Monday, July 24, 2000

Educ -
Evaluations

MEMORANDUM TO BRUCE REED

FROM: Bethany Little

SUBJECT: RAND Report on Education and Texas

On Tuesday, July 25 at 11:00 am the RAND Corporation will release their most recent analysis of the scores from the National Assessment of Educational Progress (NAEP). The RAND report, "Improving Student Achievement: What State NAEP Scores Tell Us," concludes that education reforms are working, but that progress is far from uniform among the states, with Texas ranking at or near the top by almost all of their measures. The good news is that the report also concludes that money matters to student success, and that accountability systems recently put in place will only benefit students if they are accompanied by significant investment. The report specifically cites smaller classes, access to preschool and resources for teachers as the most effective investments for education reform.

According to the RAND staff, Bush's campaign was briefed on this early last week, and received the report his morning. RAND's press release is attached, with some draft press Qs and As.

Other Important Findings
RAND's press release highlights some key findings from the report, including:

- Math scores are rising at a national average rate of about one percentile point per year, but progress varies significantly among states. Texas, North Carolina and others boast gains twice as large as the national average, while other states including Wyoming and Georgia show almost no gains.
- In a comparison of students from similar families, Texas student achievement leads the country, while California (a demographically similar state) ranks last. On average, Texas students scored 11 percentile points above their California peers in both reading and math.
- " In fact, Texans performed well with respect to most states. On the 4th grade NAEP math test in 1996, Texas non-Hispanic white students and black students ranked first compared to their counterparts in other states, while Hispanic students ranked fifth."
- Differences in scores among students from similar backgrounds can be explained in part by the amount and use of education funding. High-performing states tend to have smaller classes, more children attending preschool and teachers who are more satisfied with their resources.
- Masters degrees, extensive teaching experience and teacher salary all seemed to have comparatively little effect on student achievement scores. This may partly reflect current salary scales that reward both high- and low-quality teachers.
- To raise achievement scores, the report recommends targeting education dollars to lower class size, expand access to preschool and improve working conditions, especially in areas with higher proportions of minority and disadvantaged students. Salary increases and training are not seen as being as important as improving teachers' working conditions.

cc: Barbara Chow

90-96
- credits policies in 80s - early 90s

RAND Report Q&A
July 25, 2000

Q: What is the RAND report about and what are its major findings?

A: The RAND report analyzes the results of the National Assessment of Educational Progress in reading and math from 1990-1996. Specifically, RAND uses these results to determine the effectiveness of state education reforms by analyzing the effects of state resources when family factors are held constant. Since family characteristics are the most accurate predictor of educational outcomes, RAND has attempted to analyze data among students with similar families and backgrounds, rather than averages that do not take into account state demographics. The report paints a picture of improvement nationwide, but at varying degrees among states. Most importantly, the report confirms that education reforms are working, and that key to the success of education reform – especially for disadvantaged students -- is investment in smaller classes, preschool and resources for teachers. Al Gore is proposing to devote $115 billion of the budget surplus to create an Education Reform Trust Fund that will help students, teachers, and schools meet higher standards. These investments will provide essential support to help students reach high standards, including universally available preschool; small, safe, successful high schools; smaller classes; and high quality teachers. But more money is only part of Gore's solution. He would also demand more from our students, our teachers, and our schools.

Q: A report released by the RAND corporation today shows that Texas is the leading state in implementing education reform and improving student achievement. Why does the Vice President continue to attack George W. Bush's record on education in Texas?

A: The RAND Report comes to some very important conclusions, including the fact that the education reforms championed by Al Gore and Bill Clinton are working. The Clinton-Gore Administration has consistently promoted an agenda of high standards for all students, investment in what works and accountability for results. Al Gore has proposed building on this foundation with a massive investment in the strategies recommended by the RAND report, including universal preschool, smaller classes and teacher quality. In 1993, the Administration proposed, fought for and won legislation requiring states to establish rigorous standards for what children should learn, institute regular tests to measure progress, and provide accountability for results. This legislation (the Goals 2000 Act and the 1994 reauthorization of the Elementary and Secondary Education Act) ensured that states held disadvantaged students to the same high standards established for all students. Nearly all fifty states now have these results-driven systems in place. In fact, RAND concludes that "The most plausible explanation for the remarkable rate of math gains by North Carolina and Texas is the integrated set of policies involving standards, assessment and accountability that both states implemented in the late 1980s and early 1990s." The education reforms developed by the Texas Business-Education Coalition and put in place before George W. Bush was elected have served Texas students well. However, the package of minimal investment, proposals that are already law and a

backdoor voucher scheme that Bush is promoting is not what has worked for Texas, and would not work for our nation's children.

Q: Doesn't the RAND report confirm that Bush is the better candidate for America's students?

A: Actually, just the opposite. The RAND report makes it very clear that Al Gore's agenda of high standards, investment and accountability is exactly on target to bring revolutionary improvements to our public schools. The RAND report concludes that most of the credit for Texas's success should go to the Texas Business-Education Coalition and other leaders who put Texas on a path to reform before Bush was elected. The real question facing the nation is what the implications of George Bush's national policy proposals are. Bush has said he would end the national class size reduction initiative, has not proposed expanding access to preschool to one additional child, and would take no steps to help turn around or shut down our nation's failing schools. Instead, Bush has proposed a backdoor voucher scheme that would drain resources from the public schools that serve ninety percent of our children to send a few children to private schools. At a time when our economy demands stronger, better public schools, Bush's plan would weaken them.

Q: The RAND report suggests that teacher salaries and qualifications are not a big factor in student achievement. Why is Gore proposing to spend such a significant amount of money on raising teachers salaries?

A: Al Gore's agenda tracks well with the findings of the report overall by strengthening accountability for results while making targeted investments in proven strategies. The report finds that the most important factors for improving student achievement, especially among disadvantaged students, are class size, preschool and teachers' working conditions, all issues that Gore's plan addresses. In fact, the RAND study concludes that "the ineffectiveness of teacher compensation could result from the inefficient structure of the current teacher compensation system and the inability to target salary increases to higher-quality teachers effectively." Al Gore's plan to help raise teachers salaries in high-poverty districts would allow districts and teachers to work together to develop compensation systems that reward high-quality teachers. But Gore would also help improve teachers' working conditions by helping communities build and modernize over 6,000 schools nationwide, creating smaller high schools and supporting more discipline, character education and family involvement in our schools.

RAND
News Release
2000
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EMBARGOED

Not for release before 11 a.m. (ET), Tuesday, July 25
(Wednesday a.m. papers)

RISING MATH SCORES SUGGEST EDUCATION REFORMS ARE WORKING
STATE ACHIEVEMENT DIFFERENCES TIED TO SPENDING, POLICIES
TEXAS FIRST, CALIFORNIA LAST IN TEST SCORES OF SIMILAR STUDENTS

WASHINGTON, D.C., July 25 — The education reforms of the 1980s and 1990s seem to be working, according to a new RAND report, but some states are doing far better than others in making achievement gains and in elevating their students' performance compared with students of similar racial and socioeconomic background in other states. Texas and Indiana are high performers on both these counts.

The study is based on an analysis of National Assessment of Educational Progress (NAEP) tests given between 1990 and 1996. The authors rank the 44 participating states by raw achievement scores, by scores that compare students from similar families, and by score improvements. They also analyze which policies and programs account for the substantial differences in achievement across states that can't be explained by demographics. Here are the key findings:

- Math scores are rising across the country at a national average rate of about one percentile point per year, a pace outstripping that of the previous two decades and suggesting that public education reforms are taking hold. Progress is far from uniform, however. One group of states – led by North Carolina and Texas and including Michigan, Indiana and Maryland – boasts gains about twice as great as the national average. Another group – including Wyoming, Georgia, Delaware and Utah – shows minuscule gains or none at all. Most states fall in between.
- Even more dramatic contrasts emerge in the study's pathbreaking, cross-state comparison of achievement by students from similar families. Texas heads the class in this ranking with California dead last. Wisconsin, Montana, Iowa, Maine, North Dakota,

Indiana and New Jersey cluster closely behind Texas. Louisiana, Mississippi, West Virginia, Alabama and Rhode Island perform almost as dismally as California.

- Although the two states are close demographic cousins, Texas students, on average, scored 11 percentile points higher on NAEP math and reading tests than their California counterparts. In fact, the Texans performed well with respect to most states. On the 4th-grade NAEP math tests in 1996, Texas non-Hispanic white students and black students ranked first compared to their counterparts in other states, while Hispanic students ranked fifth. On the same test, California non-Hispanic white students ranked third from the bottom, black students last, and Hispanic students fourth from the bottom among states.
- Differences in state scores for students with similar families can be explained, in part, by per pupil expenditures and how these funds are allocated. States at the top of the heap generally have lower pupil-teacher ratios in lower grades, higher participation in public prekindergarten programs and a higher percentage of teachers who are satisfied with the resources they are provided for teaching. These three factors account for about two-thirds of the Texas-California differential. Teacher turnover also has a statistically significant effect on achievement. (California is now implementing class-size reduction and other reforms but these steps began after the 1996 NAEP tests.)
- Having a higher percentage of teachers with master's degrees and extensive teaching experience appears to have comparatively little effect on student achievement across states. Higher salaries also showed little effect, possibly reflecting the inefficiency of the current compensation system in which pay raises reward both high- and low-quality teachers. However, the report points out that salary differences may have more important achievement effects within states than between states. Also, they may have greater impact during periods when teachers are in shorter supply than during the 1990–1996 measurement period.
- To raise achievement scores, the most efficient and effective use of education dollars is to target states with higher proportions of minority and disadvantaged students with funding for lower pupil-teacher ratios, more widespread prekindergarten efforts, and more adequate teaching resources. As for teacher salaries and education, the report adds, "efforts to increase the quality of teachers in the long run are important, but ... significant productivity gains can be obtained with the current teaching force if their working conditions are improved."

- The most plausible explanation for the remarkable rate of math gains by North Carolina and Texas is the integrated set of policies involving standards, assessment and accountability that both states implemented in the late 1980s and early 1990s.

The RAND study, led by David Grissmer, is based on NAEP tests given in 1990, 1992, 1994 and 1996 to representative samples of 2,500 students from the 44 voluntarily participating states. Five tests were given in mathematics and two in reading at either the 4th- or 8th-grade level. Not all of the states took all of the tests. And there were too few reading tests to permit a separate analysis of those results. Taken together, however, the tests provided the first set of data permitting statistically valid achievement comparisons across states. The researchers used data from the census and from the National Educational Longitudinal Survey to establish the student samples' family characteristics.

The 1998 NAEP reading and math scores became available too late to be incorporated in this analysis. "We're examining those data now, however, and we find that the state rankings change little and our findings about which policies make the most difference aren't affected at all," Grissmer declares.

"Our results certainly challenge the traditional view of public education as 'unreformable'," he concludes. "But the achievement of disadvantaged students is still substantially affected by inadequate resources. Stronger federal compensatory programs are required to address this inequity."

Grissmer's coauthors include Ann Flanagan, Jennifer Kawata and Stephanie Williamson. *Improving Student Achievement: What NAEP Test Scores Tell Us* was supported by the ExxonMobil Foundation, the Danforth Foundation, the NAEP Secondary Analysis Program, the Center for Research on Educational Diversity and Excellence and by RAND.

RAND is a nonprofit organization that helps improve policy and decisionmaking through research and analysis.

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RAND

Press Briefing

Improving Student Achievement:
What State NAEP Scores Tell Us

9 a.m. Tuesday July 25, 2000

National Press Club
Murrow Room
529 14th Street NW, Washington, DC

Education reform and student achievement are hot political topics in virtually every state as well as in the presidential campaign. A new RAND study examines evidence from student scores on National Assessment of Educational Progress (NAEP) tests to compare performance across 44 participating states. The report ranks the states by raw achievement scores, by score improvements and by scores that compare the performance of students in one state to students of similar racial and socioeconomic background in other states. It also discusses the factors that have the greatest effect on student achievement, identifies some of the state policies and programs that do or don't make a difference, and analyzes which approaches offer the biggest achievement gain for the education buck. Finally, the study builds on these specific findings to reach some broad conclusions about trends in American public education.

Author David Grissmer will discuss the study's findings and respond to questions.

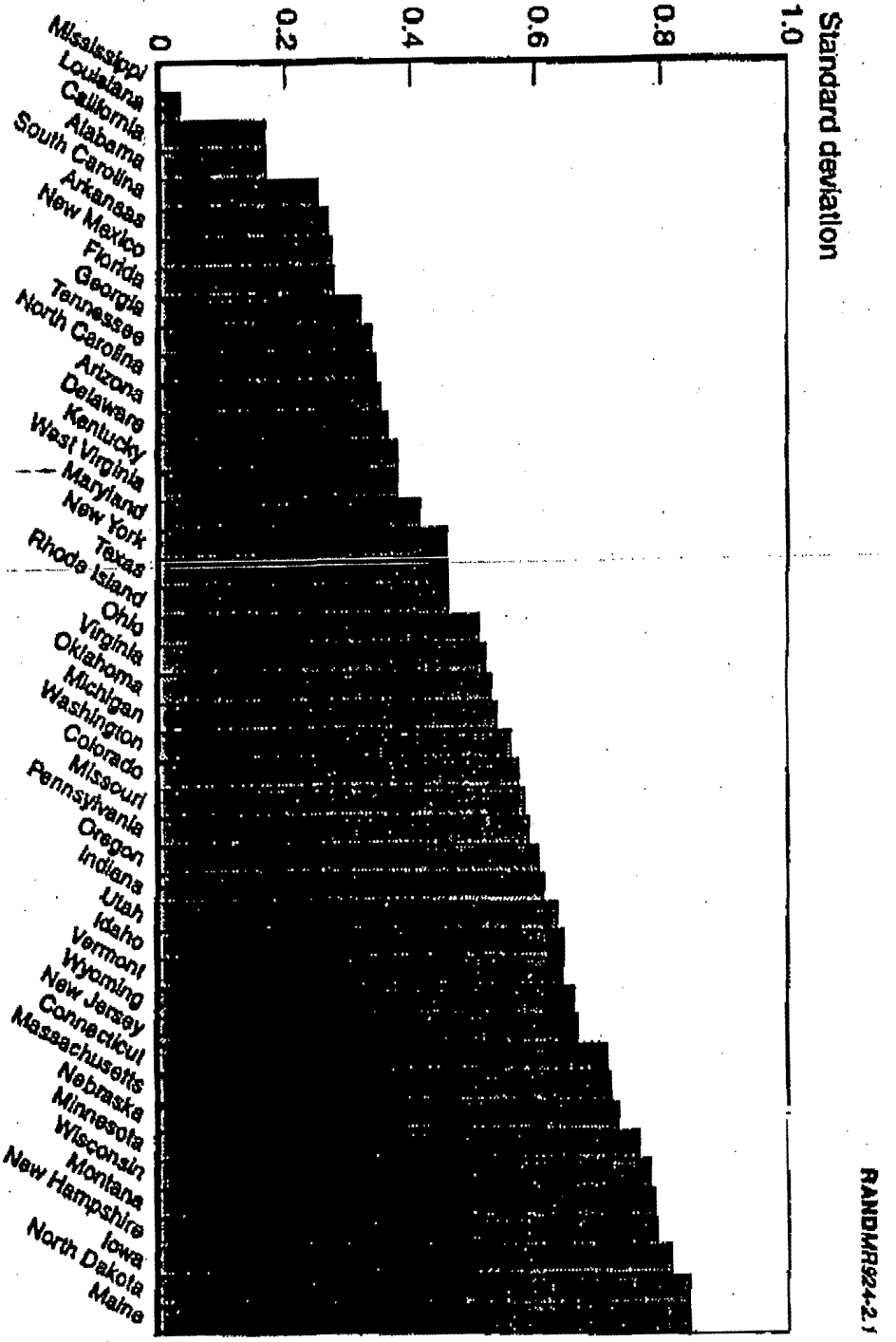

Figure 2.1—Average State NAEP Scores Across Seven Tests

Table 5.4

The Range, Mean, and Statistical Significance of Estimated Annual Score Gains, Math Tests Only

	Range		Average	Significance level				
				Random Effect			Fixed Effect	
				SES	SES-FE	C-N	SES	SES-FE
North Carolina	0.070	0.073	0.072	1	1	1	1	1
Texas	0.056	0.062	0.059	1	1	1	1	1
Michigan	0.057	0.060	0.058	1	1	1	1	1
Indiana	0.048	0.050	0.049	1	1	1	1	1
Maryland	0.046	0.052	0.048	1	1	1	1	1
West Virginia	0.041	0.044	0.043	1	1	1	1	1
Kentucky	0.038	0.042	0.040	1	1	1	1	1
Rhode Island	0.037	0.043	0.040	1	1	1	1	1
Minnesota	0.040	0.041	0.040	1	1	1	1	1
Colorado	0.039	0.040	0.040	1	1	1	1	1
Connecticut	0.038	0.042	0.040	1	1	1	1	1
Florida	0.038	0.040	0.039	1	1	1	1	1
New Jersey	0.034	0.044	0.038	5		5		5
California	0.037	0.040	0.038	1	1	1	1	1
Wisconsin	0.036	0.038	0.037	1	1	1	1	1
New York	0.036	0.038	0.037	1	1	1	1	1
South Carolina	0.031	0.038	0.034	1	5	1	5	1
Tennessee	0.030	0.038	0.033	5	5	5	5	1
Nebraska	0.031	0.036	0.033	1	5	1	5	1
Arizona	0.032	0.035	0.033	1	1	1	1	1
Arkansas	0.028	0.036	0.032	5	5	5	5	5
Louisiana	0.031	0.032	0.031	1	1	1	1	1
Alabama	0.029	0.032	0.031	1	1	1	5	1
New Mexico	0.026	0.032	0.029	1	5	1	5	5
Mississippi	0.025	0.029	0.027	5	10	5	10	5
Virginia	0.025	0.029	0.026	5	5	5	5	1
Pennsylvania	0.022	0.026	0.024					
Massachusetts	0.022	0.027	0.023	10		10		5
Iowa	0.021	0.024	0.022	5	10	5	10	10
Missouri	0.018	0.023	0.021	10		10		10
Maine	0.014	0.024	0.020	10		10		10
North Dakota	0.017	0.021	0.018	10		10		10
Utah	0.016	0.021	0.018					
Delaware	0.015	0.019	0.016					10
Georgia	0.009	0.016	0.012					
Wyoming	−0.008	−0.004	−0.006					

Table 6.1

Estimates of Score Differences for Students from Similar Families

	Range		Average	Significance Level				
				Random Effect			Fixed Effect	
				SES	SES-FE	C-N	SES	SES-FE
Texas	0.088	0.212	0.166	1	1	1		
Wisconsin	0.105	0.163	0.142	1	1	1	1	1
Montana	0.095	0.158	0.122	1	1	5	1	1
Iowa	0.071	0.151	0.113	1	1	5	5	1
Maine	0.060	0.143	0.099	10	5	10	5	5
North Dakota	0.037	0.124	0.081	10		5	10	10
Indiana	0.055	0.084	0.074	5	1	10	10	5
New Jersey	0.037	0.079	0.061	10	1		10	5
Nebraska	0.037	0.085	0.056	10			10	10
Missouri	0.044	0.065	0.055	5	5			
Connecticut	0.024	0.091	0.052		10			5
Oklahoma	0.018	0.055	0.040	10				
Georgia	-0.041	0.085	0.039	10	1	5		
Virginia	0.020	0.060	0.037		10	5		
Wyoming	-0.001	0.064	0.034					
Minnesota	-0.003	0.080	0.031					
Massachusetts	-0.013	0.047	0.020					
Michigan	0.000	0.025	0.014					
Pennsylvania	-0.023	0.020	0.005					
Arizona	-0.053	0.039	0.003					
New Hampshire	-0.035	0.063	-0.001					
Colorado	-0.018	0.015	-0.006					
North Carolina	-0.079	0.041	-0.010					
Washington	-0.027	0.008	-0.014					
Idaho	-0.035	0.012	-0.015					
Ohio	-0.091	-0.004	-0.016					
New Mexico	-0.095	0.039	-0.019					10
South Carolina	-0.133	0.033	-0.026					10
Florida	-0.091	0.002	-0.034					10
Oregon	-0.057	-0.018	-0.038					
New York	-0.080	0.005	-0.038					5
Maryland	-0.074	-0.026	-0.055				5	5
Delaware	-0.095	-0.037	-0.064	10			10	5
Utah	-0.115	-0.021	-0.074	1	1	1		
Tennessee	-0.135	-0.043	-0.077	10	10		10	1
Kentucky	-0.129	-0.063	-0.086		5	10	5	1
Arkansas	-0.162	-0.039	-0.087		10	5		1
Vermont	-0.121	-0.085	-0.106	1	1	5		
Rhode Island	-0.131	-0.084	-0.117	1	1	5	1	5
Alabama	-0.229	-0.075	-0.133	5	1	5	5	1
West Virginia	-0.167	-0.108	-0.135	1	1	1	5	1
Mississippi	-0.319	0.006	-0.137		5		10	1
Louisiana	-0.289	-0.089	-0.156	10	1	5	5	1
California	-0.298	-0.117	-0.174	1	1	1	1	1

Table 6.2

Comparison of California and Texas Family Characteristics

	California	Texas
Parents college educated (%)	24.8	22.8
Family income ($000)	40.2	32.3
Black (%)	7.5	12.1
Hispanic (%)	37.5	34.5
Teen births (%)	11.0	15.0
Single mother (%)	19.0	19.0
Residential stability	54.0	55.0
SES predicted score	−0.06	−0.14
SES-FE predicted score	−0.04	−0.10

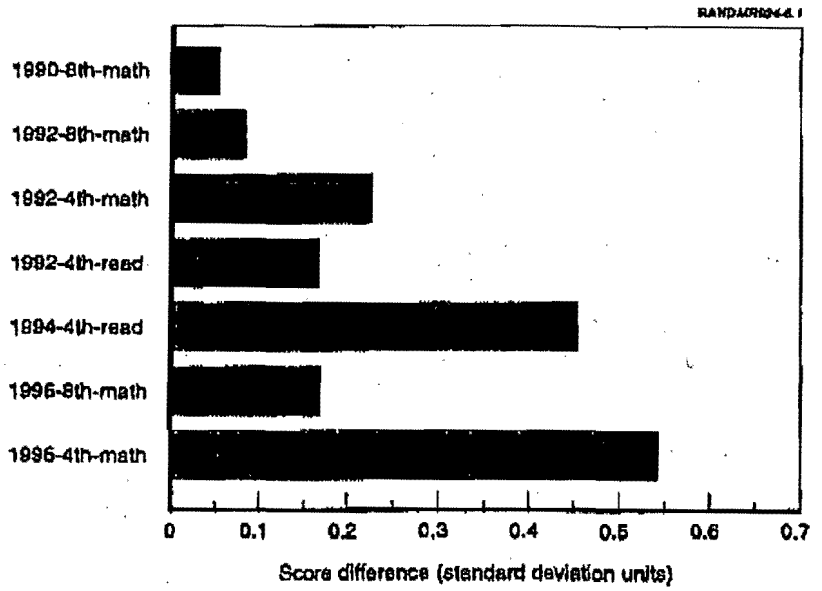

Figure 6.1—Raw Score Differences Between Texas and California Non-Hispanic White Students on Seven NAEP Tests

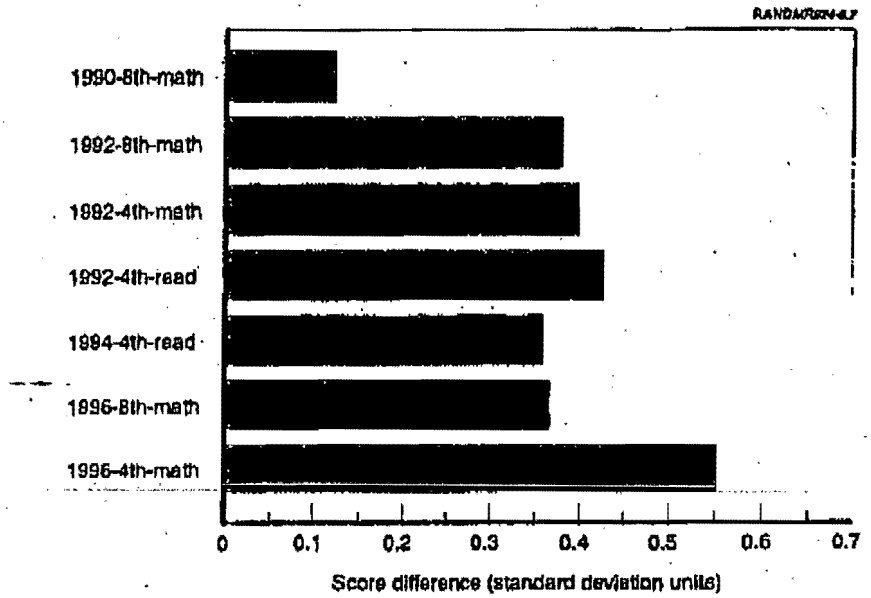

Figure 6.2—Raw Score Differences Between Texas and California Black Students on Seven NAEP Tests

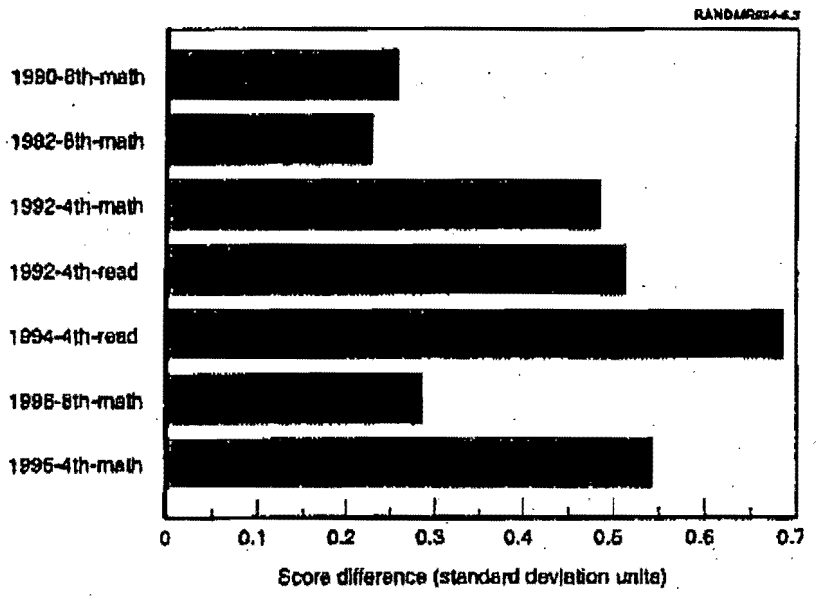

Figure 6.3—Raw Score Differences Between Texas and California Hispanic Students on Seven NAEP Tests

Interpreting State Performance in the RAND Report

The report, *Improving Student Achievement: What State NAEP Scores Tell Us*, contains three performance measures for the states that are included in the sample. The first is the ranking by the average *raw* achievement scores across the seven tests given from 1990 to 1996. This ranking averaged across all seven tests is shown in Figure 2.1 on page 14. Appendix A (Figures A.1 to A.7) shows the ranking for each of the seven tests separately.

The ranking of a state on this measure of raw scores is primarily influenced by the student's family characteristics. States that rank high usually have a combination of higher levels of parent education, higher family income, lower teen births, lower mobility, and smaller proportion of minority students. Appendix A (Figures A.8 to A.15) has the rankings by state of these family measures. For instance, Maine, North Dakota, Iowa, and New Hampshire have the highest raw scores, and also have among the lowest minority populations, above-average college parental education levels, and below-average proportions of parents without a high school diploma, medium-to-above average family income (except North Dakota), low teen births, low single-parent families, and low mobility.

Raw scores are an important measure for states, because they will determine college and labor market opportunities. However, since family characteristics is such a dominant factor in determining this measure, it is not a good measure of the quality of school systems.

The second measure we provide is the ranking of states by our estimates of the scores that students from similar families have across states. This measure eliminates the influence of family characteristics and is a measure of the influence of factors outside families on test scores. Presumably the most important non family factor is the quality of schools.

Table 6.1 gives the estimates of scores for students from similar families across states. The score difference between Texas (the highest rank) and California (the lowest rank) is about 11 percentile points. That is, students from similar families would score about 11 percentile points higher in Texas schools than California

schools. There are three groups of states that can be statistically distinguished. The top 10–12 states show statistically distinguishable higher scores than the middle group of states, and the bottom 10–12 show statistically distinguishable lower scores than the middle group. Differences in ranking of 6–8 positions are unimportant. States ranked high on this measure are more likely to have school systems that influence achievement.

The third measure is whether states are showing improvement in scores from 1990 to 1996. That measure is given for all seven tests in Table 5.3 and for math tests only in Table 5.4. Not all the states in the previous two measures are listed in these tables because we needed to have states participate in six or seven tests to measure a trend. Most states show statistically significant math gains with an average of one percentile point a year, but some states are making two percentile point a year gains while others are making little or no gain. This measure primarily picks up the effect of educational reform measures from 1985 to 1993–4. States ranked high would more likely have effective reform measures. However, it is important to realize that the effects of many reform efforts will take years before effects are expected to show up. So it may be too early to make judgments about state reforms.

The ideal situation for a state would be to have high rankings on all three measures, but no state is among the top states on all three measures. However, several states have above-average to high rankings on all three measures. These states include (in no particular order) Wisconsin, Minnesota, Maine, Connecticut, New Jersey, Indiana, and Nebraska.

Many states have high rankings on two measures, and there tends to be a pattern in this. States with high raw scores and high scores for similar students often have lower improvement trends. It may be harder to improve scores of states that already have high raw scores and high scores for students from similar families. These states with high scores but little improvement from 1990 to 1996 include Maine, North Dakota, Iowa, and Montana. The other pattern is for states to have high scores for students from similar families and high improvement, but lower raw

scores. Texas has among the highest improvement and scores for students from similar families, but because of their high minority population have lower raw scores.

Some states have low raw scores and low scores for students from similar families, but show significant improvement. These states include North Carolina, Kentucky, West Virginia, Maryland, Rhode Island, Florida, and California. Utah has relatively high raw scores, but low scores for similar students and low improvement.

In interpreting why a state is high or low on the three measures, it is important to understand what the analysis identifies as the factors influential on each measure. High raw scores reflect mainly positive family characteristics. High scores for students from similar families can reflect the level and allocation of educational resources in the state, as well as reform efforts. The measure of improvement seems to reflect mainly educational reform efforts.

The measure of scores for students from similar families reflect the level of per-pupil spending and how it is utilized. States high on this measure usually have higher per-pupil expenditures, lower pupil-teacher ratios, more participation in public prekindergarten, lower teacher turnover, and teachers who report higher levels of resources needed for teaching. Appendix A (Figures A.16 to A.23) show the state ranks on these measures. These rankings are for the period from approximately 1984 to1994—the period when the NAEP test takers were in school. So state policies could have changed since then. For instance, Utah and California had the highest pupil-teacher ratios and lowest per-pupil spending in the nation in this period, and do poorly on scores for similar students. New Jersey and Connecticut have high spending and a lower pupil-teacher ratio and do relatively well on these scores. However, there are some anomalies that require more research. Rhode Island has high spending and a low pupil-teacher ratio, but poor scores for similar students. However, for some reason Rhode Island teachers report among the lowest level of resources. So there are still some missing factors that need further research to help explain state rankings.

We will be reporting an updated version of our analysis that include the 1998 4th- and 8th-grade reading tests in a few months.