



Case Study: Class Size and Student Outcomes in Three Colorado Schools

May 2021

Executive Summary

The need to improve public education is a goal shared by most Coloradans. But the best method to improve student outcomes is subject to great debate. A common strategy to improve schools is to reduce class sizes. With many states implementing smaller class sizes via legislative action and ballot initiatives, advocates and opponents of these policies have sparked a broader debate about whether smaller class sizes necessarily result in better outcomes for kids. This paper provides an illustrative case study that casts doubt on class size reductions as a silver bullet for educational improvement.

National Research

Small class sizes are popular with parents and students – and it’s easy to see why. The assumption that smaller classes result in more face time with the teacher and better outcomes seems like a common sense. But reviews of classroom studies question this assumed causal link. While many researchers typically agree that significant differences in class size can matter, research evidence doesn’t consistently support the notion that smaller classes increase how much students learn. An October 2018 review of research published in U.S. News & World Report found that reading-based small classes experienced, at most, small benefits.¹ No benefits were found with math-based classes. The national conversation around this research continues and seems unlikely to be settled in the immediate future.

Case Study: Three Schools in Denver County 1 & Adams 12 Five Star Schools

Comparing three schools within the Denver metro will help us evaluate the impact that class size has on school district performance. The schools are John F Kennedy High School in Denver County 1, and Thornton and Northglenn High Schools in Adams County 12 Five Star Schools.

These schools were selected for several reasons. First, all are high schools, which means we are focusing on the same age range of students. Second, they all have similar utilization rates of the Free and Reduced Lunch (FRL) program. While many factors can play into school outcomes, FRL rates are the most uniformly measurable statistic to ensure a reasonable comparison.

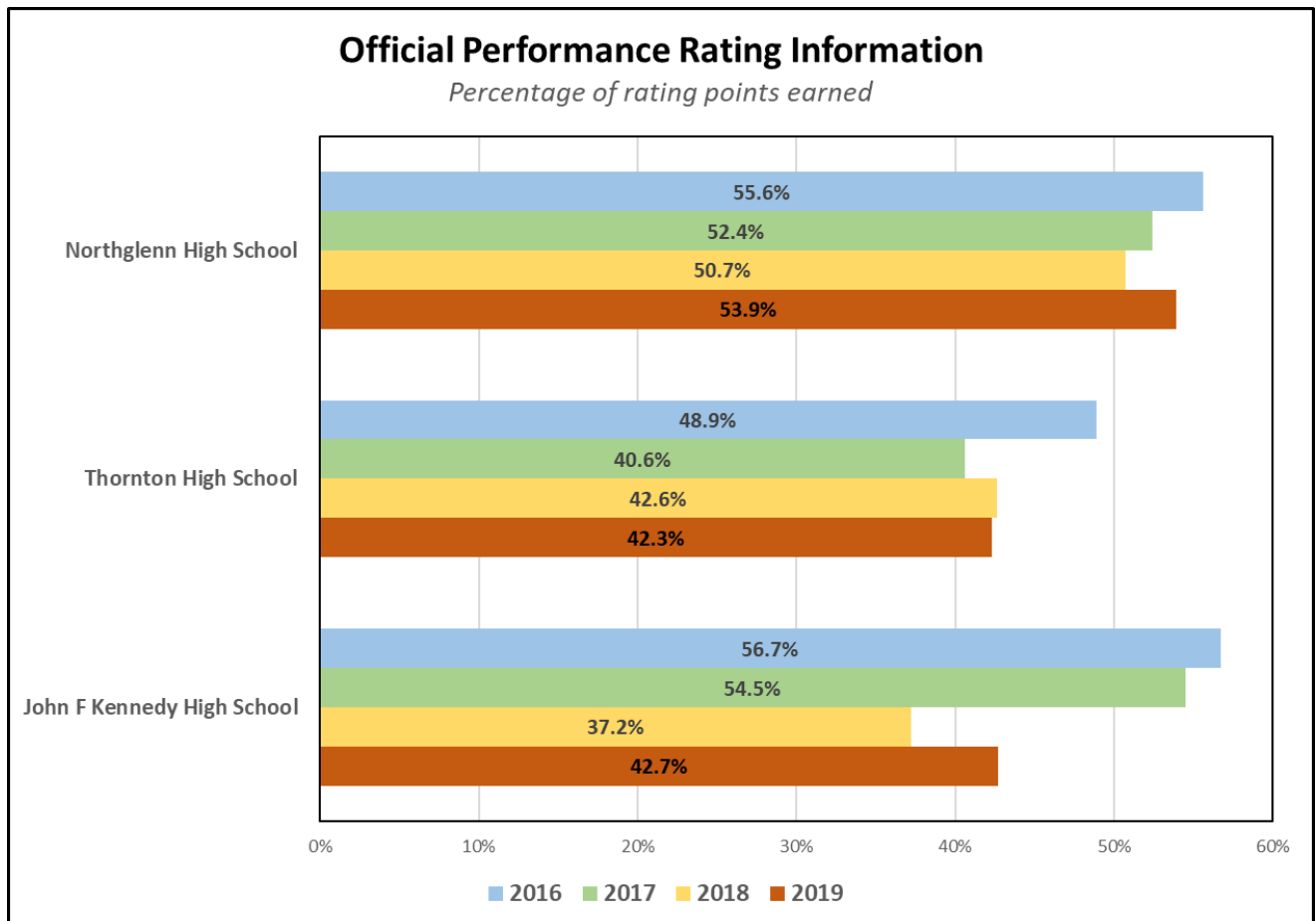
School	FRL %
John F Kennedy High School	73.2%
Thornton High School	68.5%
Northglenn High School	64.5%

Lastly, these three schools have a wide range in their student-to-teacher ratios. John F Kennedy has a student-teacher ratio of 14.4 (lower than the Denver average district total of 14.9), Thornton High School has a ratio of 17.8, and Northglenn High School has a ratio of 20.1 (Adams 12 as a whole has an average ratio of 18.6). With this substantial difference in class sizes, a comparison of outcomes can help us evaluate the extent to which class size is determinative of success in these schools.¹

¹ https://edx.cde.state.co.us/SchoolView/DataCenter/reports.aspx?_adf_ctrl-state=pac20phbp_4&_afLoop=3669724059058965&_afWindowMode=0&_adf.ctrl-state=16xx36bqnz_4

Comparative Performance

A comparison of the three schools' performance (as measured by the Colorado Department of Education) seems to suggest that the lower student-to-teacher ratio enjoyed by Denver's John F Kennedy High School does not necessarily manifest as higher-performance. Colorado uses multiple metrics to compare schools to one another, including four we will cover here: overall performance rating, Postsecondary and Workforce Readiness, Academic Achievement, and Academic Growth.²³ In the four most recent years for which data is available (2016-19), the two Adams 12 schools typically equaled or outperformed John F Kennedy, despite the latter's substantially smaller classes.

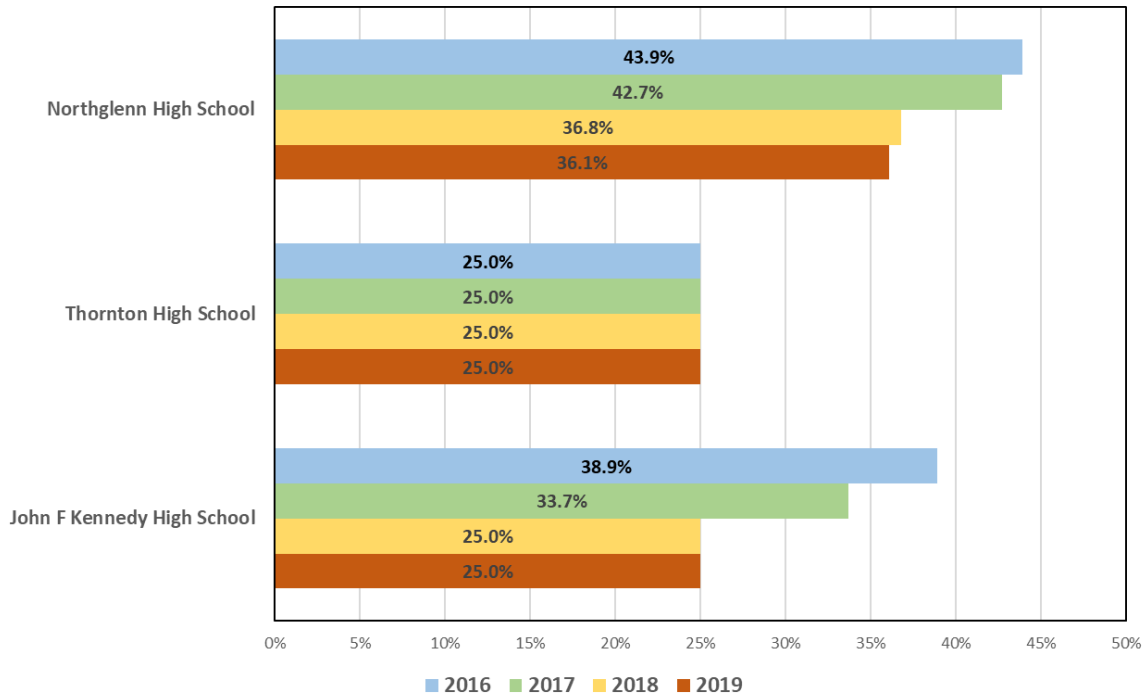


² <https://www.cde.state.co.us/schoolview/performance>

³ <https://www.cde.state.co.us/code/accountability-performancesnapshot>

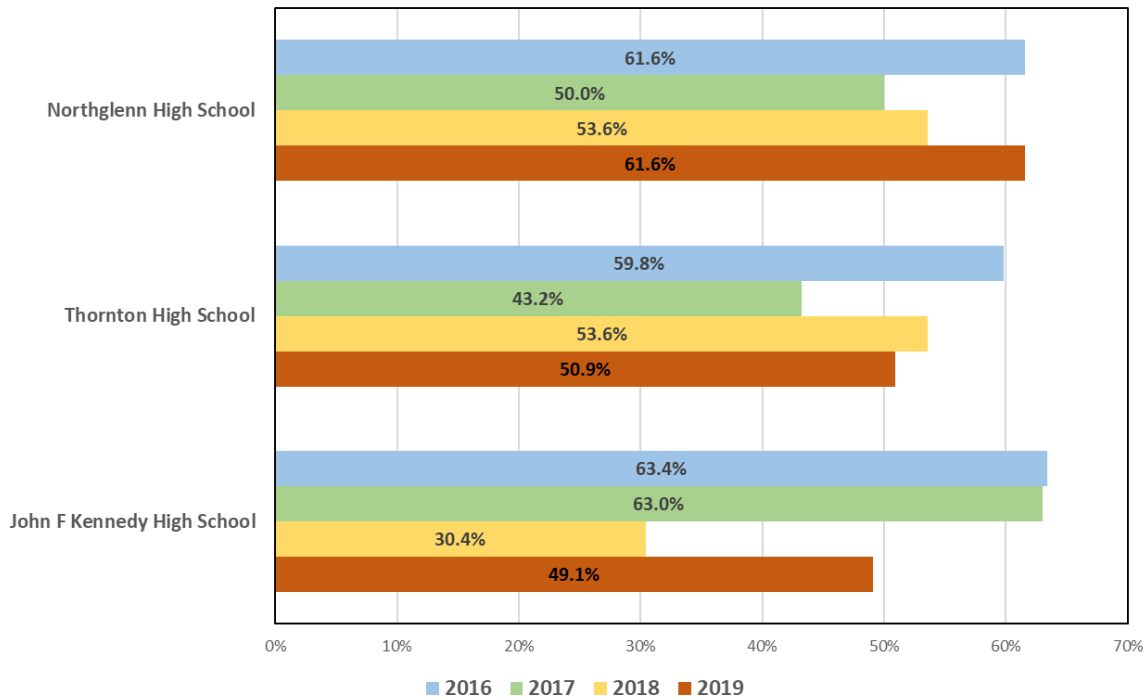
Official Performance Indicator Ratings - Academic Achievement

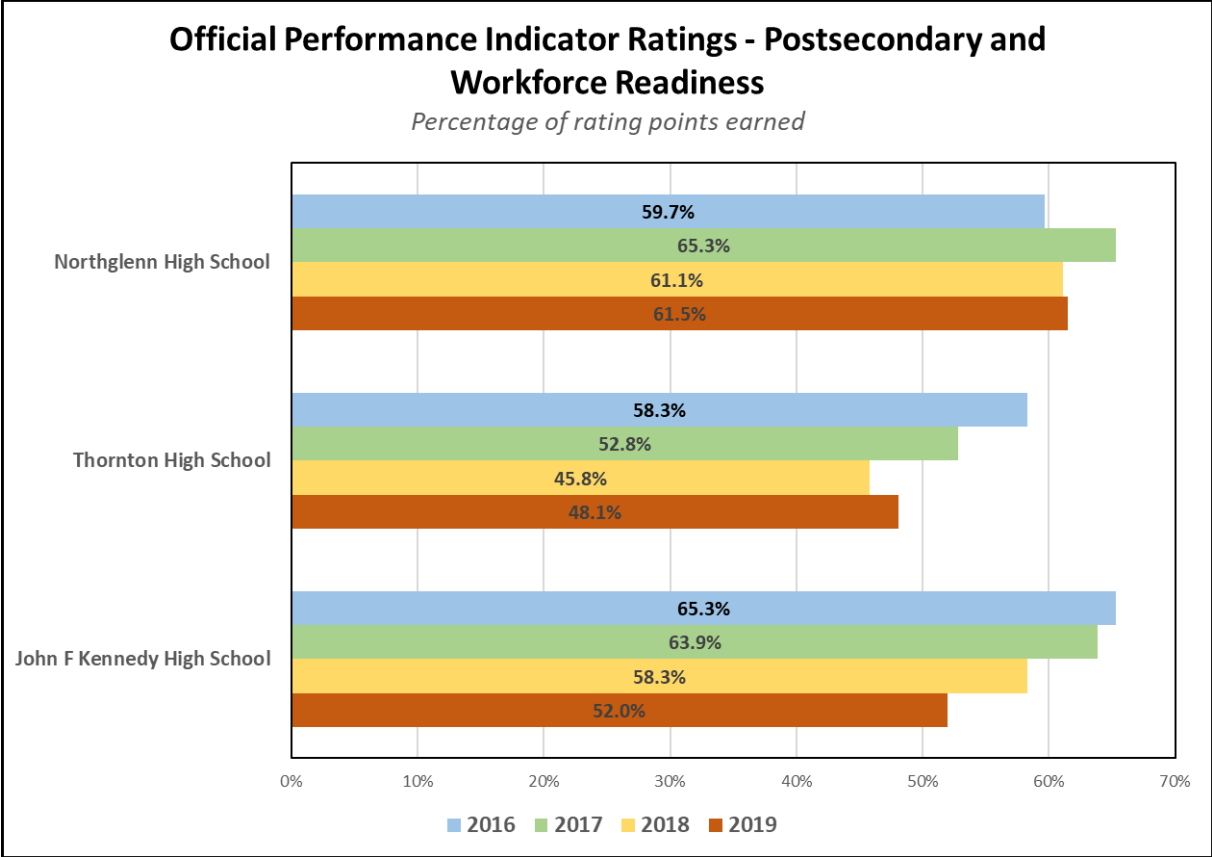
Percentage of rating points earned



Official Performance Indicator Ratings - Academic Growth

Percentage of rating points earned





These charts illustrate the significant variety between years and schools, but ultimately illustrate the failure of the hypothesis that class sizes are determinative of school success and performance.

Summary

This review calls into question the lofty claims made by advocates seeking to raise taxes to decrease class sizes. While John F Kennedy outperforms Thornton High School periodically (particularly around 2016), Northglenn High School (which has the highest student-teacher ratio at 20.1) outperforms them both on most measures in most years. While this alone does not disprove any connection between class sizes and school performance, it does illustrate the issues with claims of an ironclad correlation or necessary relationship, and fits with the national research showing that potential benefits are far from assured.