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New Research Shows Persistence of Test Scores and School Performance, Despite Education Reform Efforts

Brown Center on Education Policy report notes narrowing gap between high and low achievers

Washington, D.C. March 17, 2010 – Seeking to answer the question of whether failing schools can be saved, a new report from the Brookings Institution's Brown Center on Education Policy concludes that test scores are primarily static, and that while turning around these schools can be done, the odds are daunting.

The research compares the 1989 and 2009 California Assessment Program (CAP) test scores of 1,156 California schools that had an eighth grade class in 1989 and were still operating in 2009.

The results are remarkably stable: Of the 290 low-performing schools, 184 (or 63.4 percent) scored in the lowest quartile again in 2009. Approximately 27.2 percent (79 schools) moved up to the second quartile; 7.9 percent (23 schools) improved to the third quartile, and 1.4 percent (four schools) moved all the way up to the top quartile. As noted in the report, data in this study empirically support what many observers of school reform have said: turning around a failing school is extremely difficult, but not impossible.

School Composite Test Scores, 1989 and 2009, by quartile

Table 2-1

		1989 Composite Score				
		Quartile 1	Quartile 2	Quartile 3	Quartile 4	TOTAL
2009 Composite Score	Quartile 4	4	22	81	182	**289**
	Quartile 3	23	78	108	80	**289**
	Quartile 2	79	121	69	20	**289**
	Quartile 1	184	69	29	7	**289**
	TOTAL	**290**	**290**	**287**	**289**	**1156**

"School achievement appears astonishingly persistent," notes Tom Loveless, Brookings senior fellow and author of the 2009 Brown Center Annual Report. "Nearly two-thirds of low-performing schools in 1989 are still low performers two decades later. But there is a ray of hope, as about one-third of these schools show evidence of improvement. Nevertheless, it is highly unlikely that a low-performing school becomes a high-performing school; the chances (four out of 290) are less than one out of seventy."

The report also concluded that falling from the highest quartile is as difficult as rising from the lowest. Almost two-thirds of top quartile schools in 1989 were still there in 2009 (63.0 percent, 182 schools). About 27.7 percent (80 schools) fell to the third quartile, and 6.9 percent (20 schools) declined to the second quartile. Only 2.4 percent (seven schools) of 1989's highest-achieving schools scored in the lowest quartile in 2009.

Middle performers show evidence of more mobility than the schools in the top and bottom quartiles, but not significantly. Such movement tended to be to an adjacent quartile and can be either up or down; that is, a manifestation of either improving or deteriorating test scores.

Using test score data from California schools also highlights how difficult it is to change school performance as California has experimented with a number of reforms without producing significant average test score gains for the state as a whole. California scored 6 points below the National Assessment Educational Progress (NAEP) national average for eighth grade math in 1990 and 12 points below the national average in 2009.

"With all the school reform activity in California, one would expect to have shuffled the deck," observes Loveless. "But 20 years later, the deck looks remarkably unshuffled. Factor in the natural volatility in school test scores — the amount they vary from year to year due to measurement error—and the stability of the scores in this study is truly amazing."

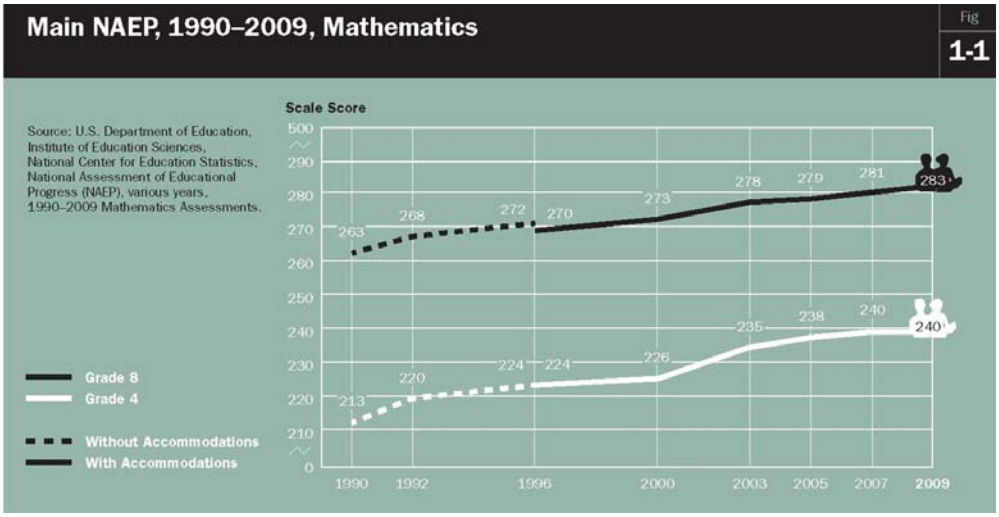
The study speculates that the answer to why school performance remains remarkably unchanged may have to do with what Loveless terms "the institutional DNA of schools," in which a school's culture is passed down from outgoing students and teachers to incoming generations. Loveless argues that more research is needed analyzing longitudinal data and tracking the institutional trajectories of schools over extended periods of time.

Analysis of the 2009 NAEP – When is a Trend Really a Trend? Results Also Show Achievement Gaps are Shrinking

When 2009 NAEP math scores were announced last October, the fourth-grade math scores showed a potential slowing in what has been a nearly two-decade upswing. This news generated an outpouring of concern among educators and set off new calls for comprehensive education reforms. Loveless argues, however, that much of this consternation is unwarranted**.**

The study indicates that from 1990 to 2007, fourth graders' math scores rose from 213 to 240, a gain of 27 scale score points. Analysts usually consider 10 to 11 points as equal to one year of learning.

Using that metric, the gain represents more than two and a half grade levels of mathematics, a remarkable increase over 17 years. The gain from 1990 to 2009 is the same, 27 points, also a strong increase. The only difference: that the latter occurred over an interval of 19 years, during which scores were flat for only the last two years.



After comparing the NAEP gains to gains on comparable tests, Loveless points out, "One reasonable explanation for the flat 2009 main NAEP scores is that the test is simply coming back to Earth, finally reporting progress more in line with other national math tests, and in particular, with the other NAEP test."

He argues that, "At the rate fourth graders were progressing from 1990 to 2007, they would have been performing at the eighth-grade level on the main NAEP by 2022 and at a high school senior level — that is, ready for college mathematics — in 2053. That projection lacks credibility."

Given all the handwringing over these recent test scores, when can one be confident that a NAEP trend is really a trend? Loveless proposes four tests: (1) when it extends over both NAEP tests (main and long -term trend), (2) over both subjects (math and reading), (3) both grade levels (4th and 8th grade) and (4) and over time (the longer the more likely it exists). Test scores should be evaluated in the context of time and over several administrations of the test.

The expressions of dismay last fall do not meet those benchmarks, but there is a little-discussed trend that does emerge – the narrowing gap between high performers (90th percentile) and low performers (10th percentile).

Acknowledging that NAEP data cannot demonstrate causality, the study nominates accountability systems as a potentially leading factor in shrinking the 90–10 gap. Scores from public and private school students are compared, utilizing private schools' immunity from accountability policies to form a comparison group. The contraction of the 90–10 gap is apparent in the public sector after 1998 but not in the private sector, a contrast consistent with the hypothesis that public school policies are associated with the trend.

Gap Changes on the Main NAEP
90th and 10th percentile, 1990–2009

Table 1-4

Years	4th-Grade Math	4th-Grade Reading	8th-Grade Math	8th-Grade Reading	TOTAL
2007–2009	0	TBA	+1	TBA	
2005–2007	0	-2	-1	-1	-4
2003–2005	0	-3	0	0	-3
2002–2003	—	+2	—	+4	+6
2000–2003	-8	—	-4	—	-12
2000–2002	—	-10	—	—	-10
1998–2002	—	—	—	-5	-5
1998–2000	—	+4	—	—	+4
1996–2000	+1	—	+2	—	+3
1994–1998	—	-8	—	-6	-14
1992–1996	-2	—	-1	—	-3
1992–1994	—	+13	—	+2	+15
1990–1992	0	—	+2	—	+2

Note: All cells report change in scale score points. Rules on accommodations changed in 1996 for math and 1998 for reading. For intervals with 1996 as an end point in math, gaps are computed from scores in which accommodations were not permitted. For math intervals with 1996 as a starting point, gaps were computed from scores in which accommodations were permitted. In reading, the same rules apply but with 1998 as the key year.

Source: Author's calculations from data provided by NAEP Data Explorer (http://nces.ed.gov/nationsreportcard/naepdata/)

What Do We Know about Conversion Charter Schools?

Converting failing schools to charters has been proposed as an effective way to reform schools, but there is still much to be learned about this intervention.

This study examined data on California conversions, the state with the most, and many of the oldest, conversions. Data were collected on 49 schools from 2004 and 60 schools from 2008. The schools' reading and math scores have changed insignificantly since 1989, when they operated as traditional public schools, to more recent years when they operated as charters.

School Characteristics (2004 Cohort)

Table 3-2

3rd grade	State Average (N=5153)	Start-Ups (N=57)	Conversions (N = 49)
STUDENT DEMOGRAPHICS			
White	35.7%	54.1%	30.2%
Hispanic	43.1%	22.8%	44.4%
Black	8.0%	13.6%	20.5%
Asian	11.0%	4.0%	4.1%
Other	2.2%	5.5%	0.8%
COMMUNITY			
Urban	43.2%	40.4%	61.2%
Suburban	46.7%	40.3%	28.6%
Rural	10.1%	19.3%	10.2%
ENROLLMENT			
Median enrollment	572	245	641
Median students per grade (calculated)	86.9	28.9	98.3
Student/teacher ratio	19.2	18.8	18.1

One significant finding stands out. On several key characteristics, conversions look more like traditional public schools than start-up charters. Compared with start-ups, conversions are more concentrated in urban areas, have larger student enrollments, and serve greater numbers of Hispanic and black students. Teachers at conversions are more experienced and more likely to hold teaching certificates, particularly in bilingual education.

In order to properly analyze charter schools, the report argues that researchers must differentiate between start-ups and conversions because of the profound institutional differences between the two types of charters.

About the Brown Center on Education Policy and The Brookings Institution

Established in 1992, the Brown Center on Education Policy conducts research and provides policy recommendations on topics in American education. The Brown Center is part of The Brookings Institution, a private nonprofit organization devoted to independent research and innovative policy solutions.

For a full copy of the report as well as information about other Brown Center events and publications, please visit the Brown Center's Web site at http://www.brookings.edu/brown.aspx, or call Christine Jacobs at 202.797.6012.

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