Understanding and Acting on The Achievement Gap

A Briefing for the Minnesota P-20 Education Partnership
May 2, 2012
The Minnesotans Behind the Numbers
Achievement Gap Overview

1. What do we mean by the achievement gap?
2. Why does the achievement gap matter?
3. How do we know if we are making progress toward closing achievement gaps?
4. What is the recent history of the achievement gap in the U.S?
5. What do we know about the achievement gap in Minnesota?
6. What factors might cause – or at least correlate with – achievement gaps?
7. What strategies for closing achievement gaps appear to be effective?
Definitions Matter:

EDUCATION
An Alternative Framing of the Gap

There is no “achievement gap” at birth—at least not one that favors European American children. Indeed, the achievement gap should not be considered the gap between black children’s performance and white children’s performance—the latter of which can be considered only mediocre on an international scale—but rather between black children’s performance and these same children’s exponentially greater potential.

-- Lisa Delpit, 2012

Wikipedia defines the achievement gap as...

“...the observed disparity on a number of educational measures between the performance of groups of students, especially groups defined by gender, race/ethnicity, and socioeconomic status.”

Can be observed on measures such as:

- Standardized test scores
- Grade point averages
- High school graduation rates
- Postsecondary enrollment and completion rates
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Do gaps in K-12 test scores affect important life outcomes?
8th Grade Math Scores and College Completion

Education level by eighth-grade math achievement quartile
% with bachelors degree

Educational Attainment and Economic Outcomes

**Education pays**

Unemployment rate in 2009:
- Doctoral degree: 2.5
- Professional degree: 2.3
- Master's degree: 3.9
- Bachelor's degree: 6.8
- Associate degree: 9.7
- Some college, no degree: 14.6
- High school graduate: 7.9
- Less than a high school diploma: 9.7
- Average, all workers: 7.9

Median weekly earnings in 2009:
- Doctoral degree: $1,532
- Professional degree: $1,529
- Master's degree: $1,257
- Bachelor's degree: $1,025
- Associate degree: $761
- Some college, no degree: $699
- High school graduate: $626
- Less than a high school diploma: $454
- Average, all workers: $774

The Achievement Gap and GDP

If the United States had closed the racial achievement gap, GDP would be $310 billion to $525 billion higher in 2008.

Range (A to B) determined by assumptions about the ability to make use of higher skilled people and the quality of economic institutions.

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Measuring Progress in Closing Gaps

1. Don’t just compare student groups to each other – also consider where groups start and finish relative to academic standards, grade-level expectations or other learning goals

2. Two data points does not make a trend – and it’s the trend that matters

3. When everyone improves, gaps often don’t close

4. Small changes in outcomes or differences between groups may not be statistically significant
Consider Where Gaps Start and Finish: Scenario 1

Consider Where Gaps Start and Finish: Scenario 2

Two Data Points Do Not Make a Trend

3rd grade students achieving reading standards
By racial and ethnic group, Minnesota, 2006-2011

Source: Minnesota Department of Education; Graph from Minnesota Compass
When everyone improves, gaps often don’t close

Source: Minnesota Department of Education; Graph from Minnesota Compass
Small changes and differences may not be statistically significant

2003 NAEP State Results for Eighth Grade Reading
National Assessment of Educational Progress (Scale Scores Shown)³

<table>
<thead>
<tr>
<th>State</th>
<th>Ave. Scale Score</th>
<th>Rank</th>
<th>95 percent Confidence Interval</th>
<th>Range of Ranks</th>
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<tbody>
<tr>
<td>Iowa</td>
<td>267.50</td>
<td>12</td>
<td>265.952 - 269.048</td>
<td>2</td>
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<tr>
<td>Michigan</td>
<td>264.38</td>
<td>27</td>
<td>260.774 - 267.986</td>
<td>6</td>
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<tr>
<td>Minnesota</td>
<td>267.71</td>
<td>10</td>
<td>265.593 - 269.827</td>
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<tr>
<td>Illinois</td>
<td>266.41</td>
<td>18</td>
<td>264.430 - 268.390</td>
<td>5</td>
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<td>North Dakota</td>
<td>269.73</td>
<td>6</td>
<td>268.201 - 271.259</td>
<td>1</td>
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<tr>
<td>Ohio</td>
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<td>South Dakota</td>
<td>269.97</td>
<td>4</td>
<td>268.461 - 271.479</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Wisconsin Education Association Council, Research Briefs, #11, Fall 2011
Discussion Point

How should the P-20 Partnership measure gaps and evaluate progress toward closing them?
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Trends in the Long-Term NAEP Exam

1. Black-white and Hispanic-white gaps significantly shrank between 1970 and the late 1980’s.
   - 1/3 of the narrowing due to changes in family characteristics such as increased parental income and education and decreased number of siblings
   - Remaining 2/3 a subject of scholarly debate: Investment in Head Start and Title I? Increased rigorous course taking? Desegregation? Minimum competency testing???

2. Narrowing stopped from 1990-early 2000’s
   - Reasons unknown

3. Some recent progress in grades 4 and 8 but not 17

White-Black Reading Gaps, Age 9
National Assessment of Educational Progress (NAEP)

White-Black Reading Gaps, Age 13 NAEP

White-Black Reading Gaps, Age 17 NAEP

White-Hispanic Math Gaps, Age 9 NAEP

White-Hispanic Math Gaps, Age 13 NAEP

White-Hispanic Math Gaps, Age 17 NAEP

The Upshot of the Gaps in Math:
African American and Latino 17 Year-Olds Do Math at Same Levels As White 13 Year-Olds

Source: The Education Trust based on data from the National Center for Education Statistics, NAEP 2004 Trends in Academic Progress
The Upshot of the Gaps in Reading: African American and Latino 17 Year-Olds Read at Same Levels As White 13 Year-Olds

Source: The Education Trust based on data from the National Center for Education Statistics, NAEP 2004 Trends in Academic Progress
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A Quick Reminder of How Minnesota is Changing

White enrollments fall, minority enrollments rise in districts of all sizes

Source: Minnesota State Demographic Center
Minnesota’s achievement gaps along socioeconomic lines are large…

Source: Minnesota Department of Education; Graph from Minnesota Compass
But gaps along racial lines are generally larger

Source: Minnesota Department of Education; Graph from Minnesota Compass
In Minnesota, race and poverty often converge.

Minnesota’s gaps exist at every age level and on many different assessments

% of Minneapolis Kindergarteners Ready for School

Source: oneMinneapolis: Community Indicators Report, October 2011, The Minneapolis Foundation and the Wilder Foundation
The End of High School

% MN Students Meeting ACT College Readiness Benchmark in Math

American Indian/Alaska Native: 39%
Caucasian American/White: 65%
Hispanic: 36%
Asian American/Pacific Islander: 48%
Other/No response: 54%

Source: ACT, Minnesota: The Condition of College and Career Readiness Class of 2010
College Completion

% of Minnesota Students Who Complete an Undergraduate Degree in 6 Years

Minnesota’s gaps don’t exist just because our white and affluent students do so well
Scale Scores by State: African-American Students

Grade 4 – NAEP Reading (2011)

Source: NAEP Data Explorer, NCES (Proficient Scale Score = 238); Graph by The Education Trust
Scale Scores by State: Latino Students

Grade 4 – NAEP Reading (2011)

Source: NAEP Data Explorer, NCES (Proficient Scale Score = 238); Graph by The Education Trust
Scale Scores by State: Low-Income Students

Grade 4 – NAEP Reading (2011)

Source: NAEP Data Explorer, NCES (Proficient Scale Score = 238); Graph by The Education Trust
Scale Scores by State: Higher Income Students

Grade 4 – NAEP Reading (2011)

Average Scale Score

Source: NAEP Data Explorer, NCES (Proficient Scale Score = 238); Graph by The Education Trust
Scale Scores by State – All Students

Grade 8 – NAEP Math (2011)

Source: NAEP Data Explorer, NCES (Proficient Scale Score = 299); Graph by The Education Trust
Scale Scores by State: White Students

Grade 8 – NAEP Math (2011)

Average Scale Score

Source: NAEP Data Explorer, NCES (Proficient Scale Score = 299); Graph by The Education Trust
Scale Scores by State:
African-American Students

Grade 8 – NAEP Math (2011)

Source: NAEP Data Explorer, NCES (Proficient Scale Score = 299); Graph by The Education Trust
Scale Scores by State: Latino Students

Grade 8 – NAEP Math (2011)

Source: NAEP Data Explorer, NCES (Proficient Scale Score = 299); Graph by The Education Trust
Scale Scores by State: Low-Income Students

Grade 8 – NAEP Math (2011)

Source: NAEP Data Explorer, NCES (Proficient Scale Score = 299); Graph by The Education Trust
Scale Scores by State: Higher Income Students

Grade 8 – NAEP Math (2011)

Source: NAEP Data Explorer, NCES (Proficient Scale Score = 299); Graph by The Education Trust
Discussion Point

Do the data on achievement gaps in the U.S. and Minnesota raise questions and issues that the P-20 Partnership should explore more deeply?
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Untangling the Causes of the Gap
“Scholars in the history of education, such as James Anderson (1989), Michael Fultz (1995), and David Tyack (2004), have documented the legacy of inequities in the United States. Those inequities initially were formed around race, class, and gender. Gradually, some of the inequities began to recede, but clearly they persist in the realm of race….Why, then, would we not expect there to be an achievement gap?”

-- Gloria Ladson Billings

2006 American Educational Research Association Presidential Address
Correlation vs. Causation

The data show a clear relationship:
An Example from Education

2011 Student Population
CONCORDIA CREATIVE LEARNING ACADEMY

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Count</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Am Indian</td>
<td>3</td>
<td>1.0%</td>
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<tr>
<td>Asian</td>
<td>48</td>
<td>16.1%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>31</td>
<td>10.4%</td>
</tr>
<tr>
<td>Black</td>
<td>138</td>
<td>46.2%</td>
</tr>
<tr>
<td>White</td>
<td>79</td>
<td>26.4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Learner</td>
<td>34</td>
<td>11.4%</td>
</tr>
<tr>
<td>Special Education</td>
<td>59</td>
<td>19.7%</td>
</tr>
<tr>
<td>Free/Reduced Priced Lunch</td>
<td>260</td>
<td>87.0%</td>
</tr>
</tbody>
</table>
A School That Is Beating the Odds

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**Trend All Accountability Tests Proficiency**

**Math All Grades**

**All Students**

- **STATEWIDE**
- **CONCORDIA**
What caused those good outcomes?

Let’s assume the school is just like a group of similar schools except for the following increases in learning time:

- Longer school day
- ½ day Saturday school encouraged for all students and required for students who are behind
- Longer school year

Those strategies must be the cause of the good performance, right?

Or are the families that choose to send their children to school for longer days, weeks and years different from families that do not in important if not easily observable ways?
There Are Factors that Clearly Correlate With the Achievement Gap

But these may not be the only things that matter, so let’s keep in mind Carl Sagan’s reminder:

Absence of evidence is not evidence of absence.
Correlates of the Achievement Gap

A recent synthesis of the research conducted by the Education Testing Service identified the following factors:

**School Factors**
- Curricular rigor
- Teacher preparation
- Teacher experience
- Teacher absence and turnover
- Class size
- Availability of instructional technology
- Fear and safety at school
- Parent participation in school activities and events

Correlates of the Achievement Gap

A recent synthesis of the research conducted by the Education Testing Service identified the following factors:

**Before and Beyond School Factors**

Frequent changing of schools
Low birth weight
Environmental damage
Hunger and nutrition
Talking and reading to babies and young children
Excessive television watching
Family structure: # of parents in household
Summer achievement gain/loss

So do gaps exist in the factors that likely influence achievement gaps?
The Rigor of the Curriculum

% of High School Graduates Who Complete at Least a Midlevel Curriculum

“High-performing” teachers = top 25% of teachers as measured by student achievement
“Low-performing” teachers = bottom 25% of teachers as measured by student achievement

Estimated Cumulative Differences in Language Experience by 4 Years of Age

*Projected from 36 to 48 months.

Percentage of Children Ages 3 to 5 Who are Read to Every Day by a Family Member

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Moving from identifying the problem to solving it.
“The problem is, despite decades of interventions, we do not know how to close the racial achievement gap.”

- Curto, Fryer & Howard, 2010

We may not know how to close gaps, but we can make progress at every level

**States matter:** California and Texas are two large states with similar demographics but different achievement outcomes – showing that state-level policy can make a difference in student achievement

**Districts matter:** Within a state, districts with similar demographics can have very different levels of achievement – showing that district-level policy makes a difference

**Schools matter:** Even within the same district, schools with identical demographics can have very different levels of achievement – showing school leadership matters

**Classrooms matter:** In the United States greater variation is found within schools than between schools

**Example**

- California students are one to two years of learning behind Texas students
- Across Texas districts, test passing can vary by 25 percentage points
- Within Texas districts, school achievement levels can vary by 20-30 percentile
- Within the classroom, factors such as teacher quality influence student achievement

Strategies That May Make a Difference But That Haven’t Closed the Gap to Date

- High-quality early childhood interventions
- Smaller schools and smaller classrooms
- Mandatory summer school
- Merit pay for principals, teachers, and students
- After-school programs
- Comprehensive school reform
- Ending social promotion
- Alternative paths to teacher accreditation
- And more…

Source: V.E. Curto, R.G. Fryer and M.L. Howard, It May Not Take a Village: Increasing Achievement among the Poor, Education Innovation Laboratory, Harvard University, 2010; J
Beyond School Reform

The persistence of gaps has led some researchers to call for:

- Creating neighborhoods and communities that are focused on educational success
- Rebuilding family structures and enhancing parenting
- Lowering income inequality
- And more…

A Word on Desegregation

“If society’s only goal were to eliminate racial disparities in test scores, setting aside the various concerns that have led courts to move away from school integration over time, the literature points to some clear remedies. Busing, or other measures to reduce segregation across schools within a district, appears to have a modest narrowing effect on the black-white test score gap….Given existing differences in the racial composition of cities versus suburbs in America, though, it seems clear that desegregation efforts that worked across district lines could accomplish much more than an order to integrate schools within districts in some parts of the country.

An alternative approach to remedying the negative effects of school segregation, such as they exist, would be to directly address the causal mechanisms producing the effects.”

-Vigdor and Ludwig, 2008

The P-20 Partnership’s Next Step: May 31, 2012

- Workshop with Dr. Ronald Ferguson, Harvard University
- Ferguson’s framework for closing the achievement gap:
  1. High-quality parenting
  2. High-quality teaching
  3. High-quality youth peer cultures

Discussion Point

What questions and issues should the P-20 Partnership focus on during the May 31 workshop with Dr. Ferguson and beyond?