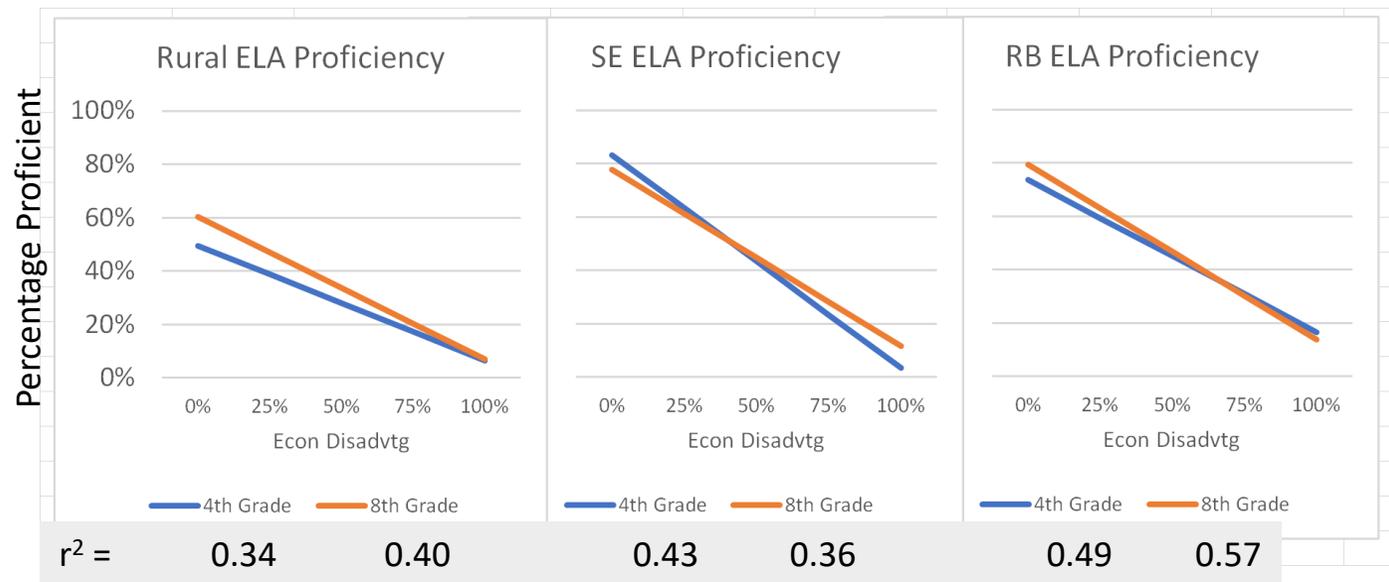
Math



8th Grade



Student Achievement and Poverty are relatively highly correlated within Alaska Regions (Rural, Southeast, Railbelt)

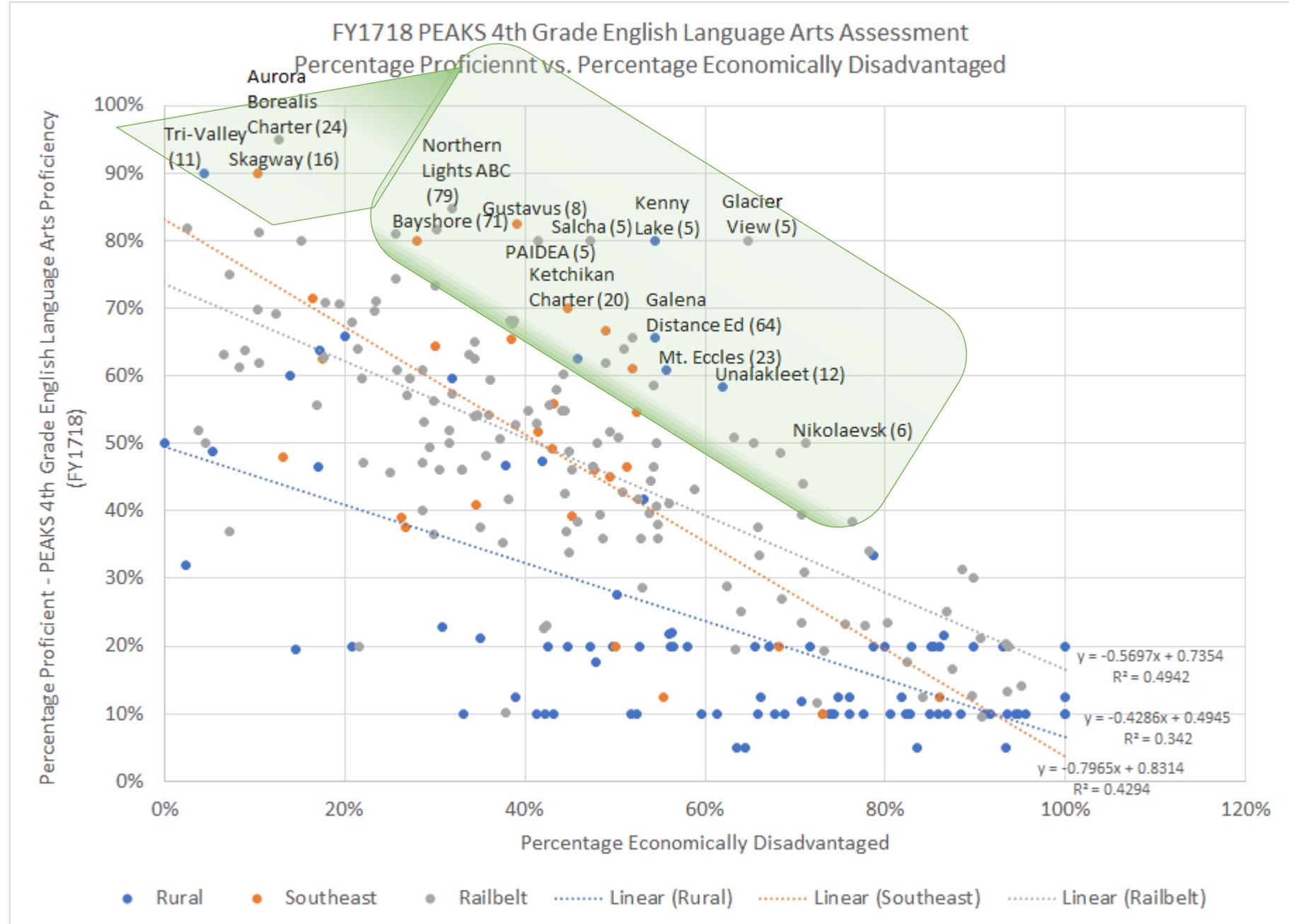


Measuring Effective Teaching In Alaska

Identify schools with students performing well above expectations in light of the prevalence of poverty

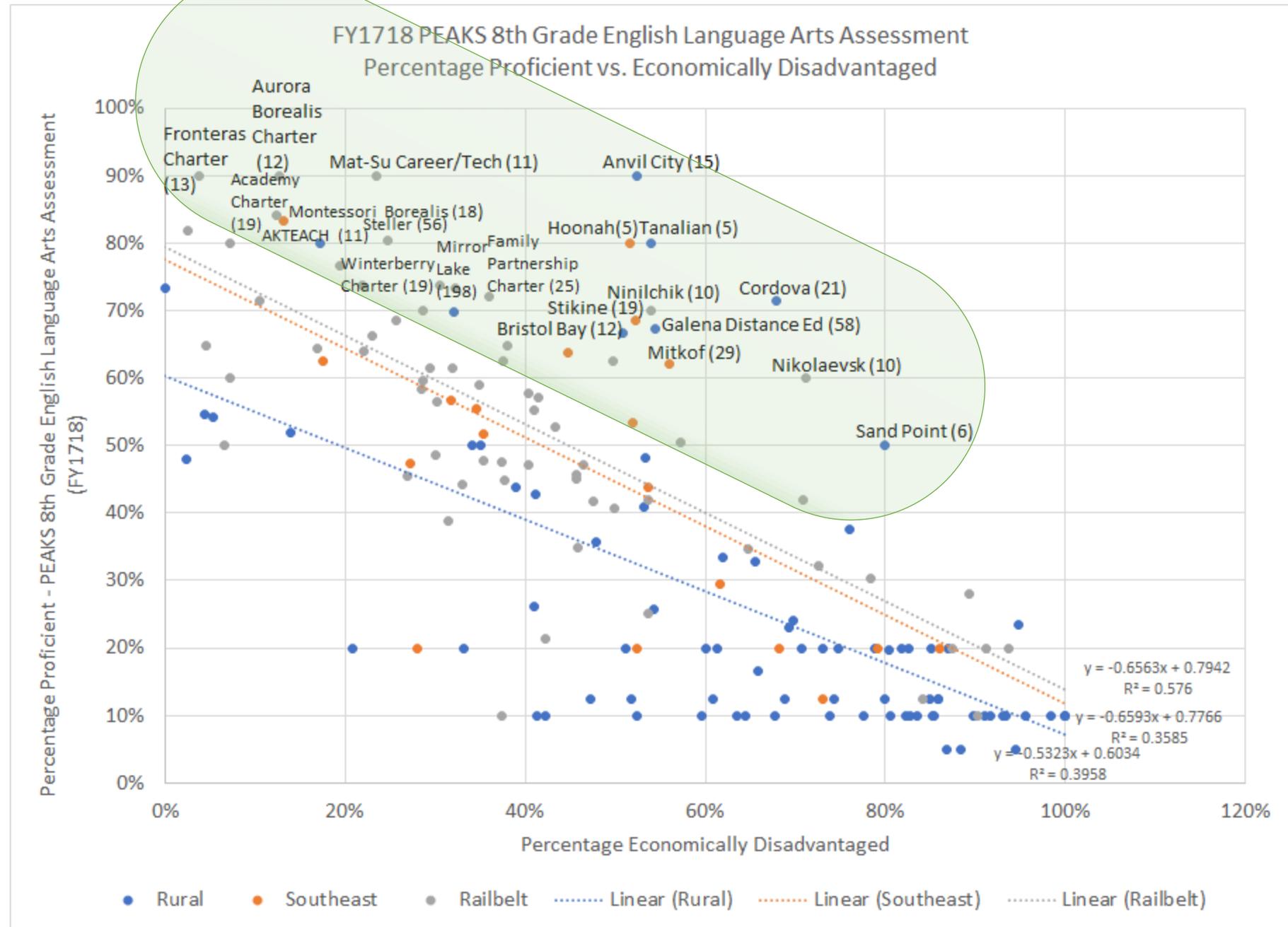
K-12 Progress to Date Student Assessments AK PEAKS English Language Arts 4th Grade

What can we learn from schools whose students are performing well above expectations relative to the headwinds of poverty, tailwinds of affluence; examples from across Alaska



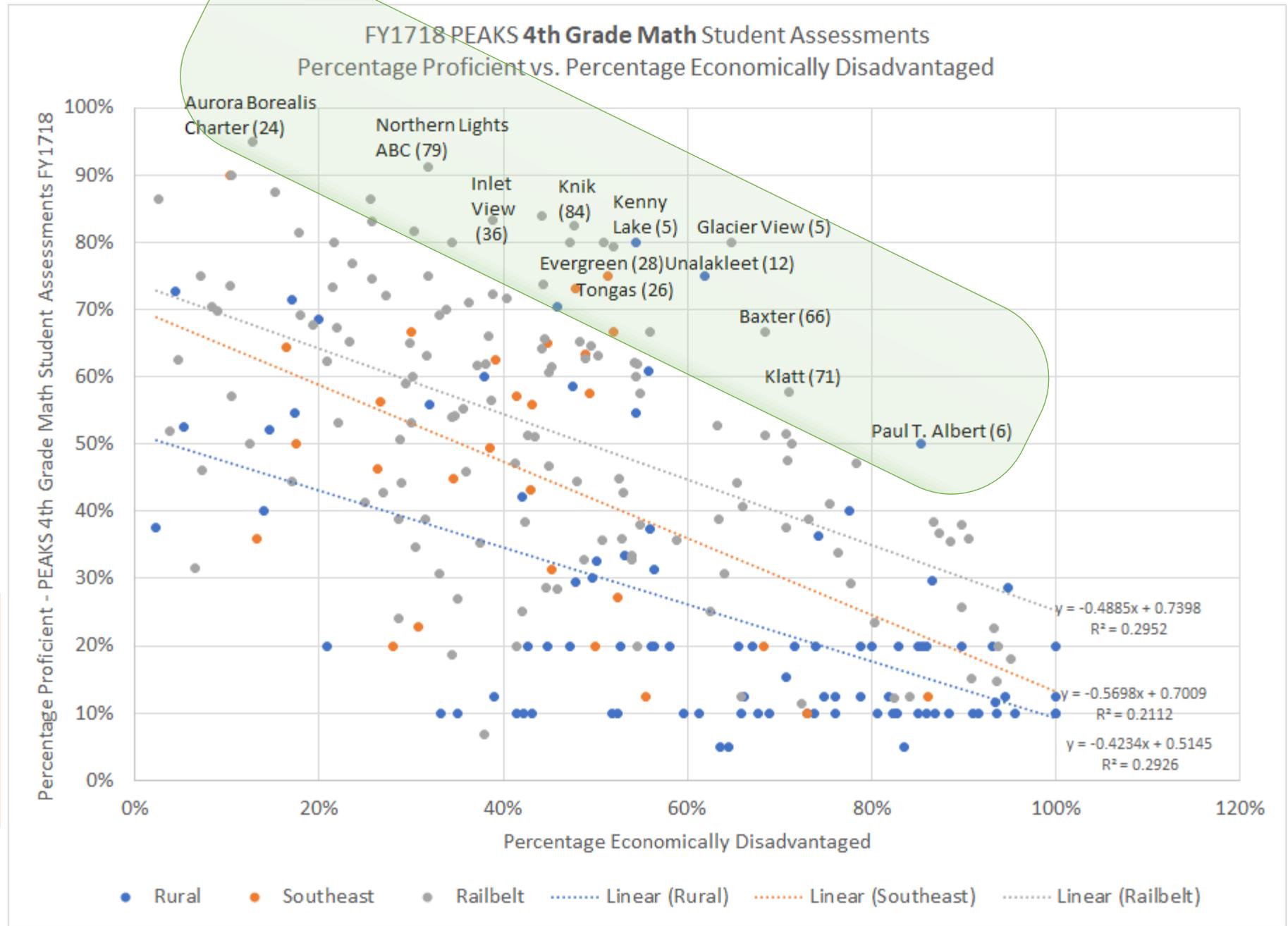
K-12 Progress to Date Student Assessments AK PEAKS English Language Arts 8th Grade

What can we learn from schools whose students are performing well above expectations relative to the headwinds of poverty, tailwinds of affluence; examples from across Alaska



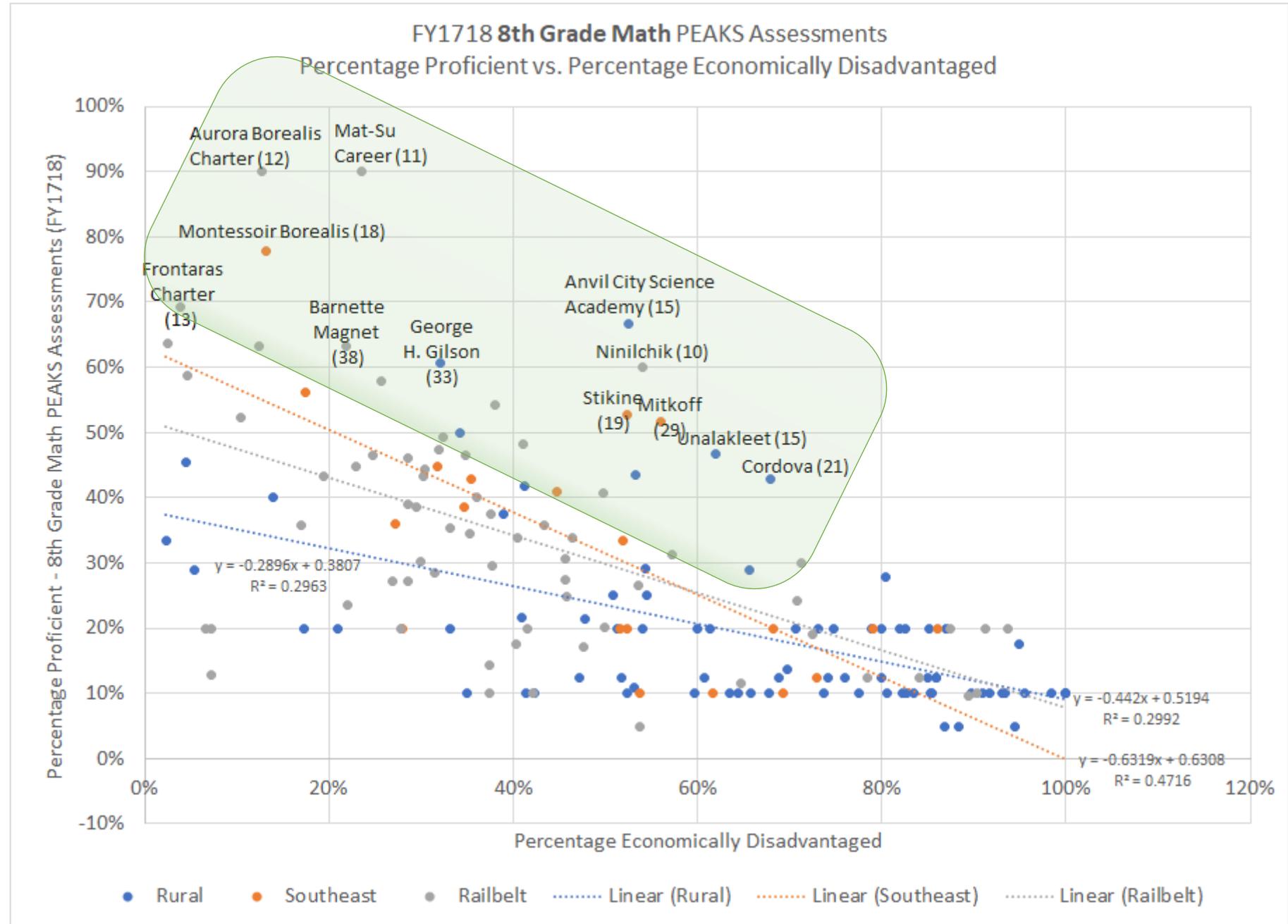
K-12 Progress to Date Student Assessments— AK PEAKS Math 4th Grade

What can we learn from schools whose students are performing well above expectations relative to the headwinds of poverty, tailwinds of affluence; examples from across Alaska



K-12 Progress to Date Student Assessments— AK PEAKS Math 8th Grade

What can we learn from schools whose students are performing well above expectations relative to the headwinds of poverty, tailwinds of affluence; examples from across Alaska

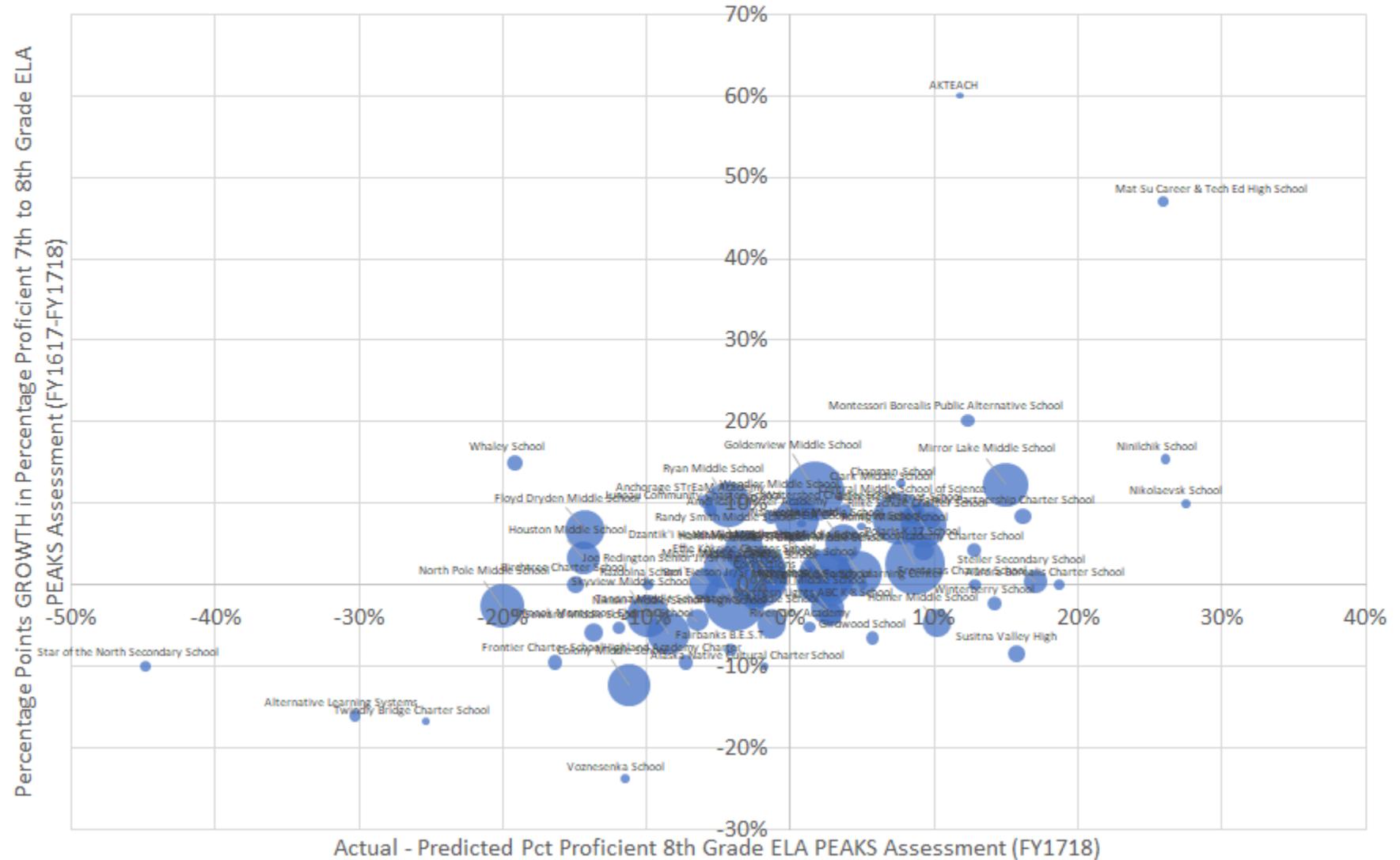


Measuring Effective Teaching

English Language Arts (ELA)

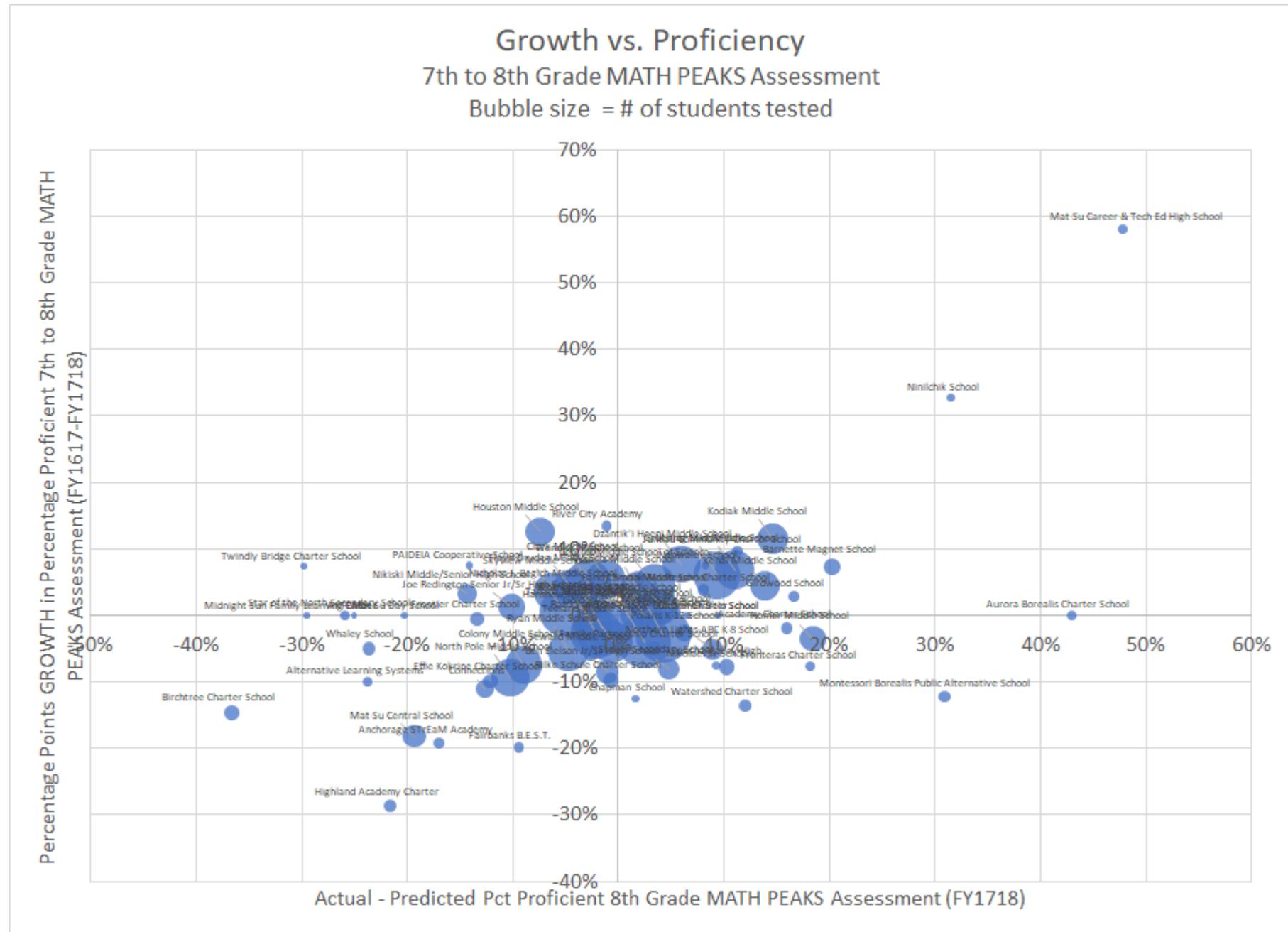
Growth & Proficiency 7th to 8th Grade

Growth vs. Proficiency
7th to 8th Grade English Language Arts PEAKS Assessment
Bubble size = # of students tested



Measuring Effective Teaching

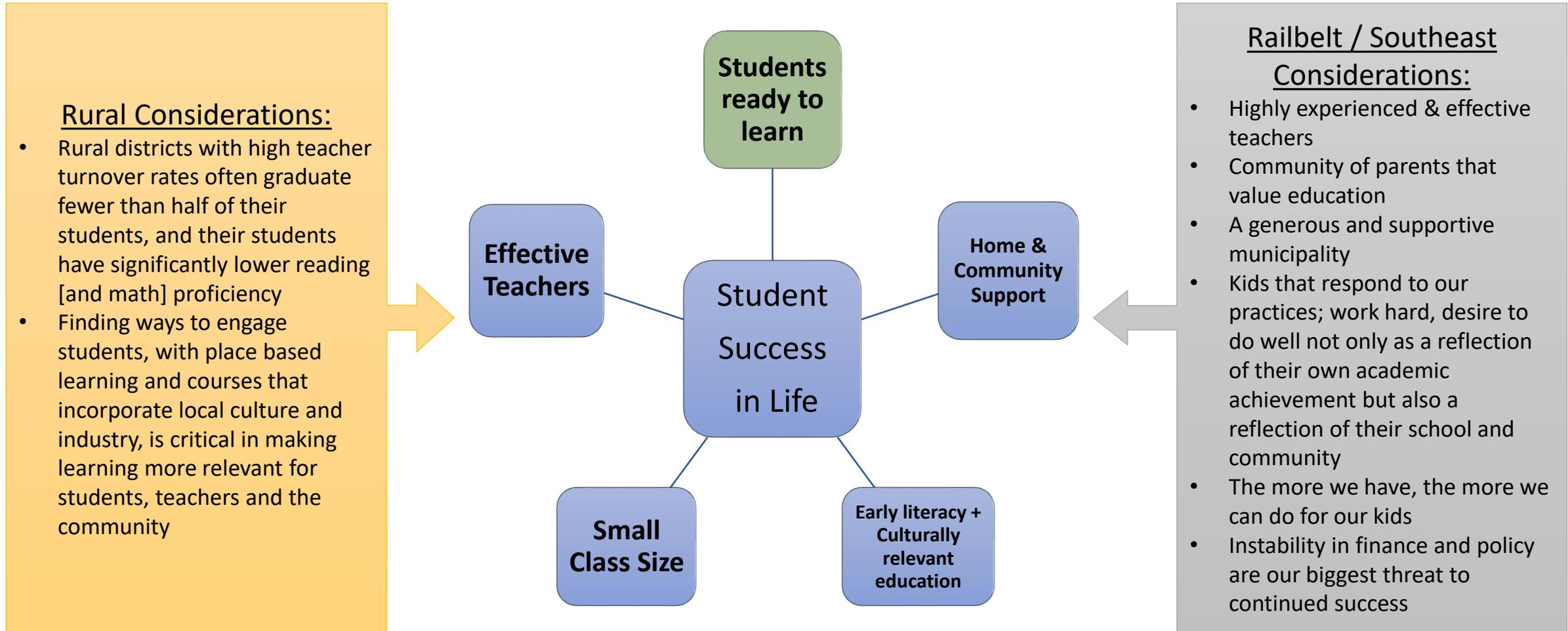
Math Growth & Proficiency 7th to 8th Grade



What do Alaska Superintendents identify as key factors driving student academic performance

Survey of school districts with schools who student assessments exceed expected results for their poverty level

What do local subject matter experts tell us when we ask “what is driving your superior results?”



What does the national/international research say about factors related to student achievement?

John C Hattie, Meta-Analysis of Education Research, “Visible Learning” (2017)

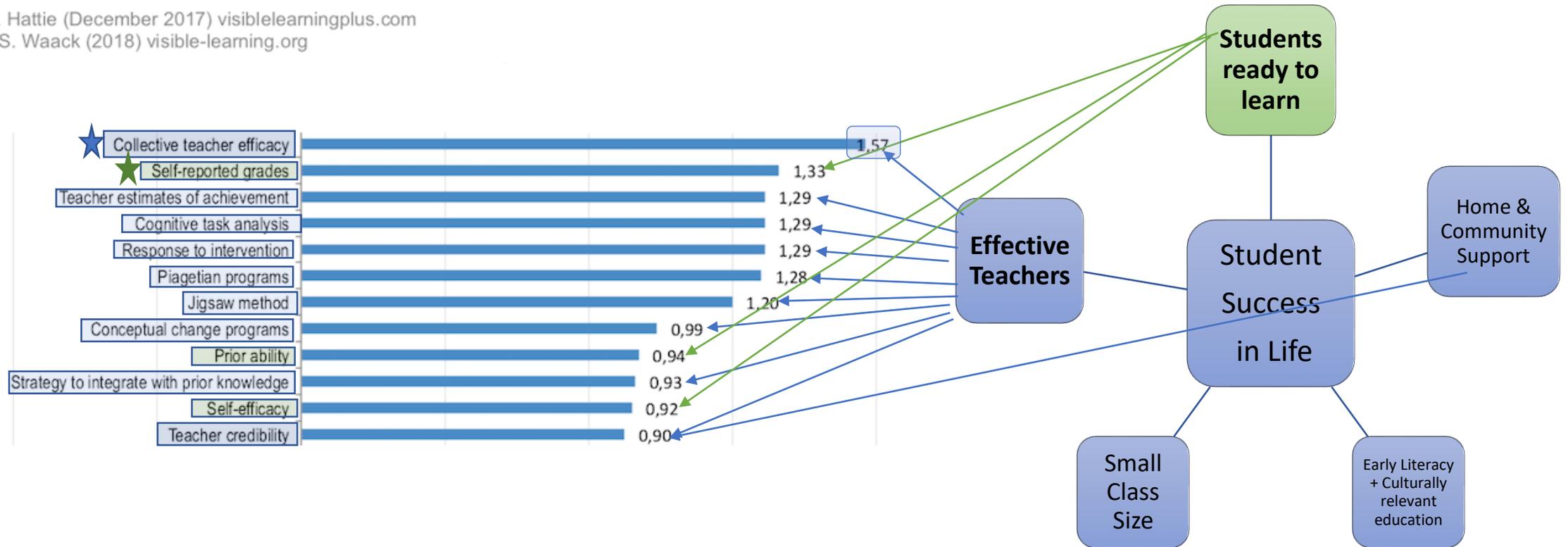
Raj Chetty, professor of economics at Harvard University, specializing in the field of public economics. Some of Chetty's recent papers have studied equality of opportunity in the United States and the long-term impact of teachers on students' performance. During Chetty's first occasion teaching at Harvard University, he was offered tenure at the age of 28 and accepted at 29, becoming one of the youngest tenured faculty in the history of Harvard's economics department. He is a recipient of the John Bates Clark Medal and a 2012 MacArthur Fellow. (2014-2018)

K-12 Investing In Effective Measures to Support Student Success in Life

National & International Research (Hattie)

Hattie's 2018 updated list of factors related to student achievement: 252 influences and effect sizes (Cohen's d)

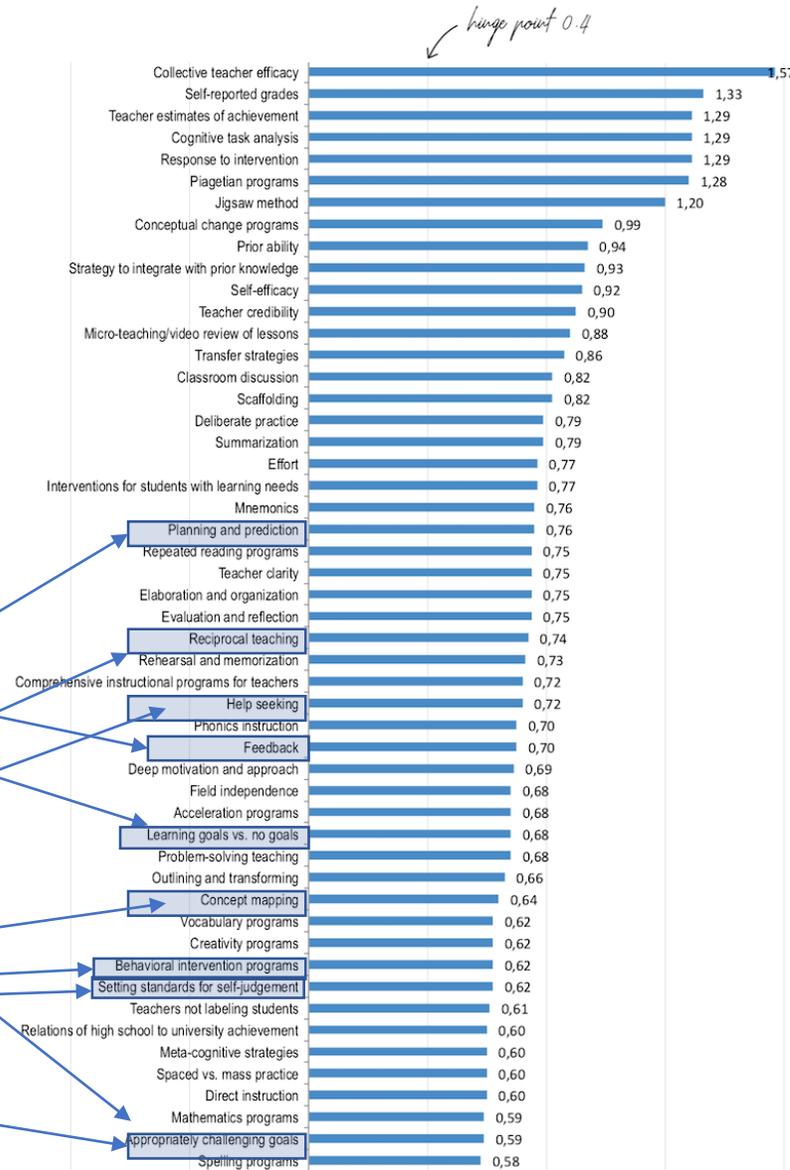
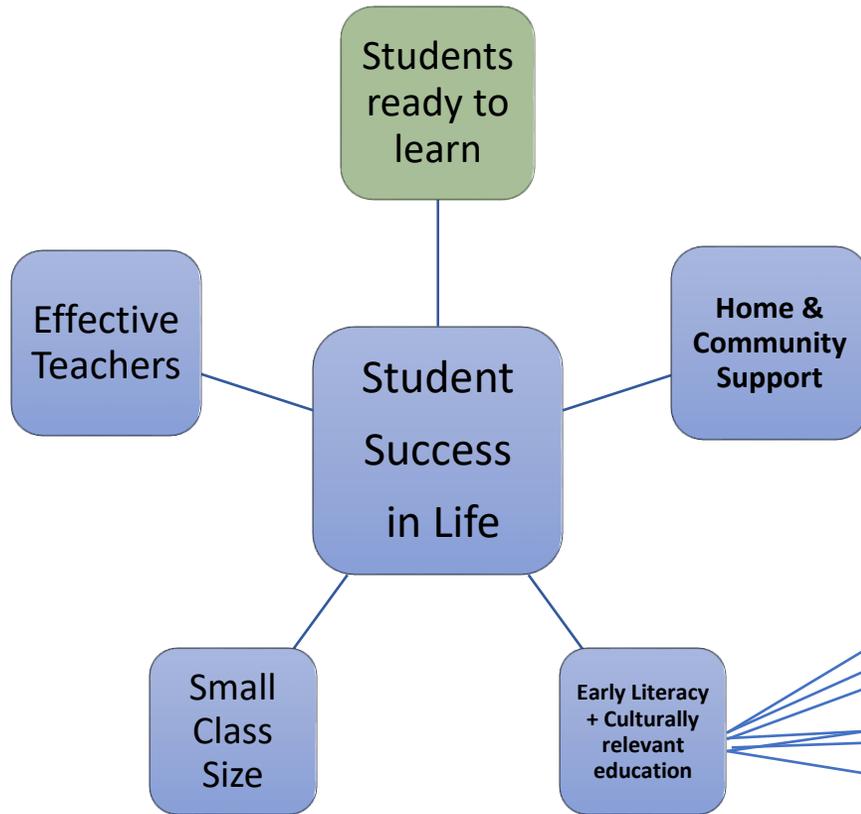
Source: J. Hattie (December 2017) visiblelearningplus.com
 Diagram: S. Waack (2018) visible-learning.org



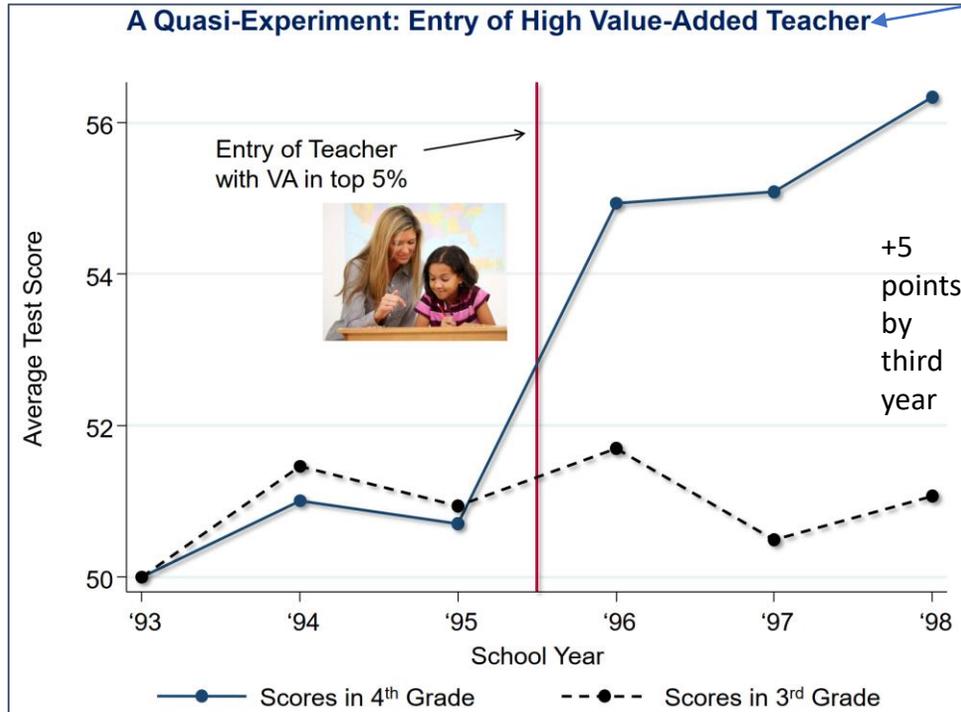
K-12 Investing In Effective Measures to Support Student Success in Life

Hattie's 2018 updated list of factors related to student achievement: 252 influences and effect sizes (Cohen's d)

Source: J. Hattie (December 2017) visiblelearningplus.com
 Diagram: S. Waack (2018) visible-learning.org

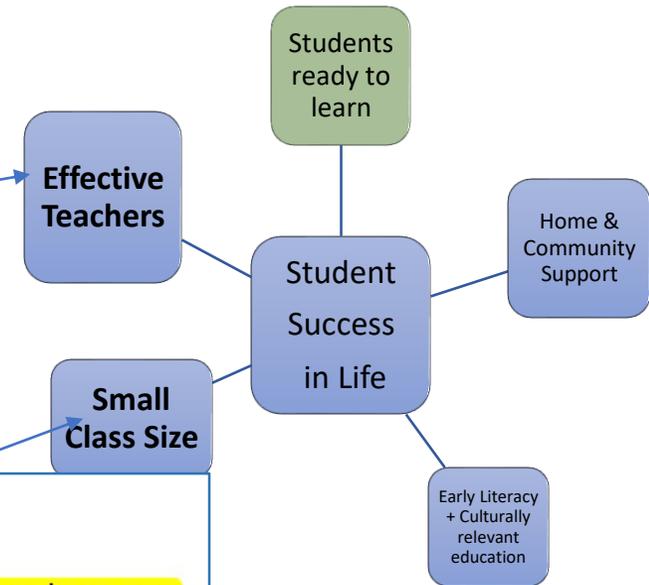


Rigorous U.S. “Big Data” Research Supports Highly Effective Teachers + Small Class Size



Lessons on Class Size

- Reducing class sizes in primary school by hiring more teachers can have large returns
 - Present value of lifetime earnings of a child growing up in a family at 25th percentile is about \$500,000 on average
 - 4% earnings gain from smaller class = \$20,000
 - Dividing a class of 30 students into two would increase total earnings of students by more than \$600,000
 - Costs (hiring another teacher and an additional room) likely to be well below \$600,000

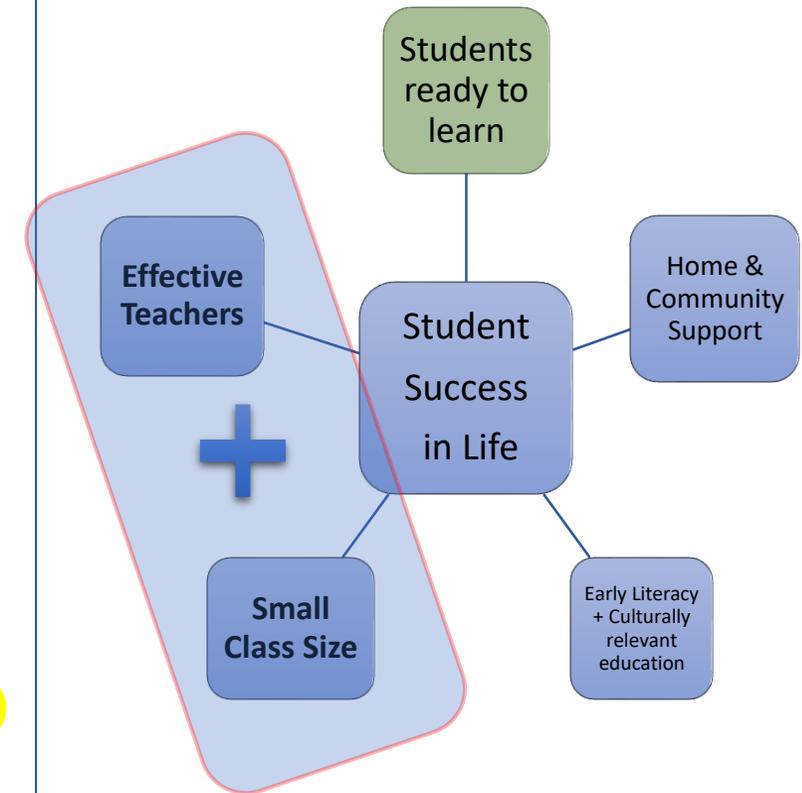


Source: Professor Raj Chetty, Head Section Leader Rebecca Toseland, “Using Big Data to Solve Social & Economic Problems”, Harvard University, Opportunity Insights, Lecture Chart Pack #6, Regression discontinuity using class size cutoffs, 2018

Reducing Class Size + Highly Effective Teachers = Large Long-Term Returns

- New data show that changing public schools in certain specific ways can have large long-term returns
- Reducing class size can be very valuable
 - But critical to hire highly effective new teachers when doing so
- There are large, measurable differences in teacher quality,
 - We should do more to attract and retain top teachers in public schools (not just using value-added metrics but also other tools)

Highly effective = Growth across skills & knowledge + social skills to prepare students for success in life

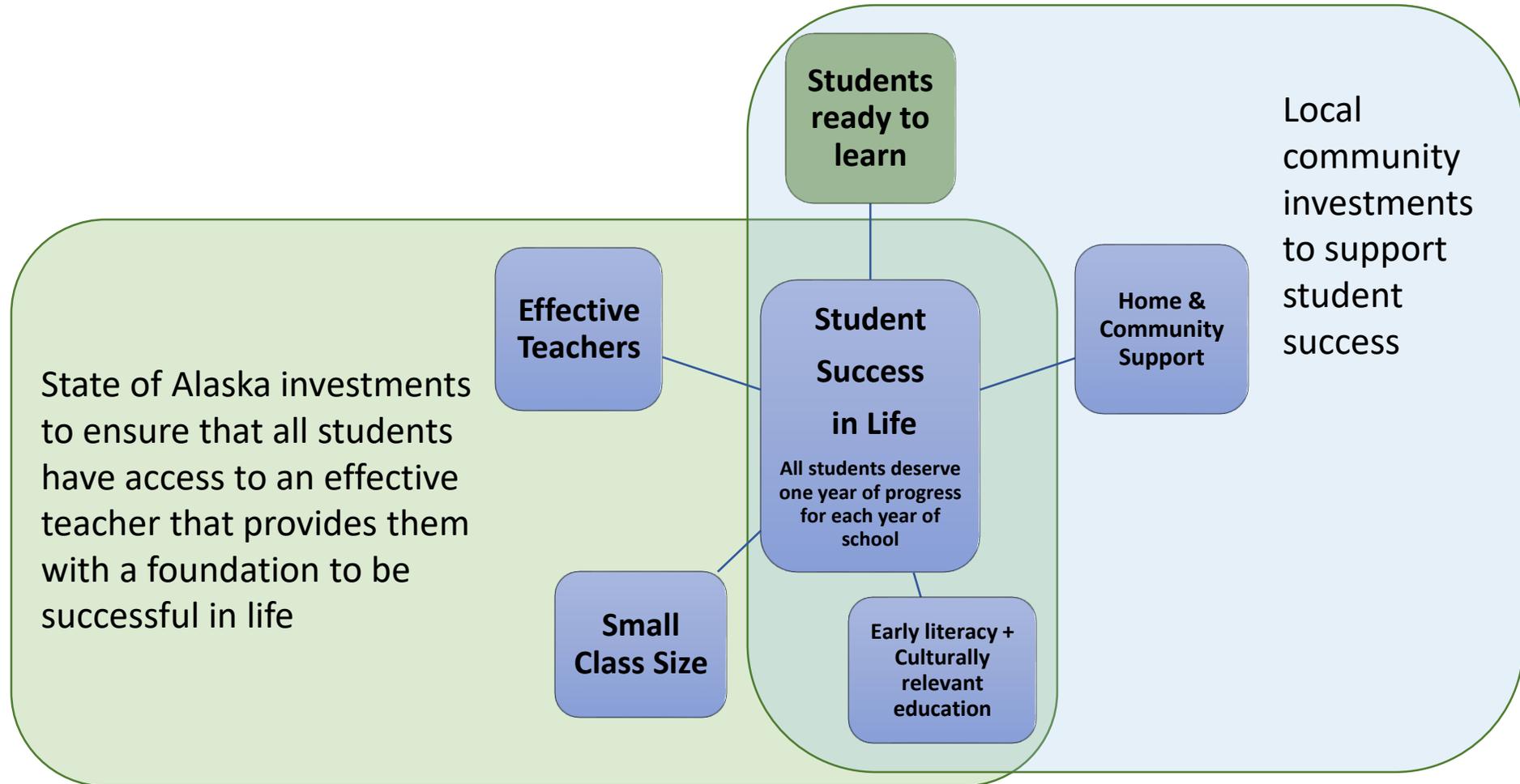


Source: Professor Raj Chetty, Head Section Leader Rebecca Toseland, "Using Big Data to Solve Social & Economic Problems", Harvard University, Opportunity Insights, Lecture Chart Pack #6, Regression discontinuity using class size cutoffs, 2018

SUMMARY

- Vision: All students will succeed in their education and work
- Goal: Every child deserves at least one year of progress for each year of school
- Keys to a successful long term State + Local Community + Local School partnership:
 - State Investment requires public accountability with specific measurable goals related to ensuring all students make at least one year of progress for each year of school
 - Link local autonomy to success in providing at least one year of progress
 - Build support for increasing the prevalence of high impact schools and teachers in Alaska

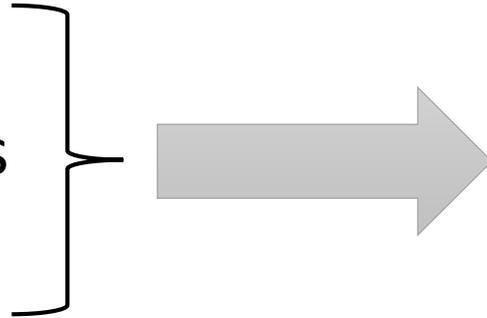
Successful State-Local Partnership



Recommendation

Target Investment

- Small class size
- Effective teachers
- Early Literacy



Accountability

- Every child deserves one year of progress for each year of school