

Black-White Achievements Gaps in Our States

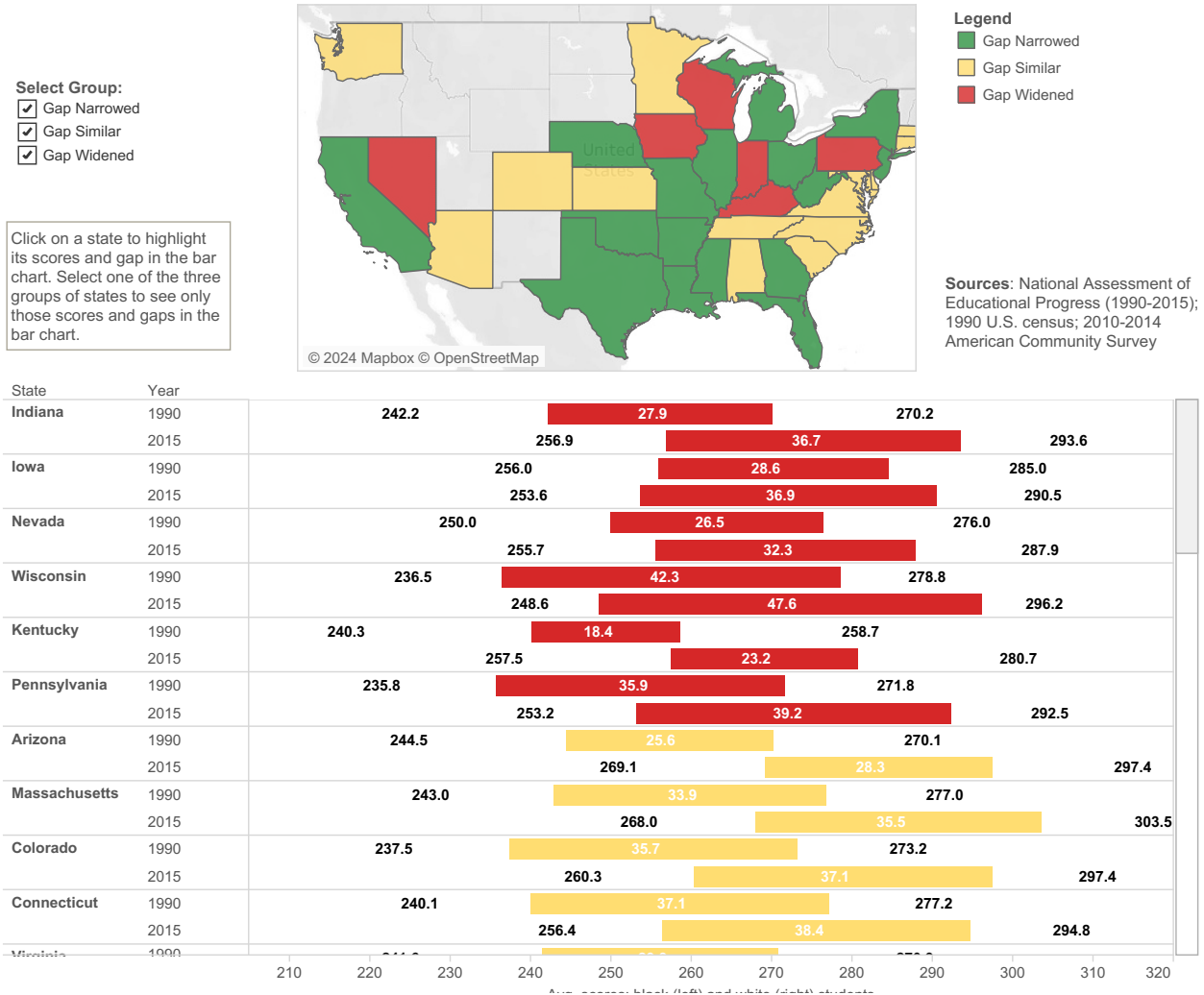
Achievement gaps are based on 8th grade NAEP mathematics scores from 1990 to 2015. 37 states are classified into three groups; the remaining 13 states have small black populations.

The 6 states where the gap has widened (IN, IA, KY, NV, PA, WI) can be compared to 3 demographically similar states where the gap has narrowed and is below the national average (OK, RI, WV).

WV has received higher ratings than KY for early childhood education. OK has been noted as one of the first states with universal preschool for 4-year-olds and high attendance rates.

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Figure 1: Change in Black-White Achievement Gaps (1990 to 2015)



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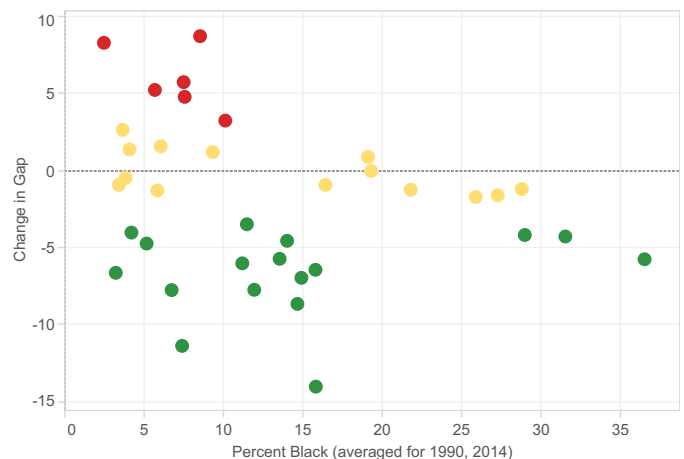
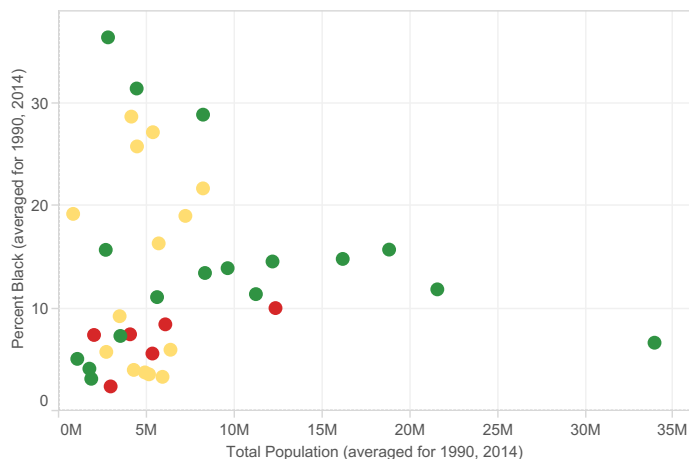
Figure 2: Demographics by Change in Gap

The black population in the six "gap widened" states (red) makes up ~10% or less of the total; all but Pennsylvania have a total population size of ~6 million or less. Thus, a comparison of these six states (IN, IA, WI, KY, NV, PA) with four of the green "gap narrowed" states that are demographically similar is of particular interest. These four states are NE, OK, RI and WV; however, Nebraska's gap is almost 10 points above the national average.

Selecting "Yes" in the "Show State Comparison" menu shows data for these 10 states only; hovering over a dot shows the name of the state and other information.

Select Group:
☒ Gap Narrowed
☒ Gap Similar
☒ Gap Widened

Show State Comparison
☒ No
☒ Yes



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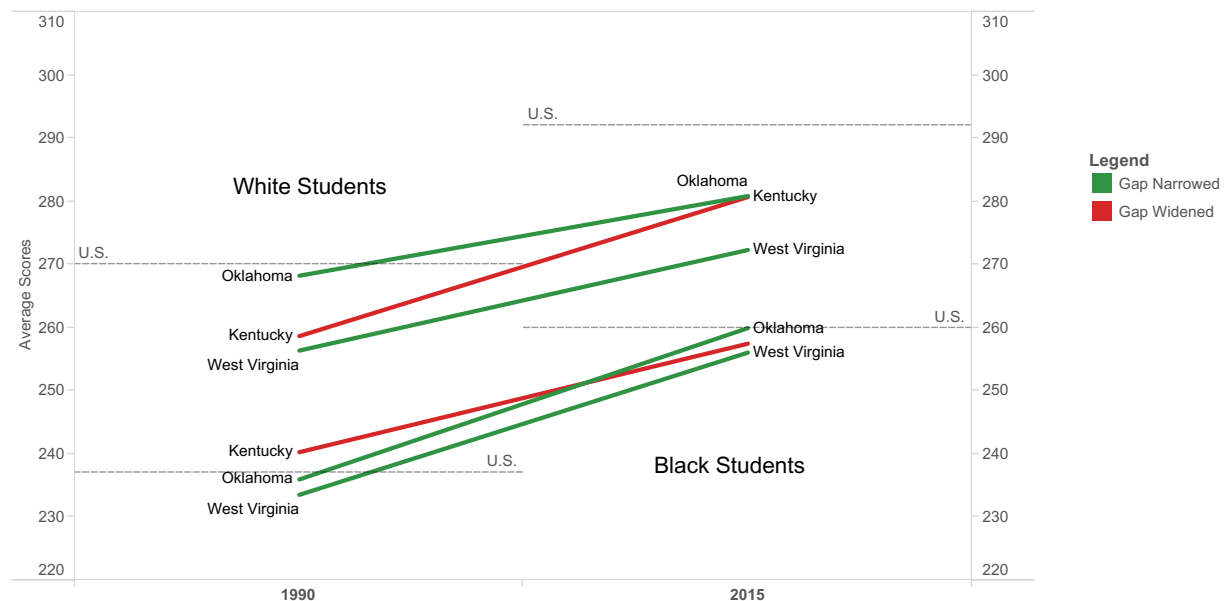
Figure 3: Possible Benefit of Early Childhood Education

WV, KY and OK have similar demographics: black populations below 10% and poverty rates in black **and** white families above the national average.

The preschool poverty gap, defined as the difference in preschool attendance rates of children who do or do not live in poverty, was substantially lower in WV (4.6 percentage points) than Kentucky (15.6) in 2014. This may partially explain why Kentucky's black students showed less improvement over time than West Virginia's.

However, Kentucky's achievement gap has also widened because its white students showed greater improvement than West Virginia's during the past 25 years.

OK has been noted by President Obama for its universal state-funded preschool program with consistently high attendance rates: http://www.nytimes.com/interactive/2013/02/13/education/State-Financed-Preschool-Access-In-the-US.html?_r=0



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Disparities in poverty rates are correlated with achievement gaps, but don't explain them entirely. A measure of spatial segregation shows weaker association, esp. when western states are included.

The two extremes of black-white achievement gaps are found..

Figure 4: Possible Benefit of Policies Reducing Lead Exposure from Old Homes

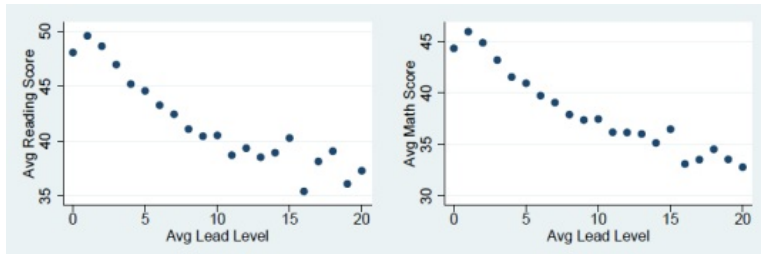
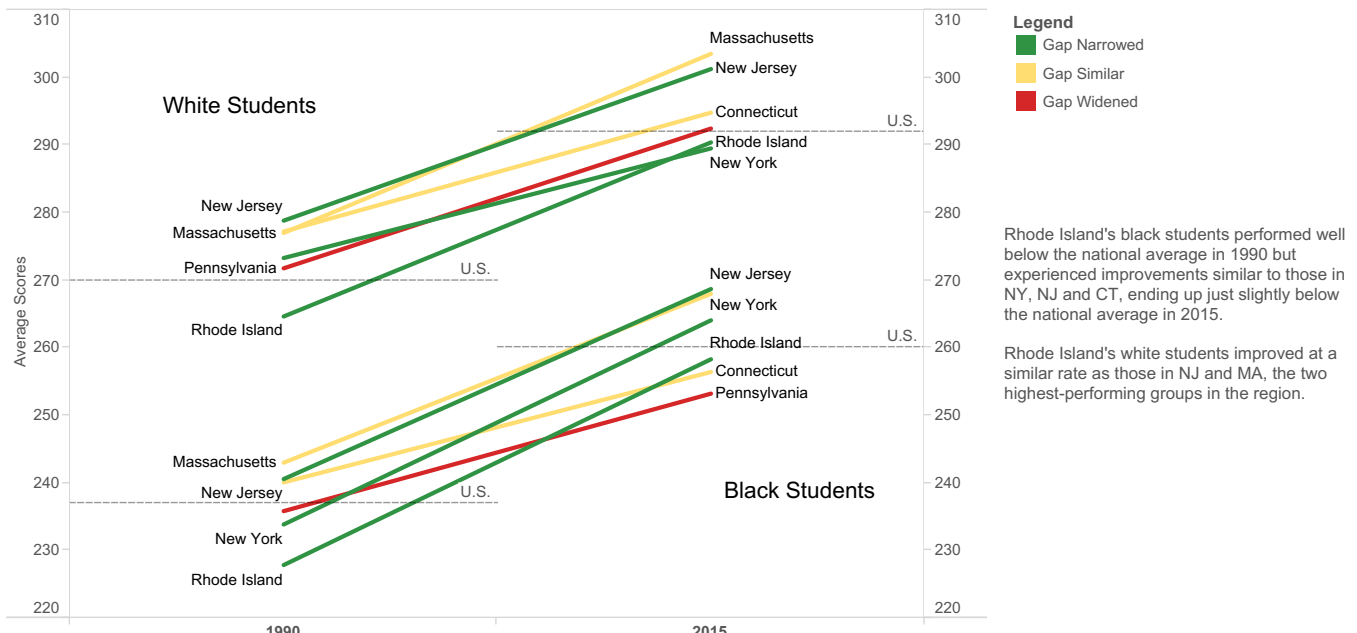


Figure 4 from Aizer et al. (2015), unpublished manuscript; available at http://economics.yale.edu/sites/default/files/aizer_feb_12_2015.pdf

Black families living in poverty are much more likely than wealthy white families to live in old homes with deteriorating lead paint and/or lead pipes that deliver drinking water. Lead is a powerful neurotoxin for the developing brains of children under 6 years of age. RI implemented state policies aimed at reducing lead exposure in old homes.

In 2015, a study of ~57,000 children in Rhode Island analyzed the relationship between blood lead levels in preschool and standardized test scores later in life. The authors estimated that **"the decline in racial disparities in lead explains between 37 and 76% of the decline in racial disparities in test scores witnessed over the past decade in Rhode Island."**



Rhode Island's black students performed well below the national average in 1990 but experienced improvements similar to those in NY, NJ and CT, ending up just slightly below the national average in 2015.

Rhode Island's white students improved at a similar rate as those in NJ and MA, the two highest-performing groups in the region.

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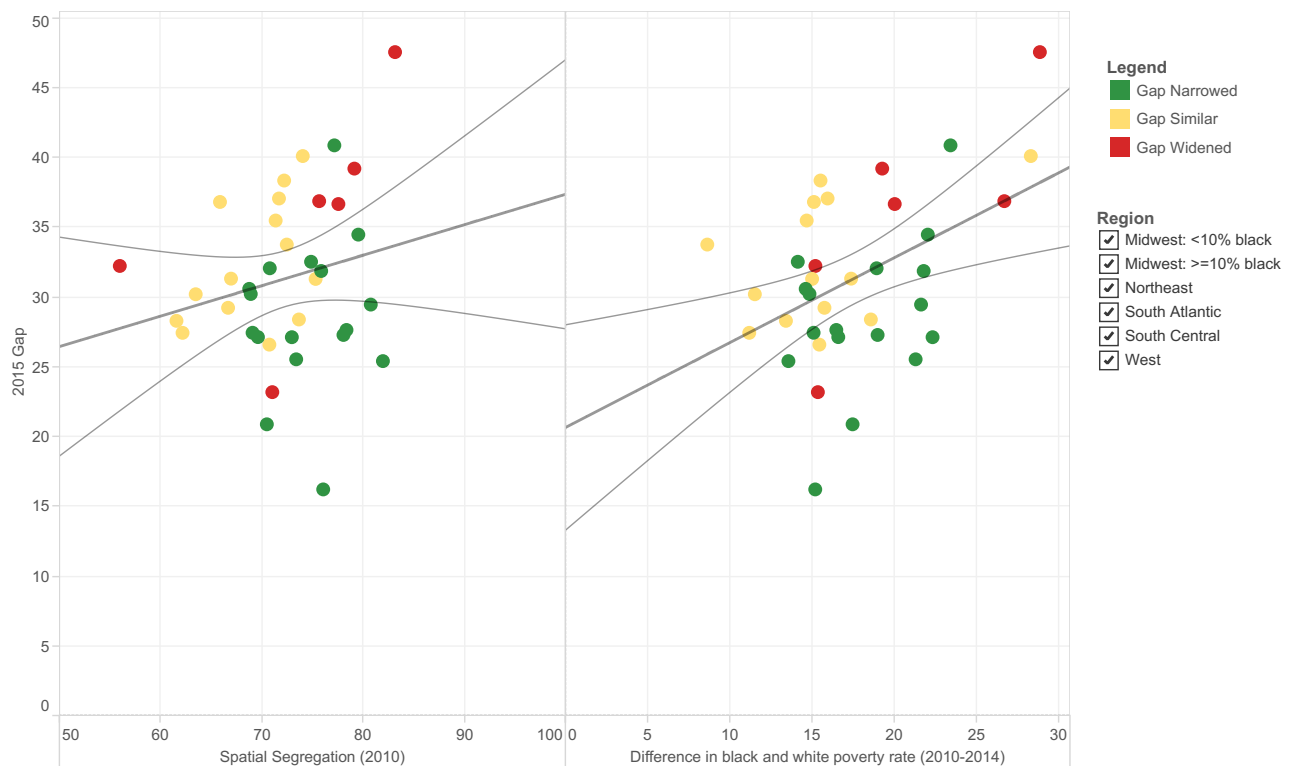
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Figure 5: 2015 Achievement Gap vs. Racial Segregation and Difference in Poverty Rates

The spatial segregation index (left panel) uses census tracts to estimate the percentage of blacks that would have to move to other neighborhoods within their state to achieve parity distributions of blacks and whites across all neighborhoods. It is less strongly correlated with black-white achievement gaps than the difference in poverty rates in black and white families (right panel).

Statewide differences in poverty and spatial segregation do not explain the observed differences in achievement gaps.



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Figure 6: Scores and Gaps by Year and Region

Dashed lines: U.S. Average



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Figure 7: Change in Scores by Region and State

Midwest with <10% blacks: Black and white students performed at or above the national average in 1990 (except for blacks in NE). In 2015, however, white students performed closer to the national average and black students in 4 of 6 states scored well below the national average, especially in WI. Even though black students in MN improved the most, the gap for this region remains well above the national average (Fig. 6).

South Central: The gap is low because white students performed below the national average in 1990 and 2015 in all states but Texas. The gap widened in Kentucky because its black students improved at a slower rate than those in the rest of the region.

South Atlantic: These states narrowed their gaps because black students improved while white students remained close to the national average.

