



Racial Concentration and School Effectiveness in SFUSD

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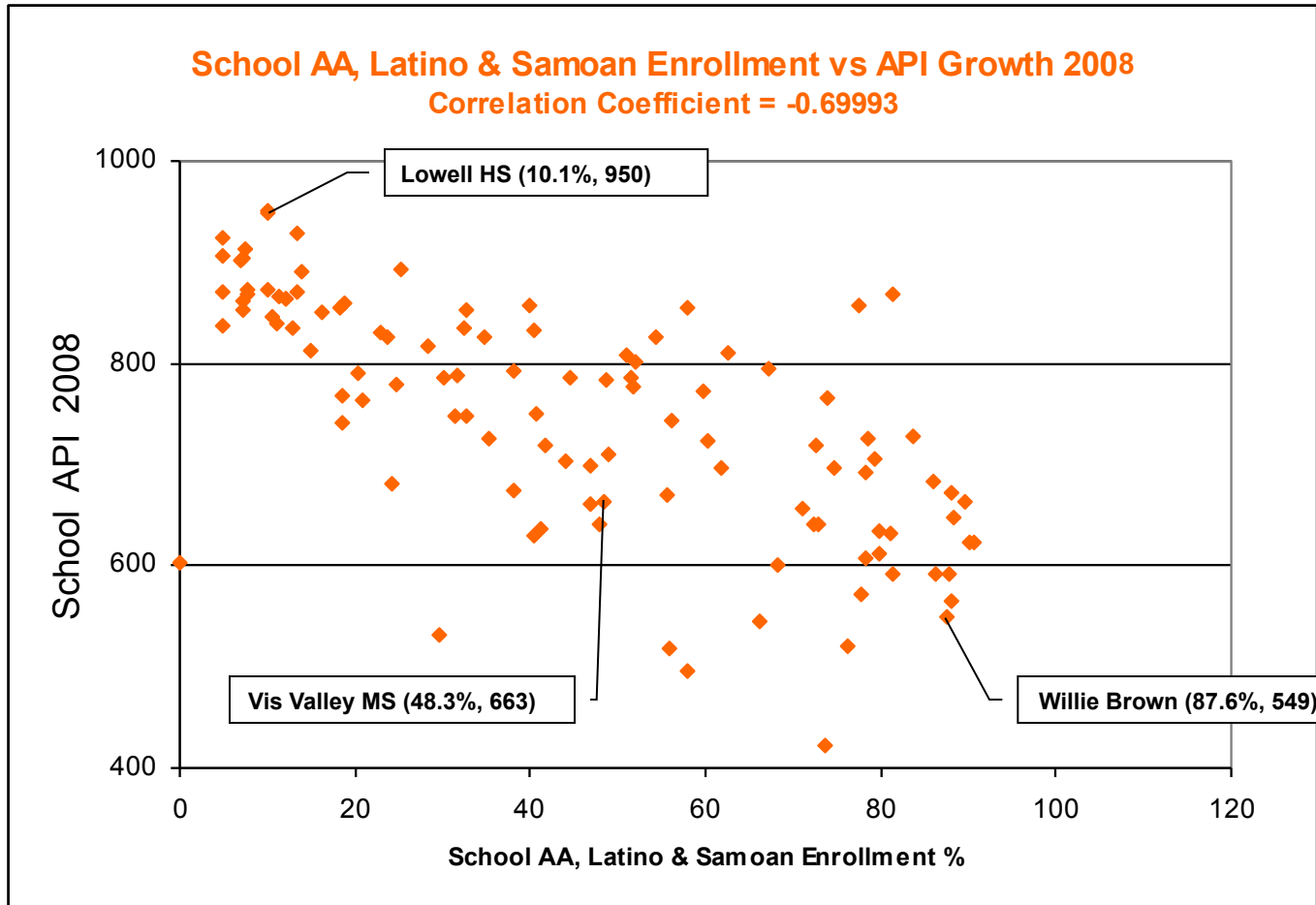
Background

- SFUSD's Strategic Plan sets a goal to “disrupt the predictive power of demographics.” This problem has also been called the “achievement gap” between historically underserved populations of students and others.
- SFUSD schools with high concentrations of African-American, Latino, and Samoan (AA/L/S) students generally have lower achievement levels than other schools.
 - Findings presented to Ad Hoc Committee on 2/28/09.
- Key question: do these lower outcomes reflect a relationship between racial concentration and school effectiveness?

Lens for this study

- These analyses focus on whether school composition plays a role in increasing the achievement gap for historically underserved populations.

On average, schools with greater proportions of AA/L/S students generally have lower API scores, but there were also exceptions to this trend



Source: Ad Hoc Committee Presentation, February 2009:

Concentration of AA/L/S students is strongly correlated with a range of measures related to school quality

Correlations between racial concentration and other school factors

	AA/L/Samoan Enrollment
API Score	-0.74 **
Teacher Average Years of Services	-0.54 **
Teacher Turnover	0.48 **
Attendance (seat time)	-0.43 **
Suspension Rate	0.33 **
Staff Satisfaction	-0.25 *

Source: Ad Hoc Committee Presentation, February 2009:

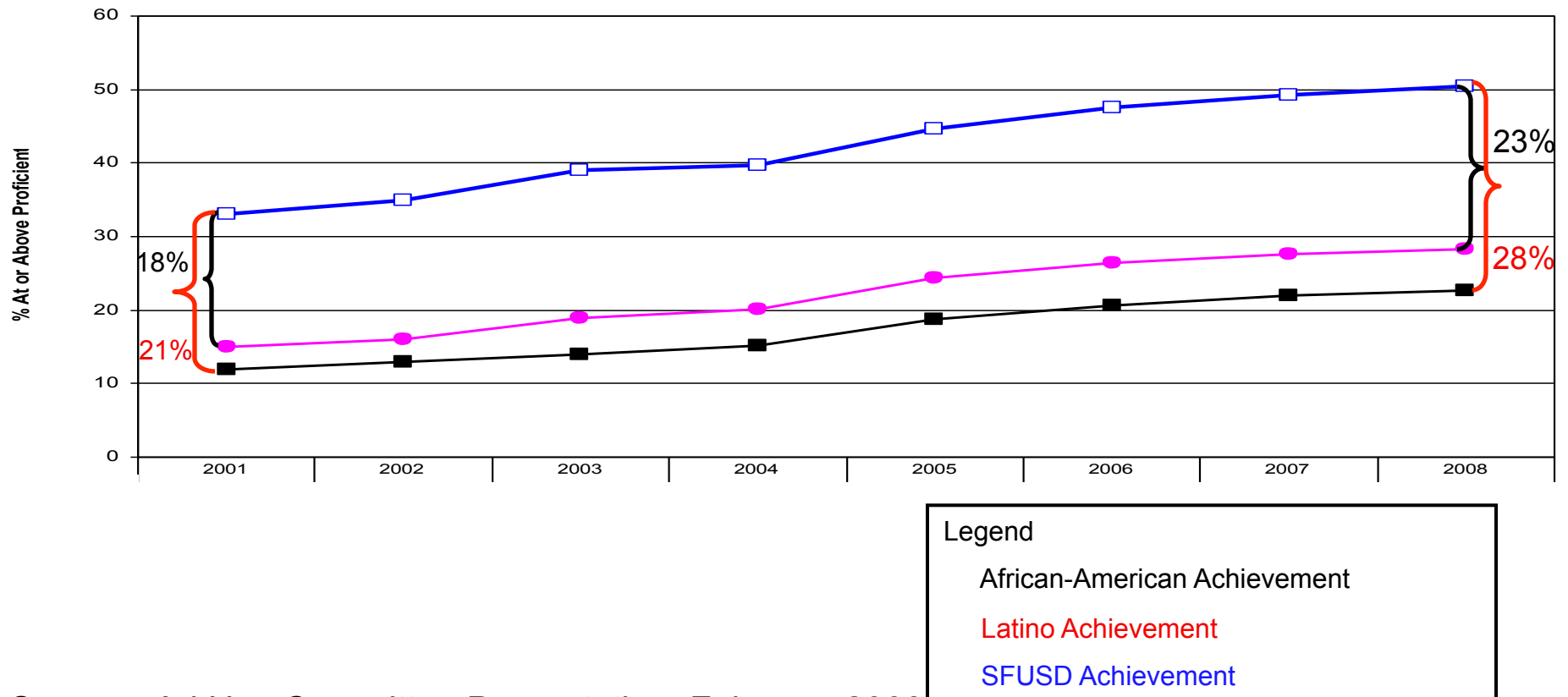
* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

District ELA achievement gap has grown

(Gap in percent proficient has grown by 5% for Latinos and 7% for African-Americans)

CST English Language Arts: 8 Year Trends for Proficient and Above (Grade 2 to 11)

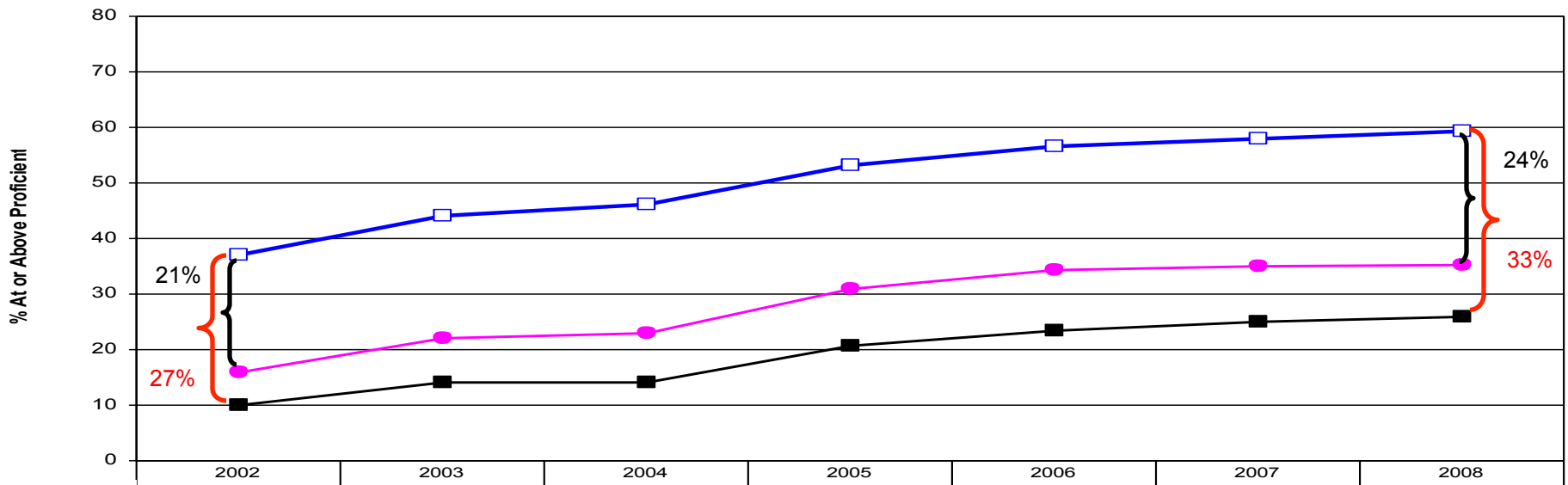


Source: Ad Hoc Committee Presentation, February 2009.

District math achievement gap has also grown

(Gap in percent proficient has grown by 3% for Latinos and 6% for African-Americans)

CST Mathematics: 7 Year Trends for Proficient and Above (Grade 2 to 7)



Legend

African-American Achievement

Latino Achievement

SFUSD Achievement

Source: Ad Hoc Committee Presentation, February 2009:

Review of findings

- Three conclusions from these background slides:
 1. Racial concentration of AA/L/S students is related to lower average school performance.
 2. The achievement gap for historically underserved students is widening.
 3. There are other school quality factors related to racial concentration.
- This analysis delves deeper into the role of racial concentration by using inferential statistics to control for other factors that can influence student outcomes.

Our charge – The impact of school composition on school effectiveness

- Key Question: On average, are schools with concentrations of African-American, Latino, and Samoan (AA/L/S)* students as effective as other schools in SFUSD?
 - Effectiveness/value-added/productivity compares whether, on average, students gain more or less than similar students in other SFUSD schools. In other words, it focuses on fair peer-to-peer comparisons.
 - Positive effectiveness means students gain at a faster rate than average, and negative effectiveness means students gain at a slower than average rate.
 - If you want to know a given school's effectiveness, it is better to look at its matrix gap than to consider its racial concentration.

Analyses conducted to answer the key question

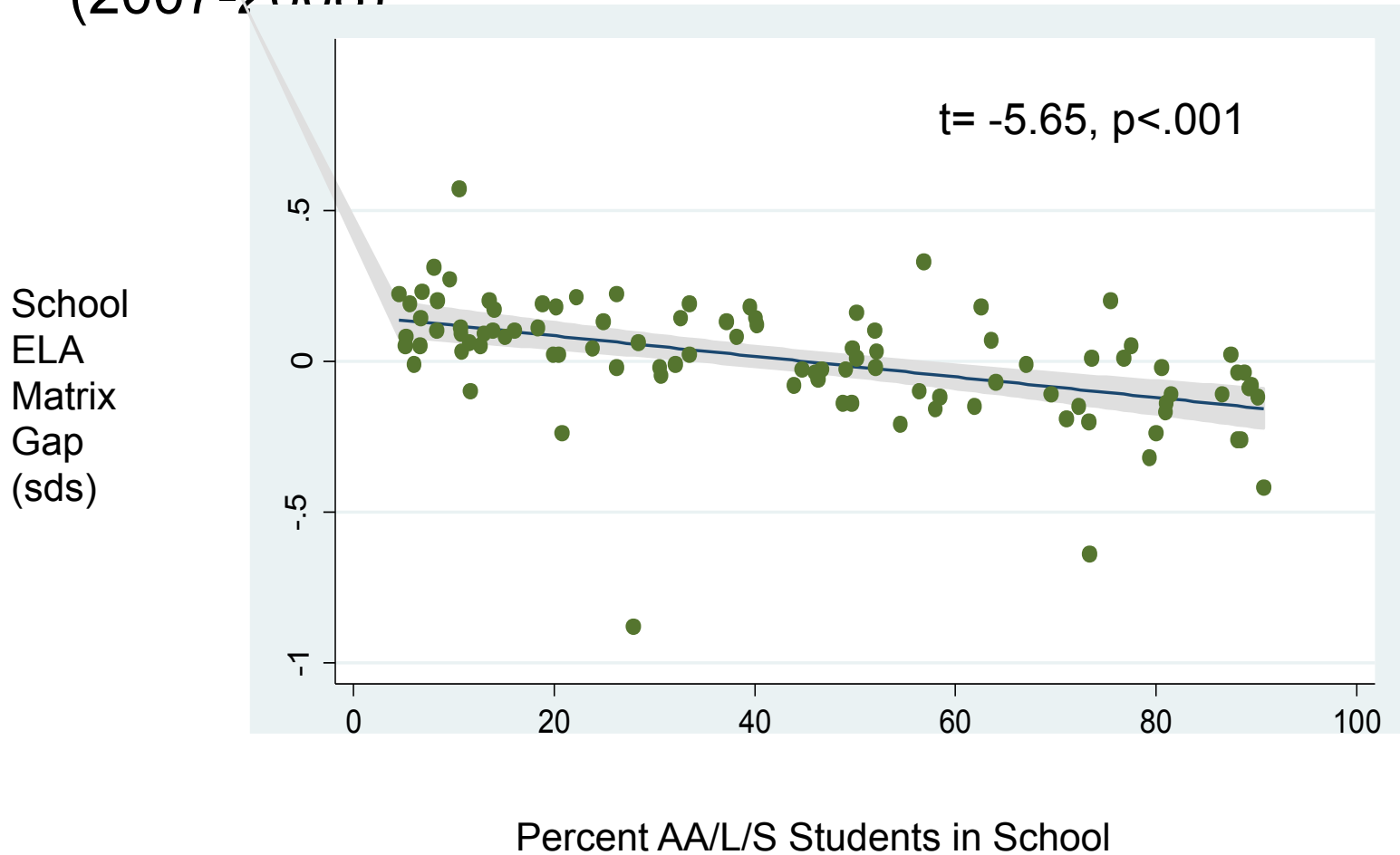
1. Did students in AA/L/S concentrated schools have different academic outcomes compared with similar students in other SFUSD schools?
 - School-level outcomes - Matrix gaps.
 - Student-level outcomes – Productivity, Propensity score matching.
2. When a school's proportion of AA/L/S students changed, did its achievement also change?
3. Was concentration of AA/L/S students related to non-academic outcomes?
 - Graduation rates, Mobility.
4. Was concentration of AA/L/S students related to teacher experience and stability?
 - Years experience.
 - Percent first- and second-year teachers.
 - Teacher retention.

Question 1: Did students in AA/L/S concentrated schools have different academic outcomes compared with similar students in other SFUSD schools?

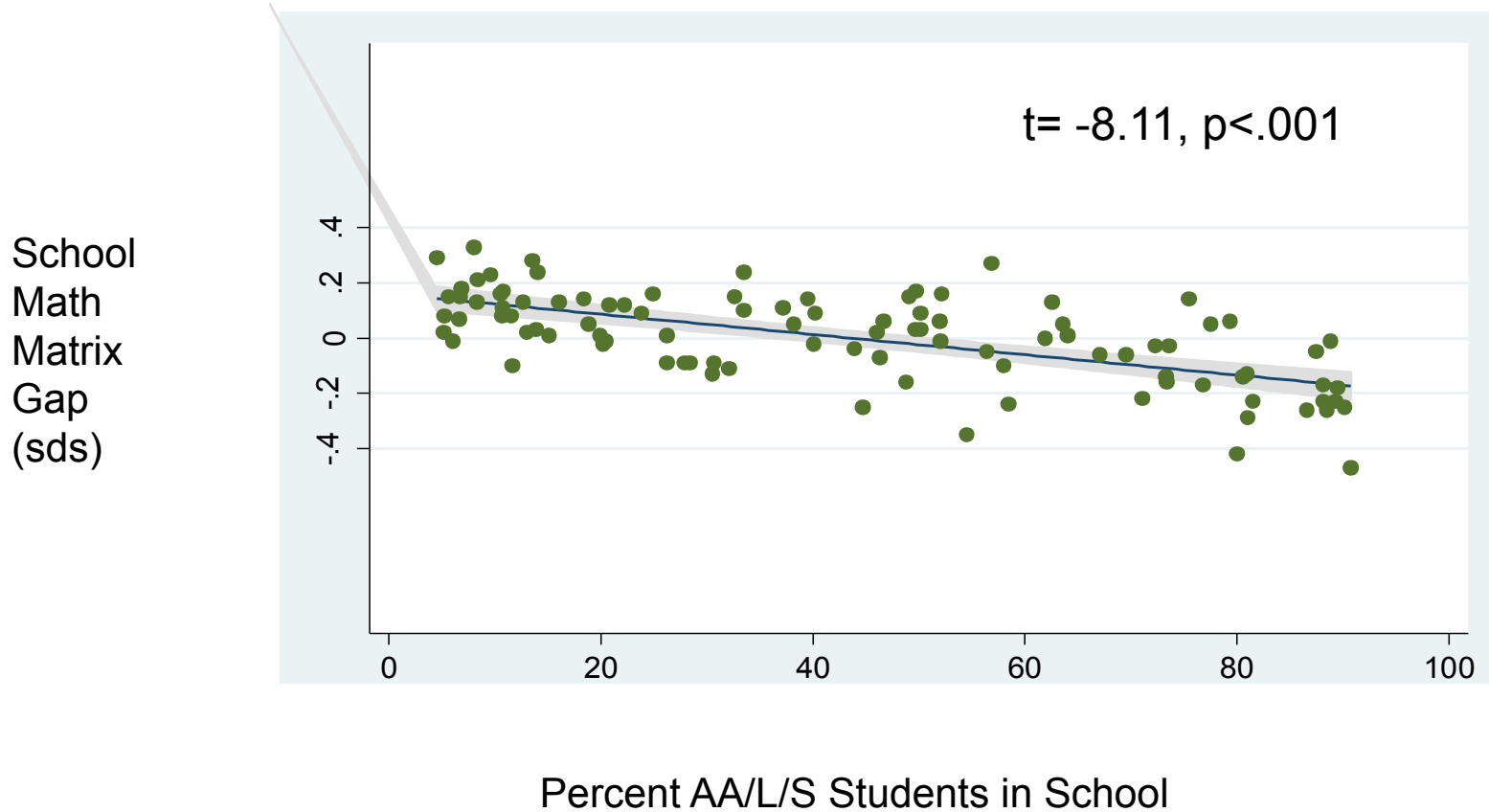
■ Methods

- Compare outcomes while controlling for prior year achievement in ELA and math and student demographic characteristics.
 - Value-Added - Use statistical models to estimate future achievement and then compare actual with estimated achievement (matrix, productivity analysis).
 - Propensity Score Matching - Find similar students and compare outcomes.
- These methods provide an estimate of school effectiveness.

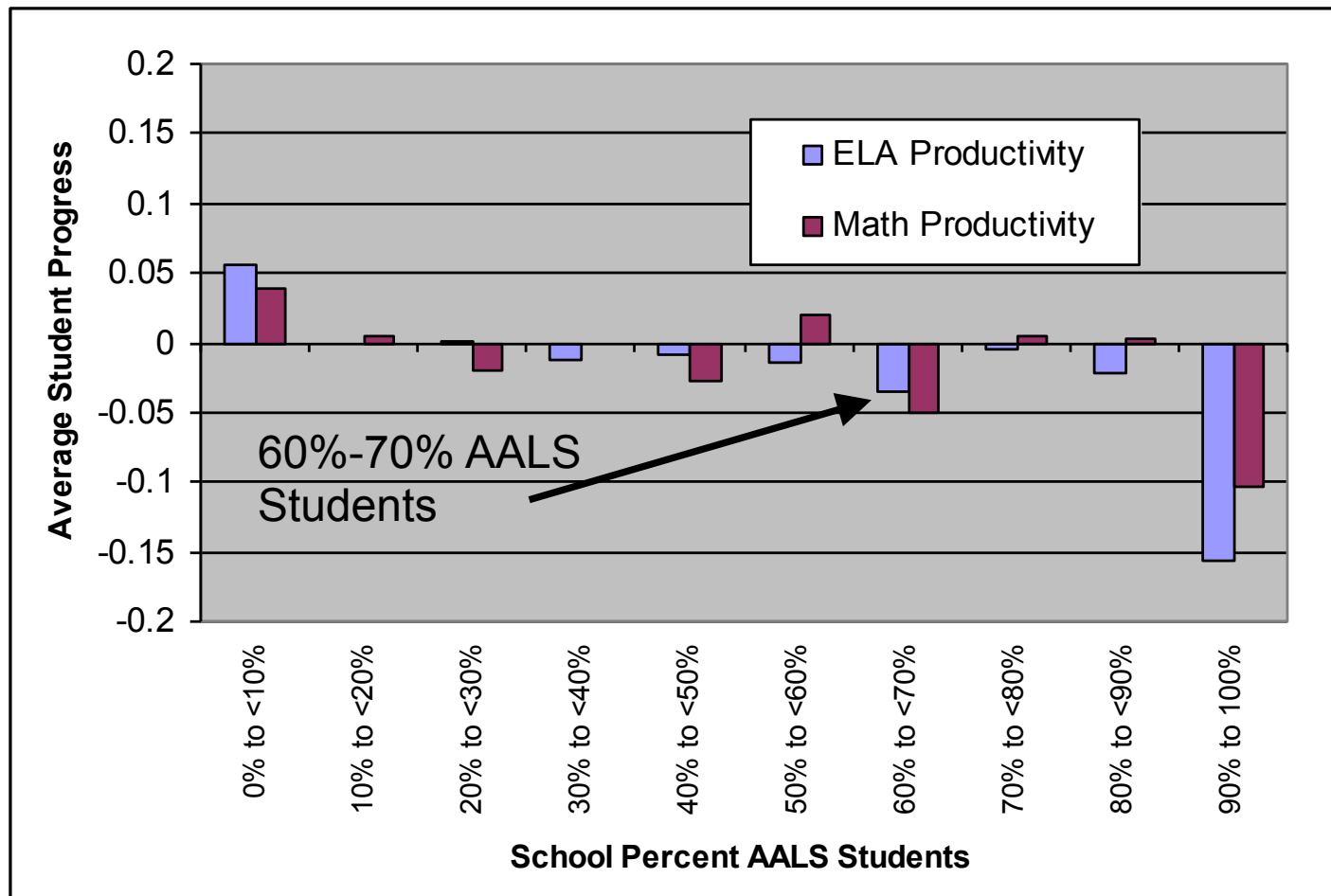
Question 1 (school-level): School value-added in ELA is lower, on average, in concentrated AA/L/S schools (2007-2008)



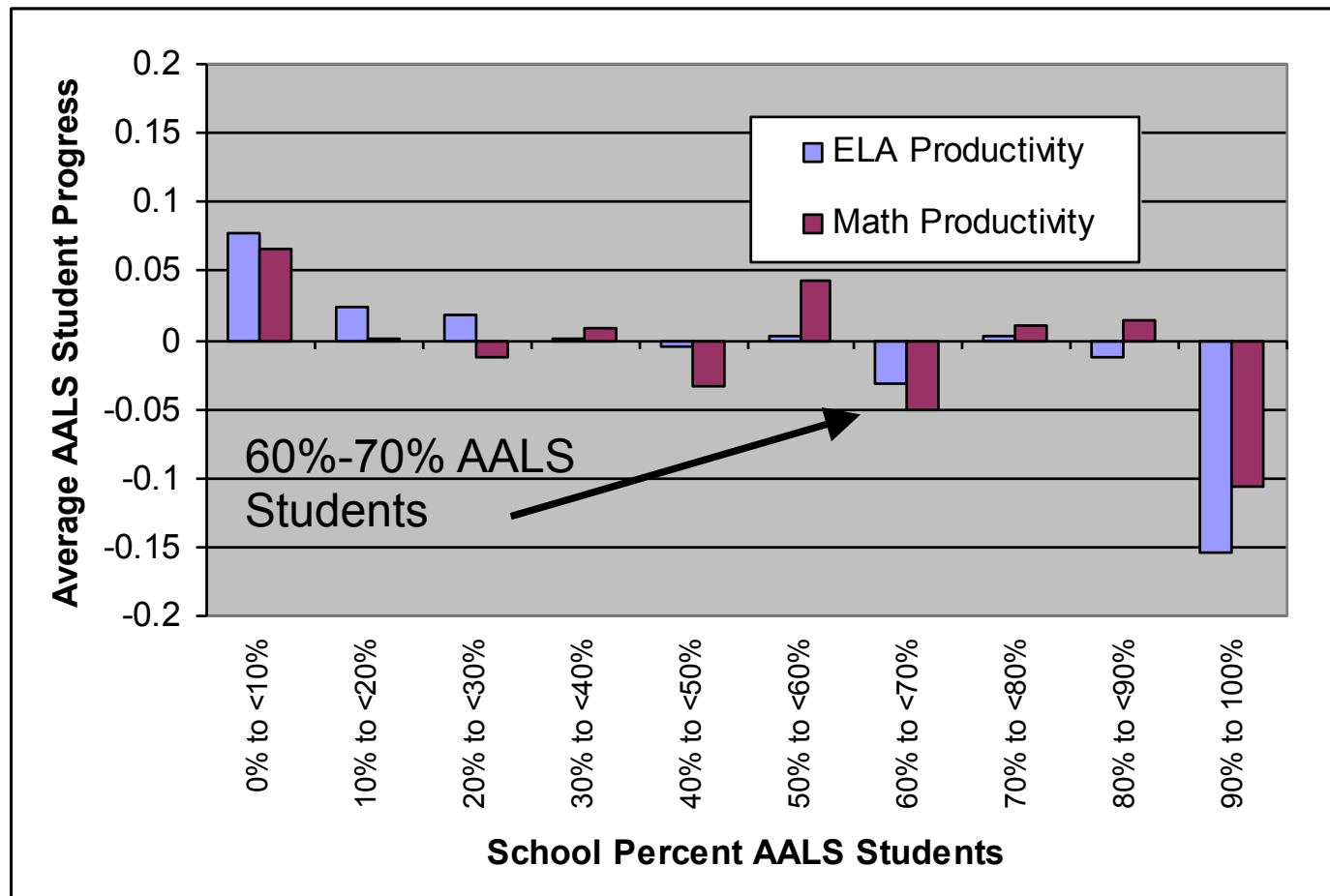
Question 1 (school-level): School value-added in math is also lower, on average, in concentrated AA/L/S schools (2007-2008)



Question 1 (student-level): Students show smaller achievement gains, on average, in schools with more AA/L/S students (2003-04 to 2008-09)



Question 1 (student-level): AA/L/S students also show smaller achievement gains, on average, in schools with more AA/L/S students (2003-04 to 2008-09)



Question1 (student-level matched): Students do less well in concentrated AA/L/S Schools*

- Students in AA/L/S concentrated schools scored lower in ELA and math than matched students in other SFUSD schools (2003-04 to 2008-09). Students were matched using a statistical technique called propensity score matching.
 - All Students
 - ELA: $-.04$ sds ($t=-8.56$, $p < .001$)
 - Math: $-.02$ sds ($t=-3.93$, $p < .001$)
 - AAL Students
 - ELA: $-.04$ sds ($t=-6.81$, $p < .001$)
 - Math: $-.01$ sds ($t=-1.98$, $p < .05$)

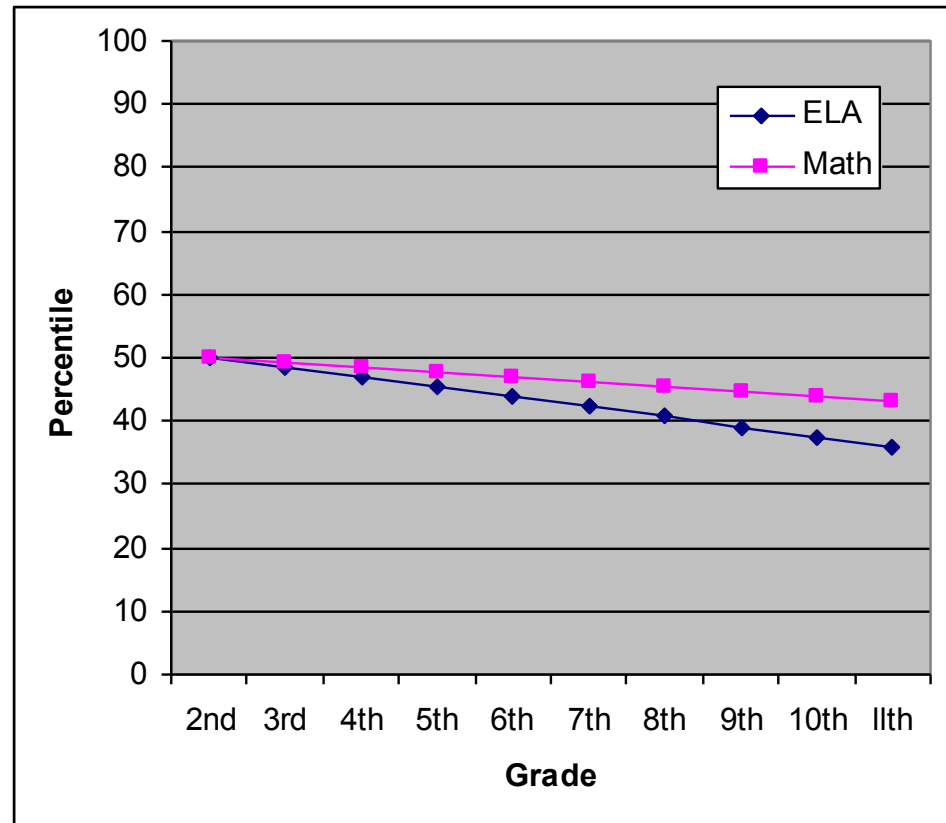
*Students matched on prior achievement in ELA and math, gender, race/ethnicity, parent education, EL status, retained in grade, and poverty

Differences in effectiveness add up over time

Example based on effectiveness difference found for concentrated AALS schools

A student starting at 50th percentile in 2nd grade in a school with $-.04$ sd effectiveness would decline to 36th percentile, on average, by 11th grade.

Similarly, with $-.02$ effectiveness, the student would decline to 43rd percentile by 11th grade.

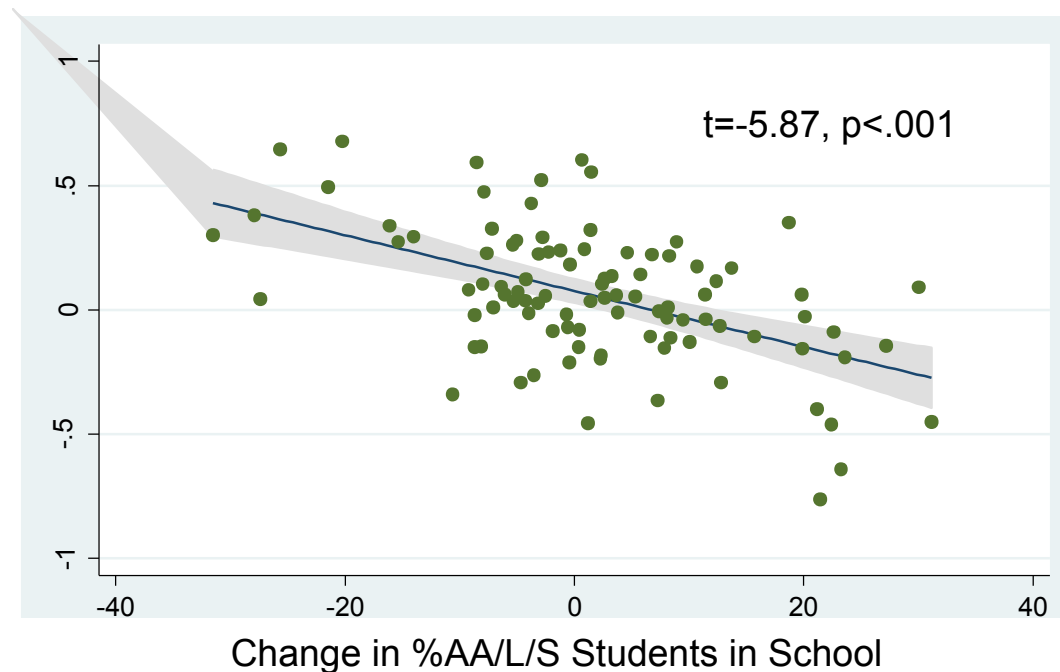


Question 2: Changing demographics and achievement

- When a school's demographics changed, what happened to its average achievement? We focused on the change between 1999 and 2008 in SFUSD schools.
- This has important implications for accountability because the state accountability system requires schools to demonstrate adequate yearly progress (AYP) regardless of their demographic composition.

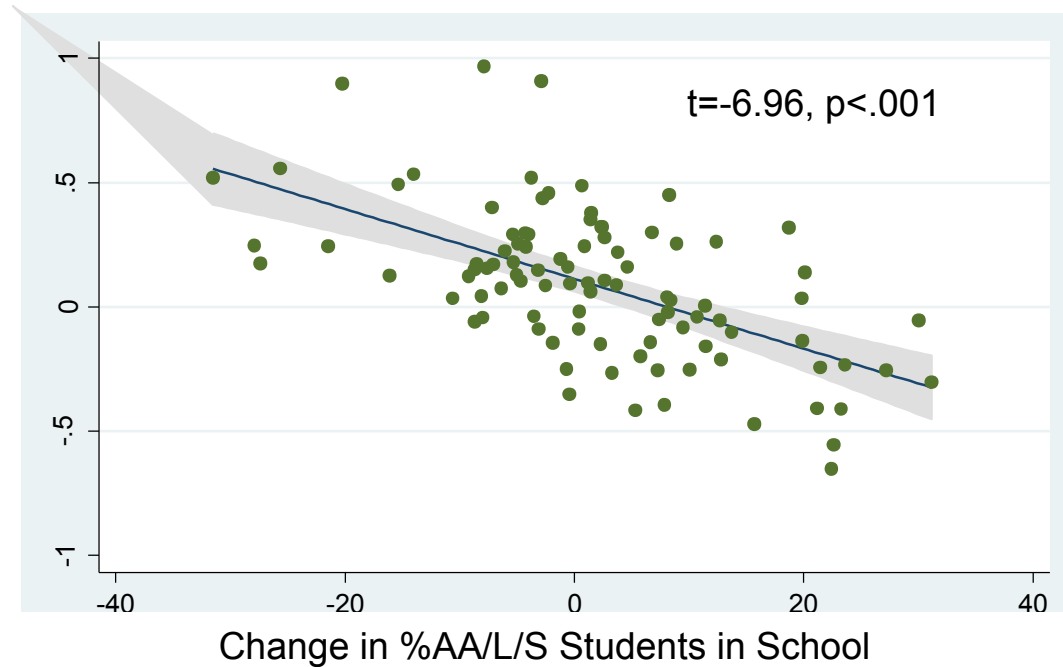
Schools that increased in percent AALS students tended to decrease in average ELA achievement (1999 to 2008)

Change in ELA Achievement for All Students (z-scores)



Schools that increased in percent AALS students also tended to decrease in average math achievement (1999 to 2008)

Change in Math Achievement for All Students (z-scores)



Question 3 (non-academic outcomes): Graduation and student mobility

- Concentrated AA/L/S schools had an 11% lower graduation rate than other SFUSD schools in 2007-08 (controlling for poverty).
- Concentrated AA/L/S schools had a 3.8% higher student mobility rate (students entering or leaving a school) than other SFUSD schools in 2007-08 (controlling for poverty).

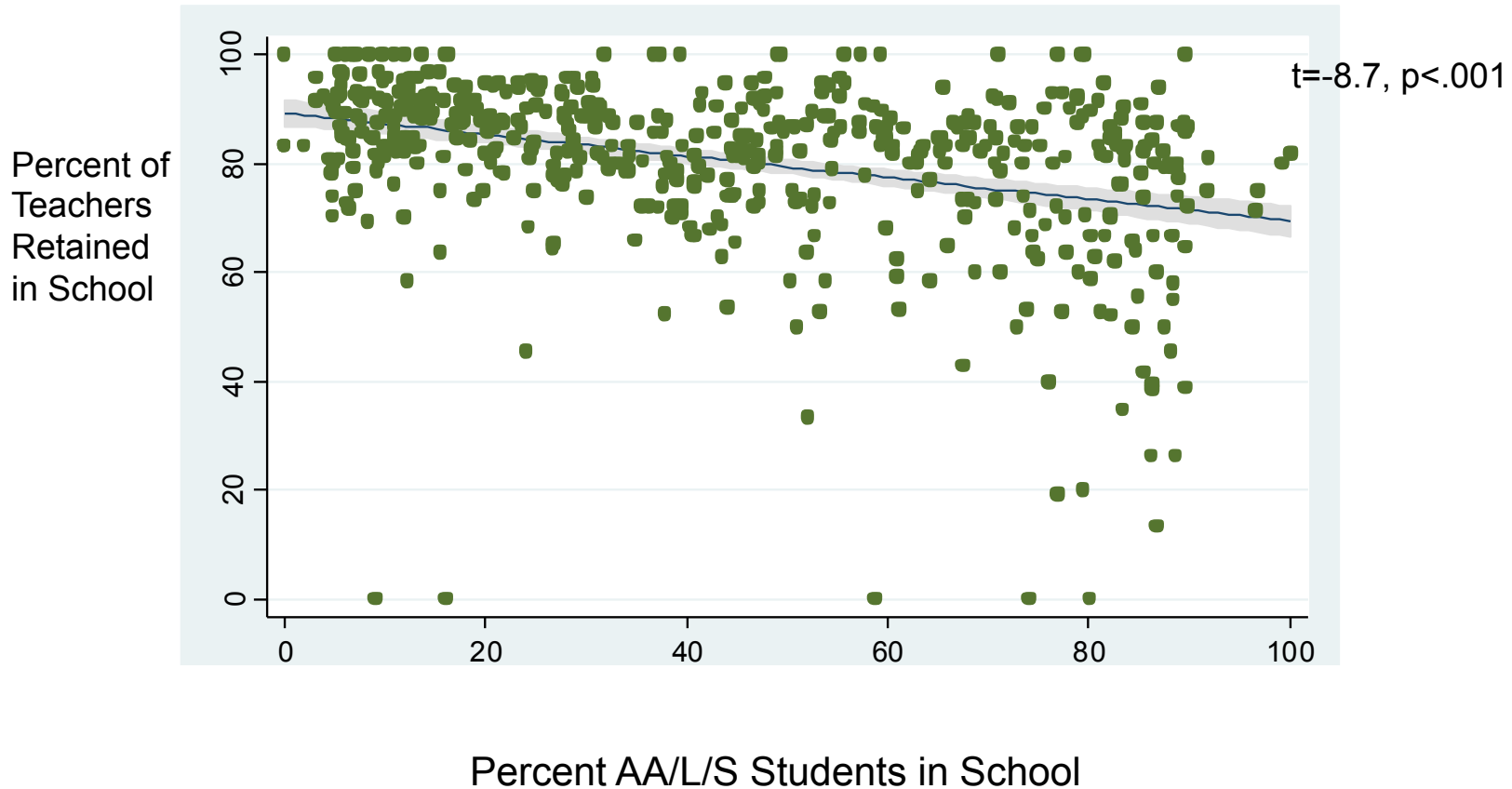
How can we explain differences in school effectiveness?

- Research has suggested segregated schools are often less effective:
 - In Florida, segregation mattered in predicting school-level performance on Florida's state tests (Borman, 2004).
 - In Texas, high racial concentrations of African American students in schools reduced achievement for African American students, and racial composition of a school explains a meaningful portion of the racial achievement gap (Hanushek, *et al.*, 2007).
 - The reasons for lower effectiveness not well-understood and a likely to be complex.
 - These were average effects, and not all schools fit these trends.
- We decided to explore differences in teacher experience and stability in AA/L/S concentrated schools.

Question 4 (teachers): Schools with more AA/L/S students, on average, had less experienced teachers and more teacher turnover

- Teacher experience and stability (2004-05 to 2007-08)
 - AALS concentrated schools had teachers with significantly less experience than other SFUSD schools (average 10.3 years exp. vs. 13.4 years exp.) ($t = -11.26$, $p < .001$).
 - AALS concentrated schools had significantly more first and second year teachers (3.7%) than other SFUSD schools (2.1%) ($t = 4.23$, $p < .001$).
 - AALS concentrated schools had a significantly lower rate of teacher retention than other SFUSD schools (83.9% vs. 73.4%, $t = -7.61$, $p < .001$).

Schools with higher concentrations of AA/L/S students had lower average rates of teacher retention (2003-04 to 2007-08)



Conclusions (1 of 2) – Racial concentration reduces school effectiveness for historically underserved students

- SFUSD schools with concentrations of AA/L/S students have been less effective, on average, in raising student achievement.
 - This difference does not depend on differences in the individual students, because students who are demographically similar still show smaller gains, on average, at concentrated AA/L/S schools.
 - This effect is larger in ELA than math.
- Lower effectiveness increases the achievement gap.
 - Because effectiveness measures rate of academic progress, the racial achievement gap is increased if AA/L/S students attend less effective schools. The gap grows larger for each year a student is in a less effective school.
- On average, teachers at racially concentrated schools are less experienced and have higher mobility.

Conclusions (2 of 2) – Racial concentration reduces school effectiveness for historically underserved students

- Racial concentration is only one factor influencing a school's effectiveness.
 - Some schools with high concentrations of AA/L/S students had above-average effectiveness, whereas some schools with low concentrations of AA/L/S students had below-average effectiveness.
 - The matrix is a specific measure of a school's effectiveness, so it is better to consult a school's matrix rating than to consider its racial concentration when looking for effective schools.
- It is important for the district to understand why schools are effective or ineffective.
 - This question can only be answered by careful study of what is happening at specific schools.
 - It may be especially useful to study effective schools with high concentrations of AA/L/S students.

Citations

- Borman, et al. (2004). Accountability in a postdesegregation era: The continuing significance of racial segregation in Florida's schools," *American Educational Research Journal*, v41, n3, p. 605.
- Hanushek, E.A., Kain, J.F., Rivkin, S. G. (June 2007) "New Evidence about *Brown v. Board of Education*: The Complex Effects of School Racial Composition on Achievement."