Equitable Access Support Network

Visualizing Equity Gaps: Examples from Oklahoma & Tennessee

April 22, 2015

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Webinar Objectives

Attendees will:

- View specific data visualizations designed to diagnose equity gaps and monitor their amelioration.
- Learn from the process used in Oklahoma and Tennessee for selecting measures, conducting analyses, and visualizing the gaps.

Agenda

- Examples from Oklahoma
- Examples from Tennessee
- Q&A

Facilitators and Presenters

- **Monica Young,** Equitable Access Support Network
- **Andy Baxter,** Southern Regional Education Board
- **Megan Clifford,** Oklahoma State Department of Education
- **Mary Batiwalla & Michael McWeeney,** Tennessee Department of Education

Examples from Oklahoma

Megan Clifford

Strategic Data Fellow
Oklahoma State Department of Education

Megan Clifford is a Strategic Data Fellow at the Center for Education Policy and Research at Harvard University and Data Scientist at the Oklahoma State Department of Education.

Ms. Clifford's research focuses predominately on postsecondary measures of teacher effectiveness and equitable distribution. She is currently completing research on the validity and reliability of value-added models in Oklahoma. Prior to this work, she served on the evaluation team of a Gates-funded, multi-year study on the implementation of a new evidence-based teacher evaluation rubric at the RAND Corporation. Ms. Clifford is a doctoral candidate at the Pardee RAND Graduate School where she is expected to complete a Ph.D. in Policy Analysis with a focus on quantitative and econometric methods in May 2015.

Oklahoma's Use of Data Visualizations

- Oklahoma uses several types of visualizations:
  - Maps
  - Scatterplots
  - Bar charts
  - Tables
- The selection of visualization type depends on the type of data, relationships identified in the data, and intended audience.

Maps

Benefits

- Can help stakeholders identify geographic trends in data

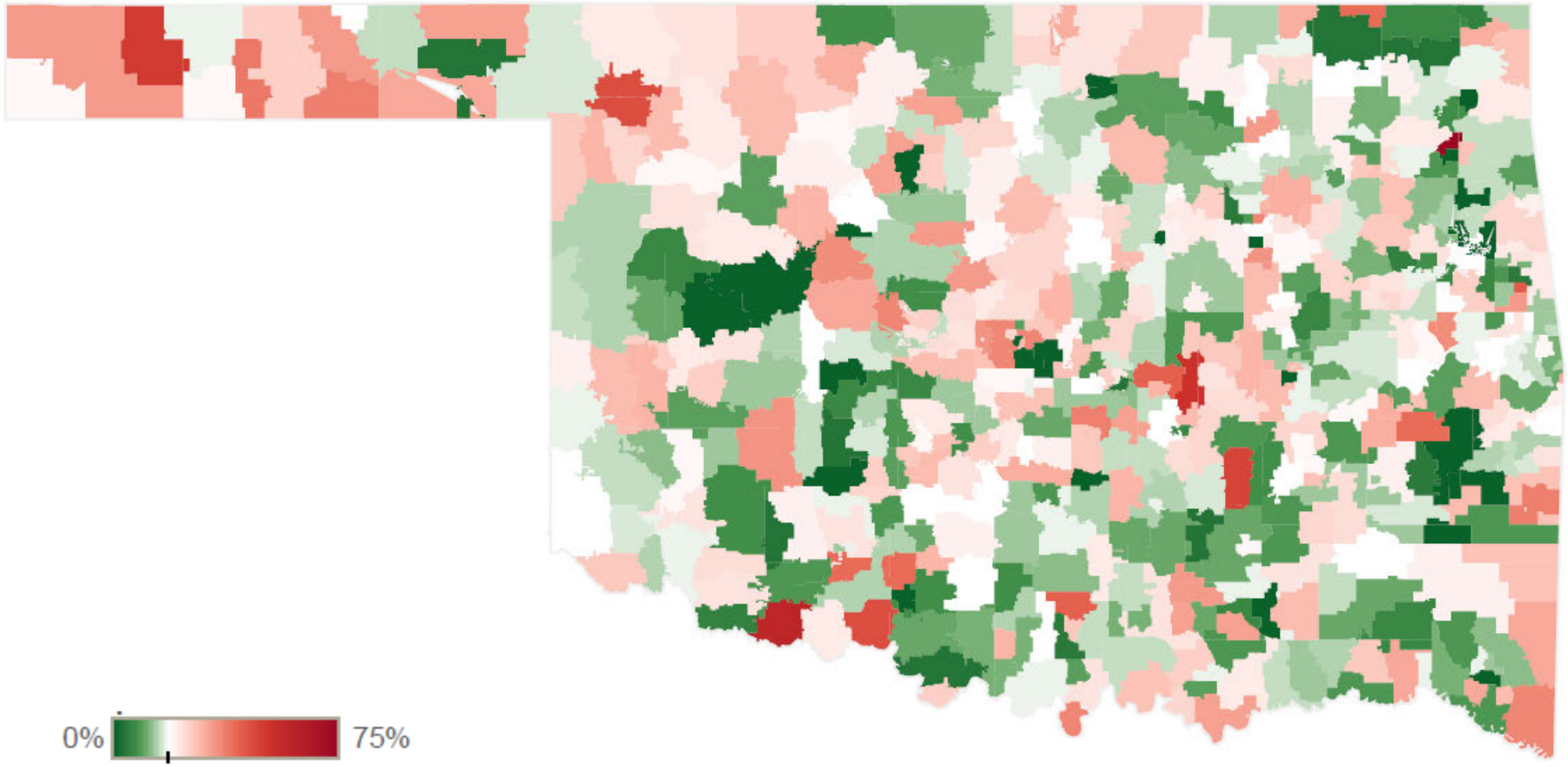
Disadvantages

- Difficult to identify exact values of areas on maps
  - Providing a supplementary table with detailed statistics is helpful
- May not be appropriate for certain types of data
  - Showing total counts rather than percentages, for example, may misrepresent data

Options for Creating

- ArcGIS
- Tableau

Example: The Percent of Inexperienced Teachers by District



Scatterplots

Benefits

- Can help stakeholders identify overall and sub-group trends
- Can help stakeholders identify outliers
- Exact data values are reasonably identifiable
- Multiple data dimensions can be displayed through color, size, and shape

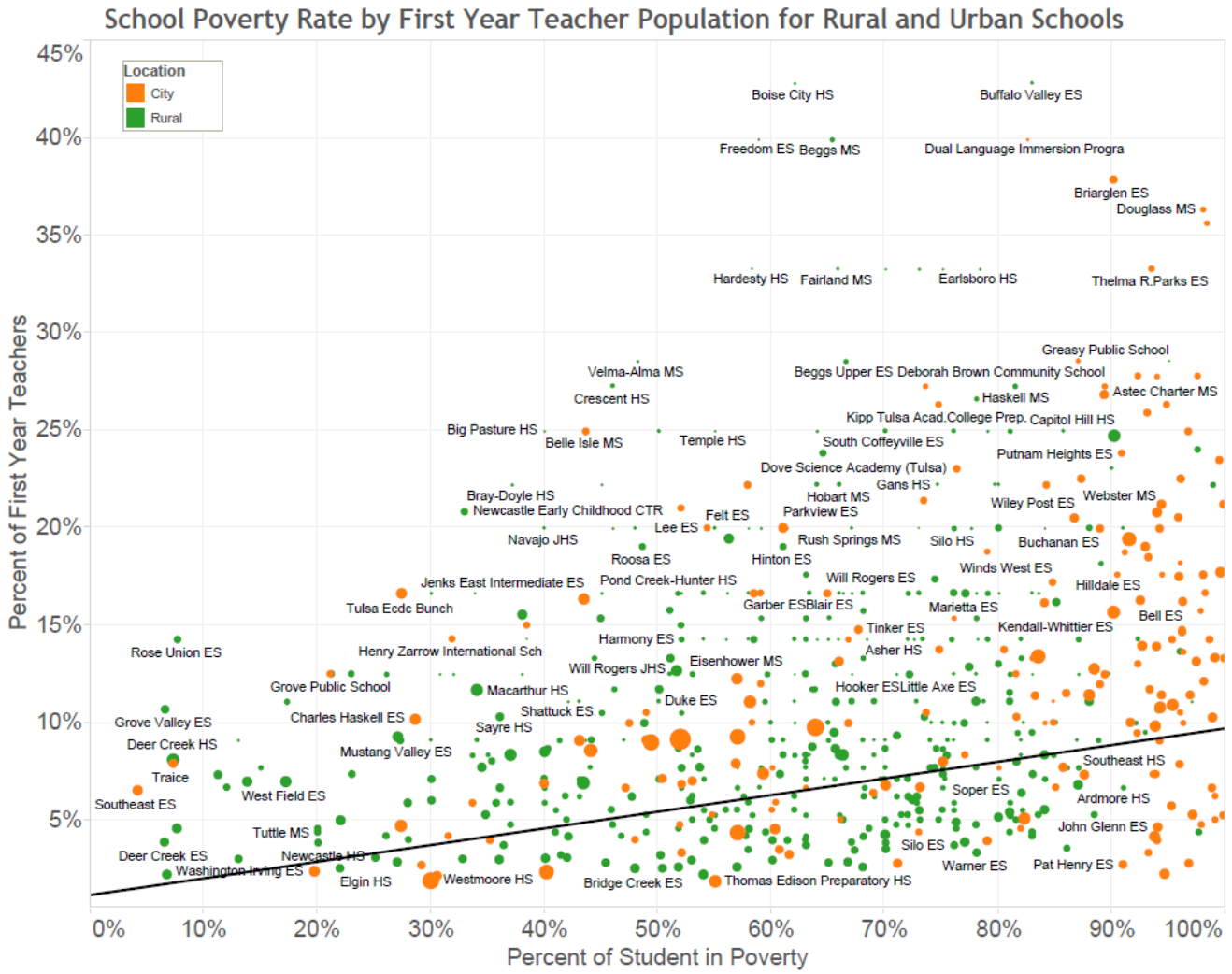
Disadvantages

- Difficult to display labels for all points
- Not very useful when no relationship exists between x and y variables

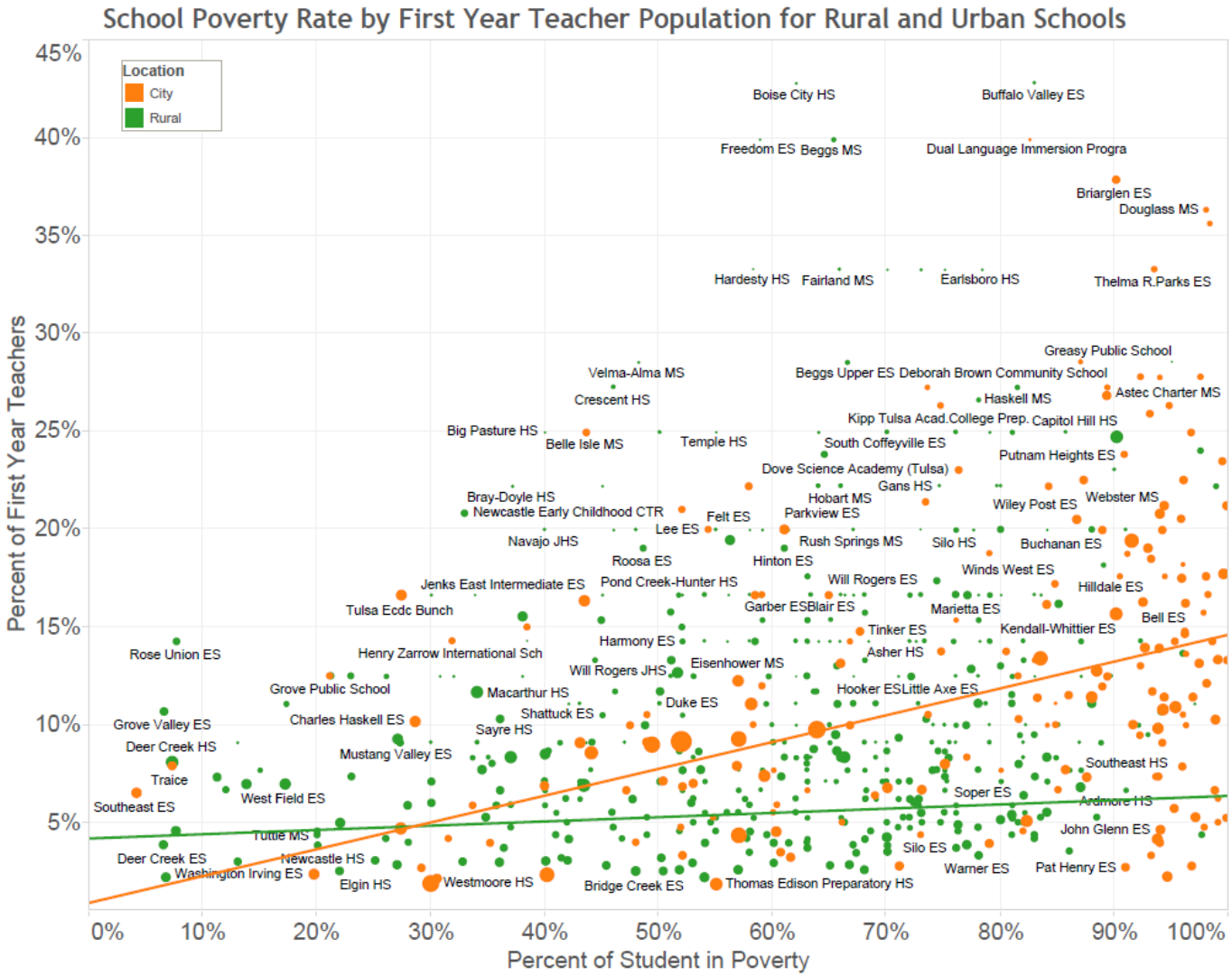
Options for Creating

- Statistical software like STATA, SAS, etc.
- Excel
- Tableau

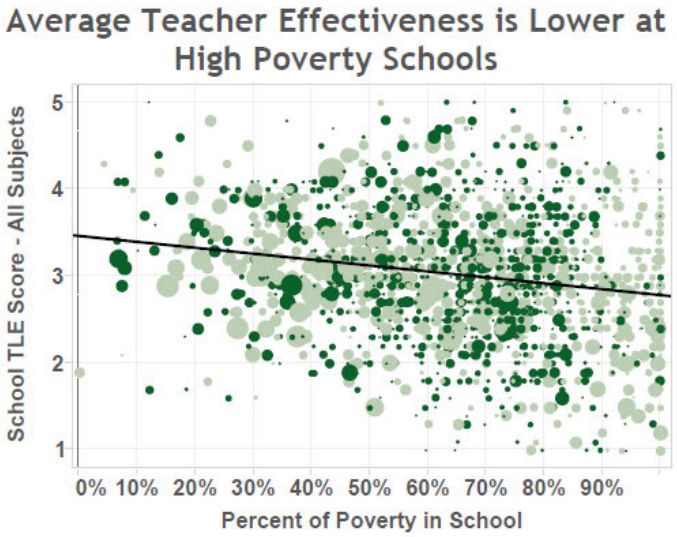
Example: Comparing Rural and Urban Schools

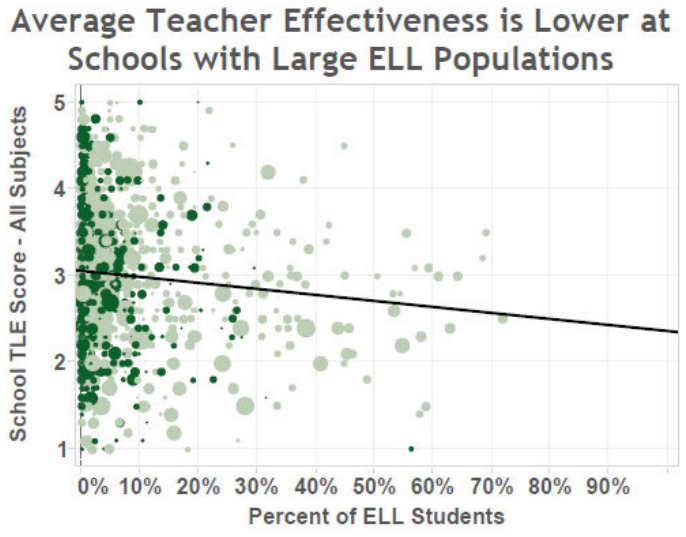


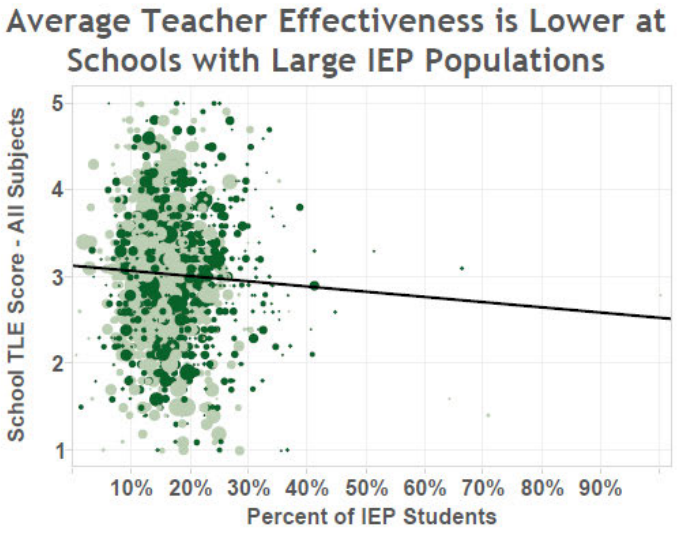
Example: Disaggregating Trend Lines

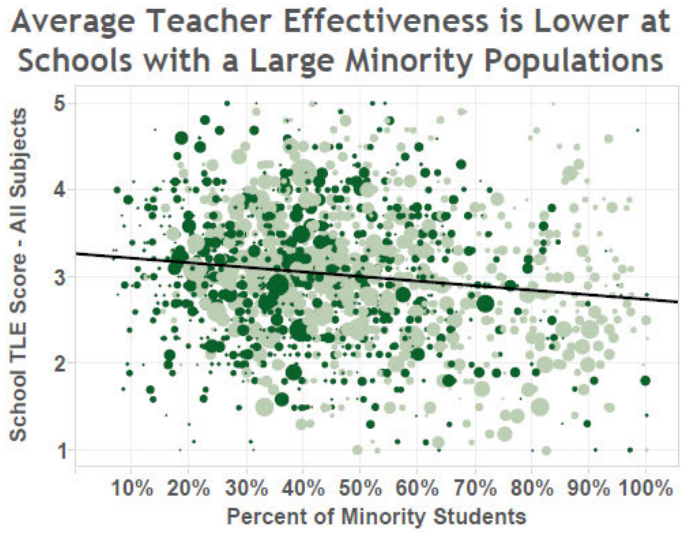


Example: Teacher Characteristics Also Varied by School Population









Bar Charts

Benefits

- Can provide exact data values for all observations
- Good at displaying equity gaps

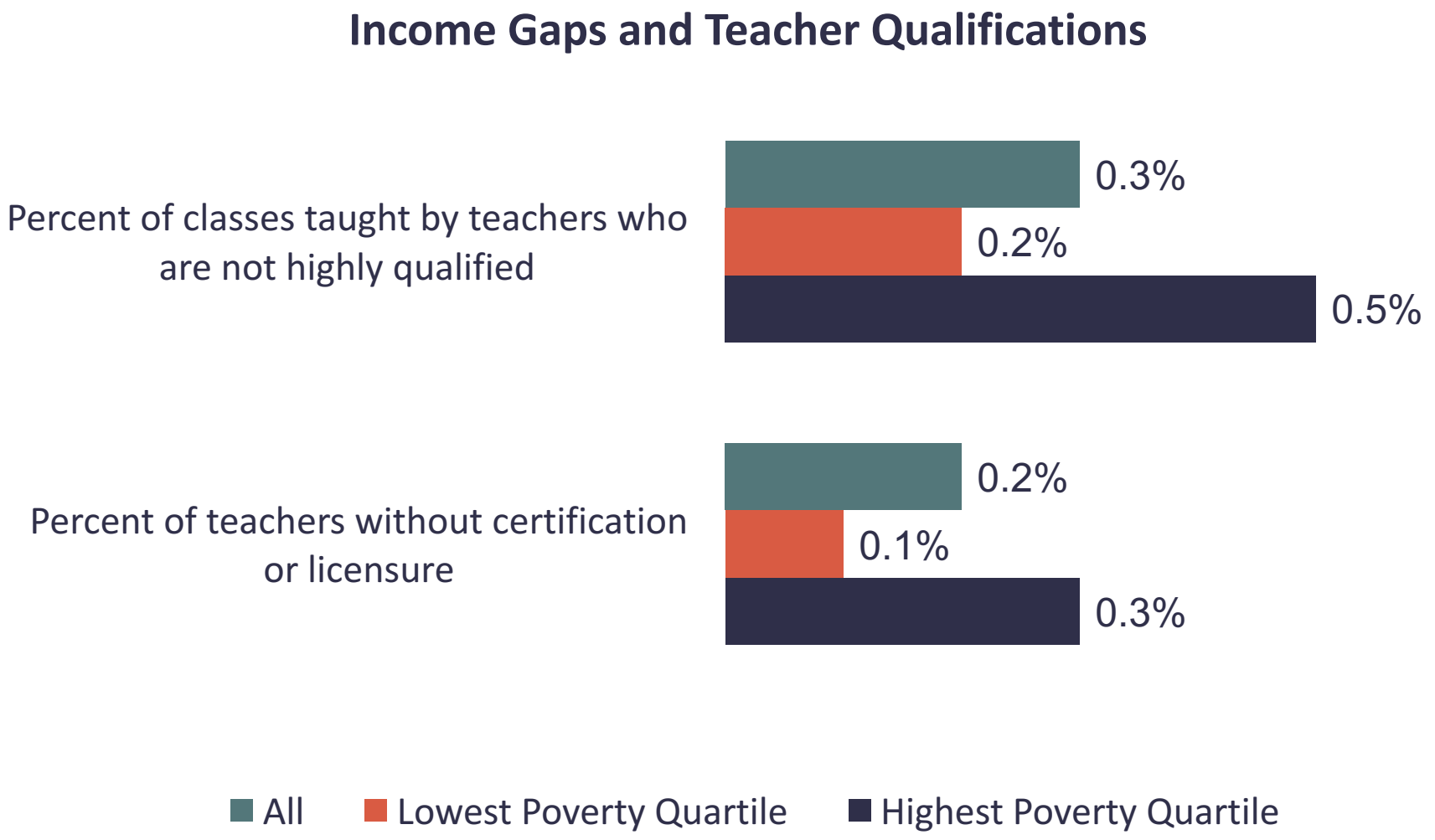
Disadvantages

- Not very good at displaying certain types of relationships or trends
- Difficult to display a large amount of data

Options for Creating

- Excel
- Tableau

Example: Bar Chart



Tables

Benefits

- Can provide exact data values for all observations
- Can supplement other visualizations

Disadvantages

- Not very good at displaying relationships
- May be very large

Options for Creating

- Excel
- Tableau

Example: Table of Equity Variables

School Details

District	School	Percent of Teachers with Fewer than Four Years of Experience	Percent of First Year Teachers	Percent of Teachers with Standard Certification	Poverty Percent	IEP Percent	African American Percent
Norman	Irving MS	27%	5%	77%	60%	16%	11%
	Jackson ES	29%	14%	93%	65%	16%	7%
	Jefferson ES	17%	4%	91%	58%	14%	5%
	Kennedy ES	43%	17%	90%	87%	13%	13%
	Lakeview ES	38%	8%	85%	59%	16%	0%
	Lincoln ES	35%	18%	76%	55%	17%	8%
	Longfellow MS	19%	8%	86%	55%	19%	5%
	Madison ES	15%	7%	89%	69%	15%	7%
	McKinley ES	33%	17%	89%	32%	14%	3%
	Monroe ES	45%	23%	91%	57%	13%	5%
	Norman HS	33%	13%	80%	45%	18%	9%
	Norman North HS	14%	5%	71%	34%	17%	4%
	Ronald Reagan ES	56%	7%	78%	67%	14%	11%
	Roosevelt ES	24%	6%	82%	17%	17%	2%
	Truman ES	15%	0%	95%	35%	17%	3%
	Truman Primary School	30%	11%	89%	42%	13%	3%
	Washington ES	16%	0%	77%	33%	11%	3%
	Whittier MS	36%	11%	83%	31%	16%	3%
	Wilson ES	33%	0%	87%	85%	22%	6%
North Rock Creek	North Rock Creek Public School	15%	3%	88%	53%	14%	1%
Norwood	Norwood Public School	8%	0%	92%	93%	20%	5%
Nowata	Nowata ES	31%	6%	91%	73%	11%	5%
	Nowata HS	11%	5%	89%	49%	13%	6%
	Nowata MS	14%	14%	71%	64%	15%	5%

Q&A

Share Your Thoughts!

Please type your question for Megan in the chat box.

Examples from Tennessee

Mary Batiwalla
Research and Policy Analyst
Tennessee Department of Education

Mary conducts internal research and works on accountability at the Tennessee Department of Education (TDOE). She is a former high school Spanish teacher. Before joining the TDOE, Mary assisted in education research at the National Center on Scaling Up Effective Schools, the State Collaborative on Reforming Education (SCORE), and a project studying the effectiveness of mentoring for beginning middle school math teachers. She completed a Master of Public Policy at Vanderbilt University.

Michael McWeeney
TEAM Program Analyst
Tennessee Department of Education

Michael is from Cincinnati, OH and graduated from Ohio State University in 2010.

After graduating, he taught 4th, 5th and 6th grade Math in Sunflower, Mississippi for three years. He is currently finishing up his Masters in Public Policy at Vanderbilt University, and he works on the teacher evaluation team with the Tennessee Department of Education.

Tennessee's Approach

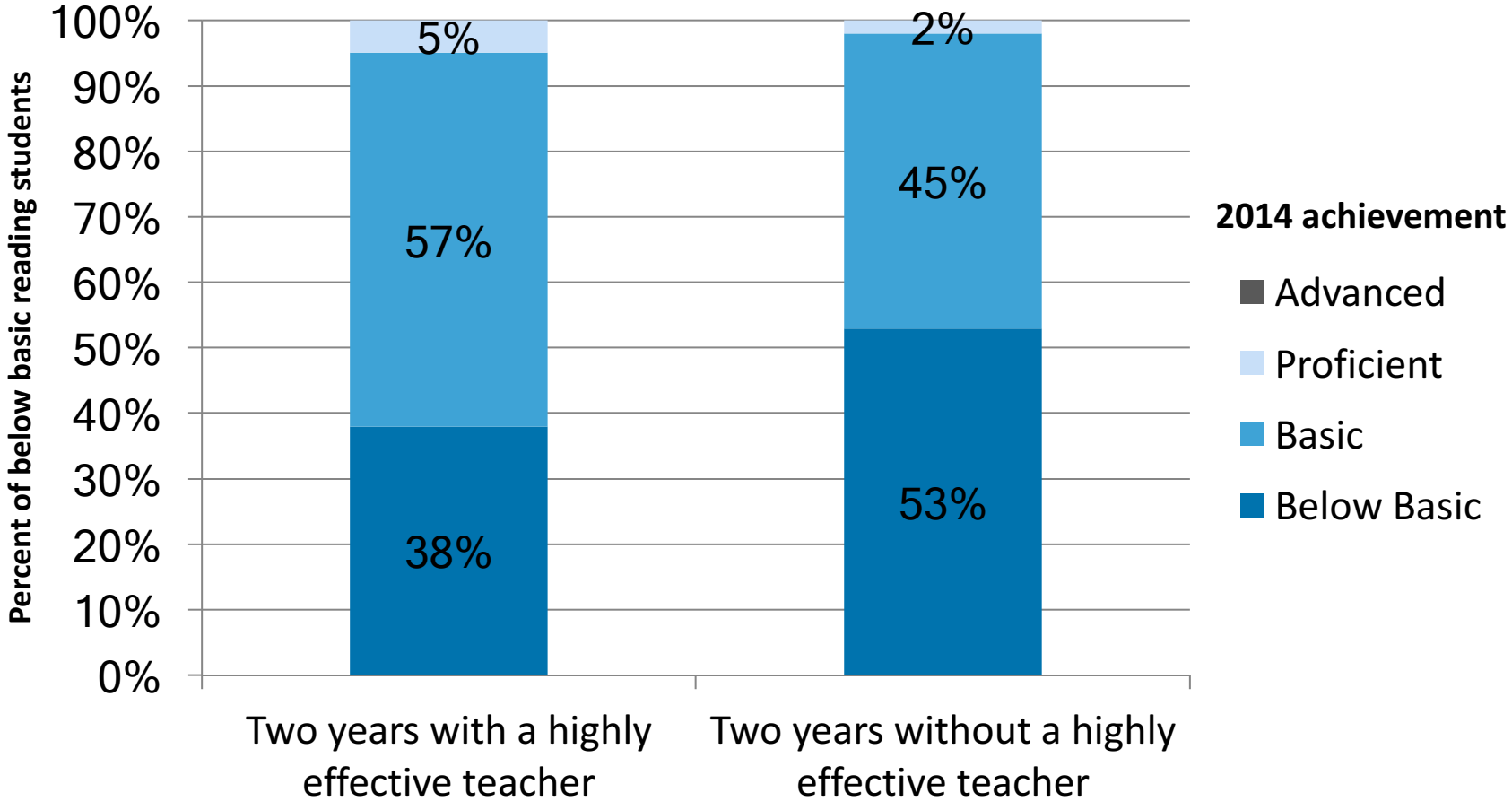
- A highly effective teacher is defined as a teacher who received a value-added score indicating that his or her students tended to show more growth than expected in the year prior to assignment (TVAAS level 4 or 5).

- We define "effective teaching gap" as the difference in the percent of students in one subgroup who receive highly effective teachers compared to the percent of students in a comparison group who receive highly effective teachers.

- We determine the size of each district's equity gap and the amount of the gap that is explained by within- and between-school differences.

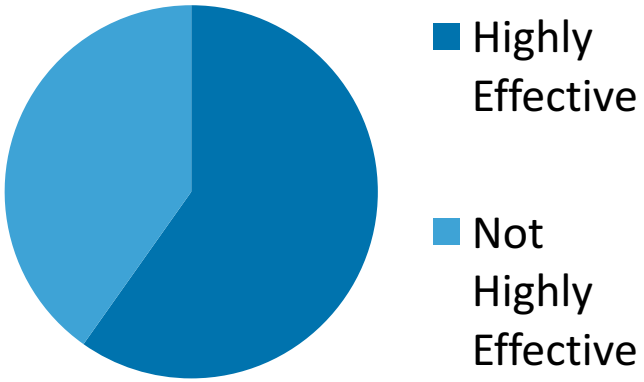
- Differences we examine include:
  - Prior achievement (**advanced vs. below basic**, proficient vs. non proficient, top vs. bottom quartile students)
  - Minority vs. non-minority students
  - Economically disadvantaged vs. non-economically disadvantaged students
  - Economically disadvantaged vs. non-economically disadvantaged students, controlling for achievement

Students scoring below basic on reading achievement in 2012 were more likely to score at a higher achievement level in 2014, if they were placed with a highly effective reading teacher in 2013 and 2014.

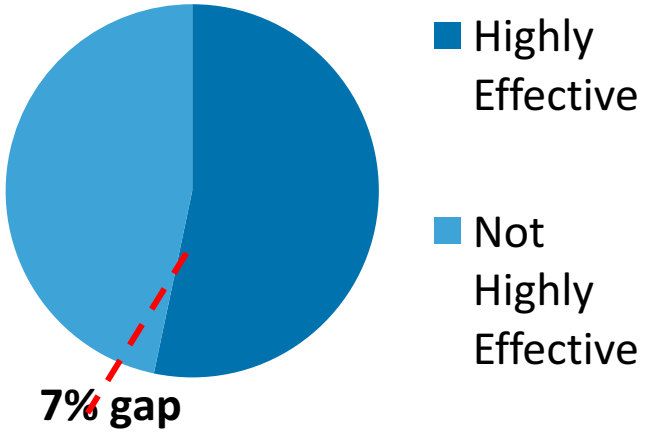


Across the state in 2014, 60% of advanced math students in grades 4-8 received a highly effective math teacher. 53% of below basic students had a highly effective math teacher.

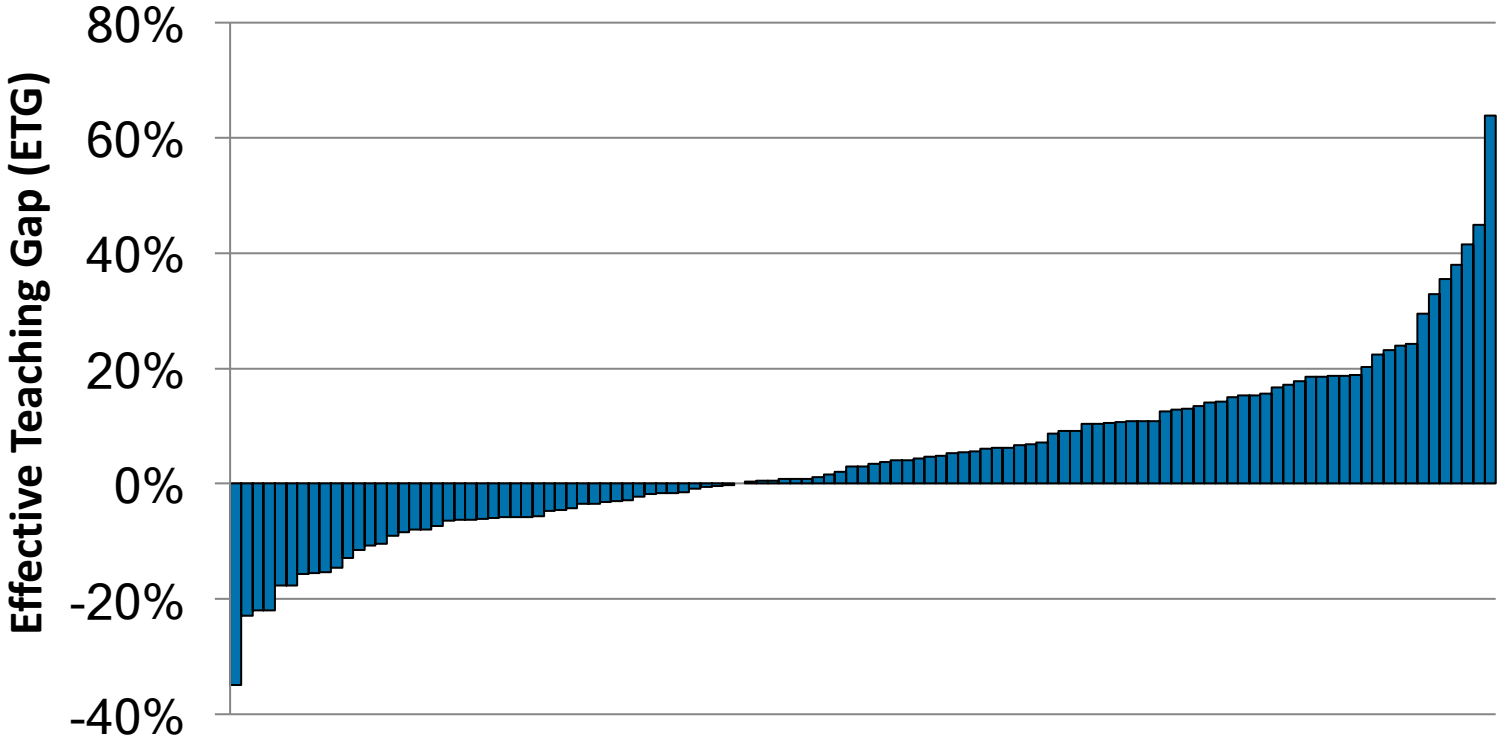
Advanced students



Below Basic students



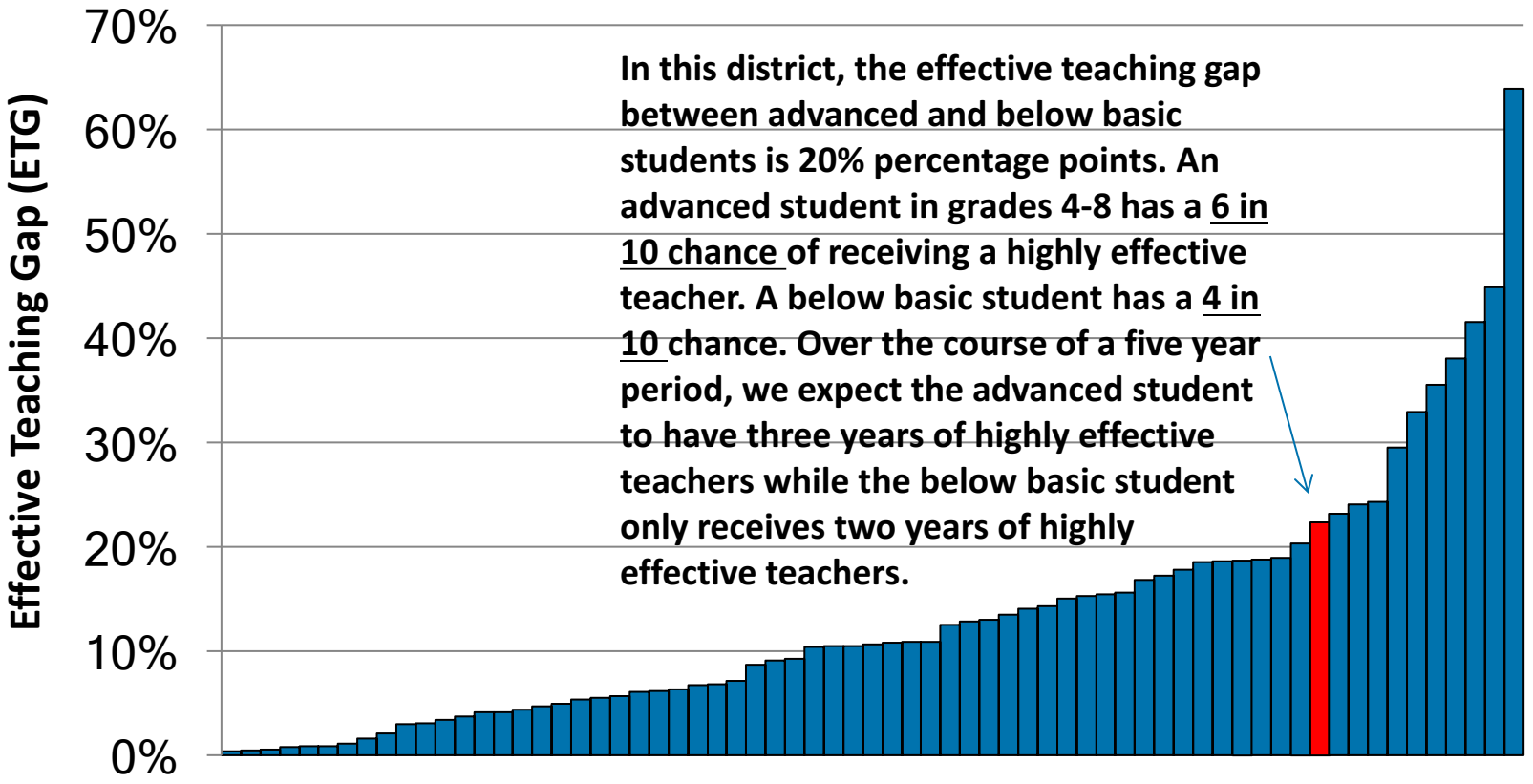
The size of the gap between the percent of advanced students receiving highly effective teachers and the percent of their below basic peers receiving highly effective teachers varies by district.



Each bar represents the effective teaching gap (ETG) in a district.

ETG = percentage of advanced students in highly effective teacher classrooms – percentage of below basic students in highly effective teacher classrooms

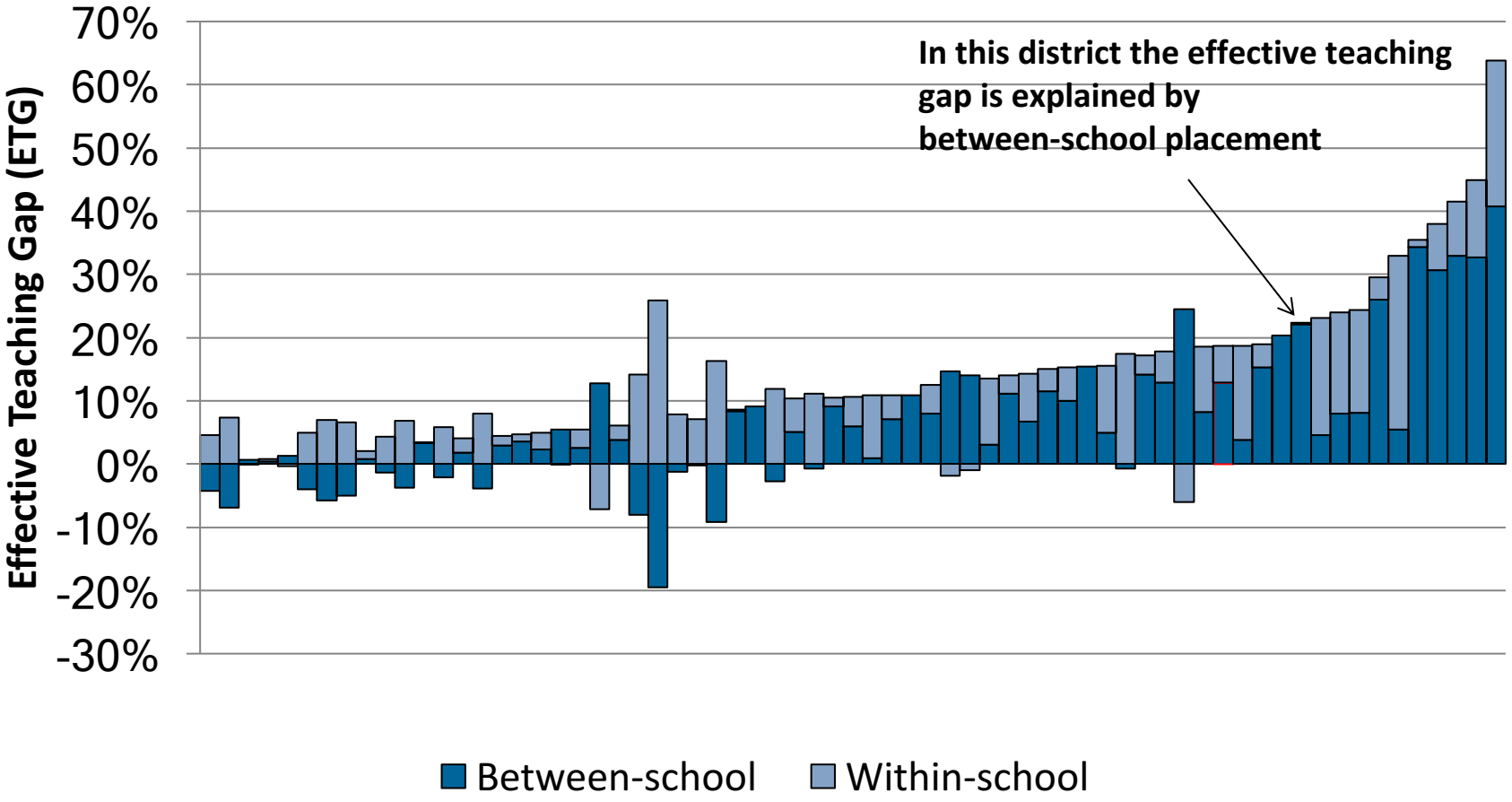
In 2014, 67 districts had an effective teaching gap larger than zero.



Each bar represents the effective teaching gap in a district that has an effective teaching gap greater than zero.

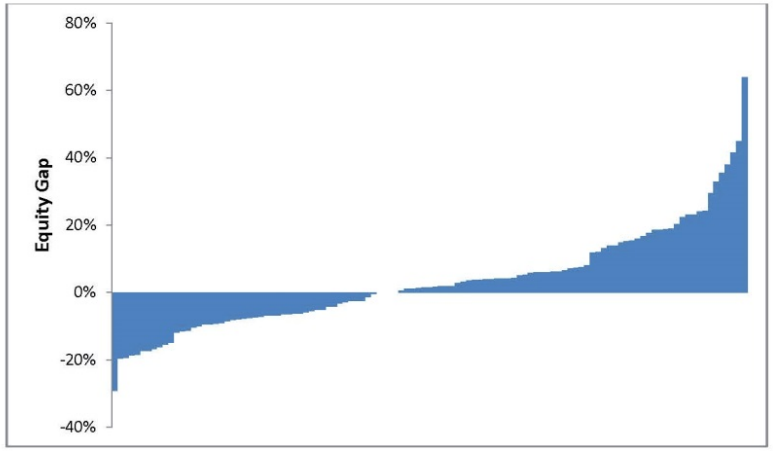
Effective teaching gaps are a result of within- and between-school gaps.

In districts where below basic students are assigned to less effective math teachers than advanced students, the gap is explained by both within- and between-school gaps.

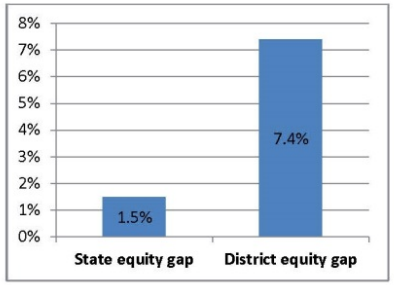


Sample District Data Reports

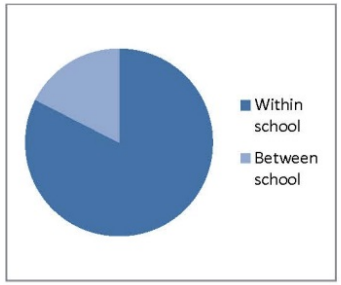
Subject: Reading/Language Arts
Grades: 4-8



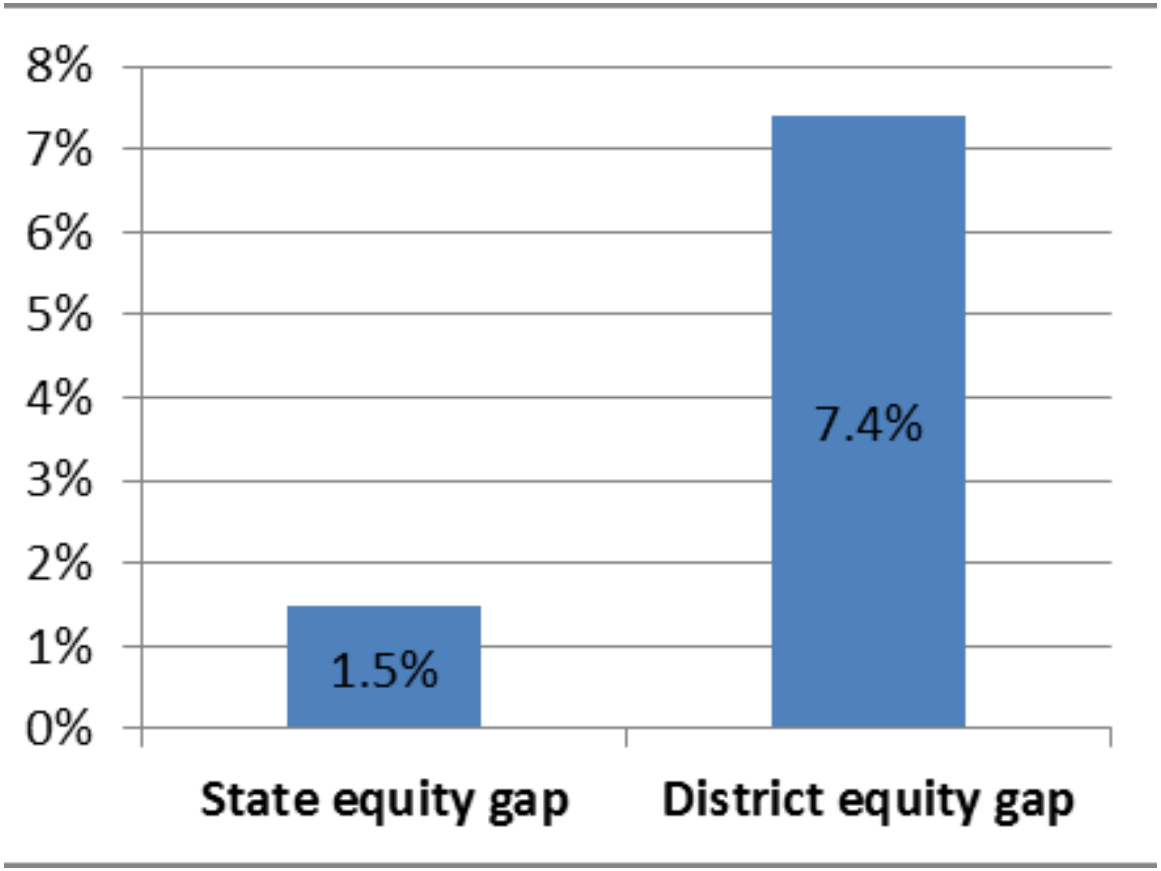
Each bar in the above graph represents a district in the state. The height of the bar represents the size of the district's RLA equity gap. The district's equity is calculated by subtracting the percent of students who scored advanced on the prior year's RLA TCAP and receive a highly effective RLA teacher from the percent of students who scored below basic on the prior year's RLA TCAP and receive a highly effective RLA teacher.



The above graph displays the size of the state RLA equity gap, as well as your district's RLA equity gap. Your district has a *positive RLA equity gap*. This means a *smaller* percentage of below basic students in your district receive a highly effective RLA teacher compared to advanced students.



The above graph displays the portions of your RLA equity gap that are explained by within- and between-school placement. When a *positive equity gap* is mostly explained by *within-school placement* it means that highly effective RLA teachers in the district are located throughout the schools in the district but placement decisions within schools lead to smaller percentages of below basic students receiving highly effective RLA teachers.



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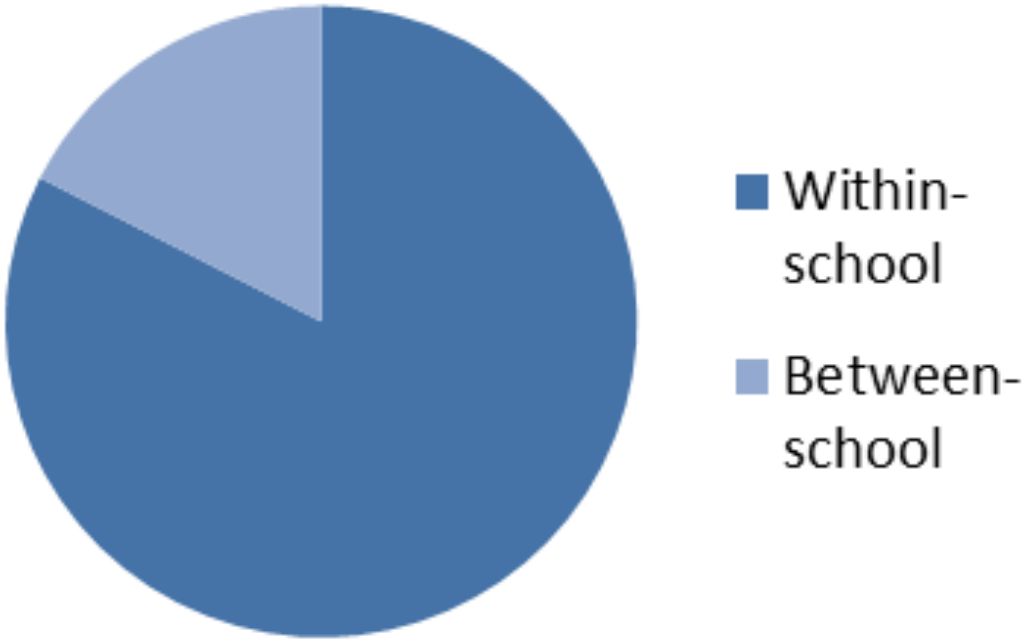

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Q&A

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Wrap Up

Contact the EASN

Please visit the EASN website or email the EASN to join an EASN Community of Practice, find relevant resources, or request targeted support.

https://easn.grads360.org/

easn@aemcorp.com

Thank You!