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State Capitol North, 325 Don Gaspar, Suite 200
Santa Fe, New Mexico 87501
Phone: (505) 986-4591 Fax: (505) 986-4338
<http://lesc.nmlegis.gov>

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June 15, 2010

MEMORANDUM

TO: Legislative Education Study Committee

FR: Pamela Herman, J.D.

**RE: STAFF REPORT: NATIONAL ASSESSMENT OF EDUCATIONAL
PROGRESS (NAEP) READING RESULTS FOR NEW MEXICO, 2009**

Introduction

Since the passage of the federal *No Child Left Behind Act of 2001* (NCLB), now known by its original name, the *Elementary and Secondary Education Act*, each state has been required to administer the National Assessment of Educational Progress (NAEP) to a sample of students in 4th and 8th grades in reading and mathematics in alternating years as a condition for receiving federal Title I dollars (see Background, below). Prior to the enactment of NCLB, state participation in NAEP was voluntary; New Mexico began participating in NAEP in 1990.

The National Center for Education Statistics (NCES) in the US Department of Education is responsible by law to carry out NAEP. NCES states that NAEP is the only nationally representative, continuing assessment of what American students know and can do. Consequently, the performance of students in each state can be and often is compared against that in other states and the nation.

The Legislative Education Study Committee (LESC) has heard presentations regarding NAEP since at least 2003, and has included a report on NAEP 2009 reading results on its 2010 Interim Workplan.

This report addresses the following topics:

- New Mexico NAEP reading results for 2009;
- the relationship between NAEP and state standards-based assessment scores;
- *Early Warning! Why Reading by the End of Third Grade Matters*, by the Annie E. Casey Foundation; and
- background regarding NAEP design and administration.

New Mexico NAEP Reading Results for 2009

NAEP scores are reported both on a scale from zero to 500, which shows what students know and can do, and by achievement levels of *below basic*, *basic*, *proficient*, and *advanced*, the standards established for what the test developers judge that they should know and be able to do.

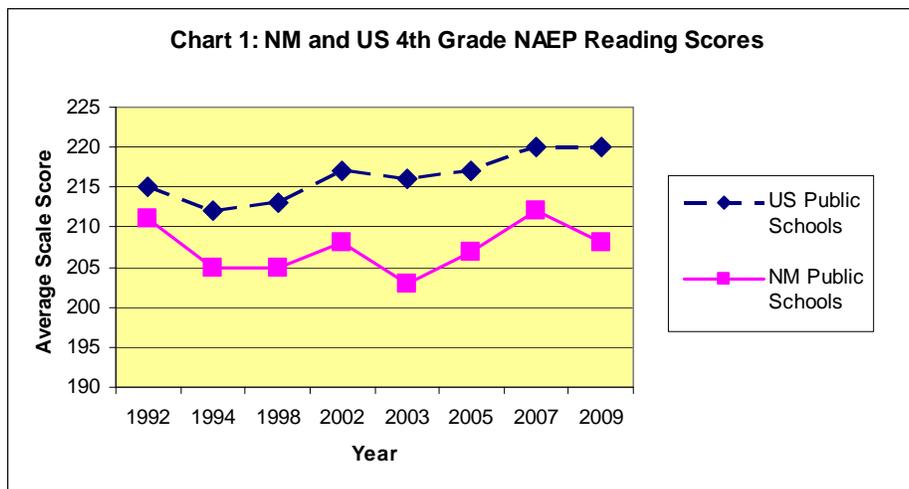
New Mexico's 4th grade reading results

In terms of achievement levels, in 2009 NCES reports that approximately 20 percent of New Mexico's 4th grade students were *proficient or advanced* on the NAEP reading assessment (see Attachment 1). This performance was:

- six percentage points lower than in 2007, when approximately 26 percent of the state's fourth graders were *proficient or advanced*;
- three points lower than in 1992, when approximately 24 percent of New Mexico fourth graders were *proficient or advanced*;
- one point higher than the low point for New Mexico fourth graders in 2007; and
- 11 points lower than fourth graders in the nation in 2009, of whom approximately 31 percent were *proficient or advanced*.

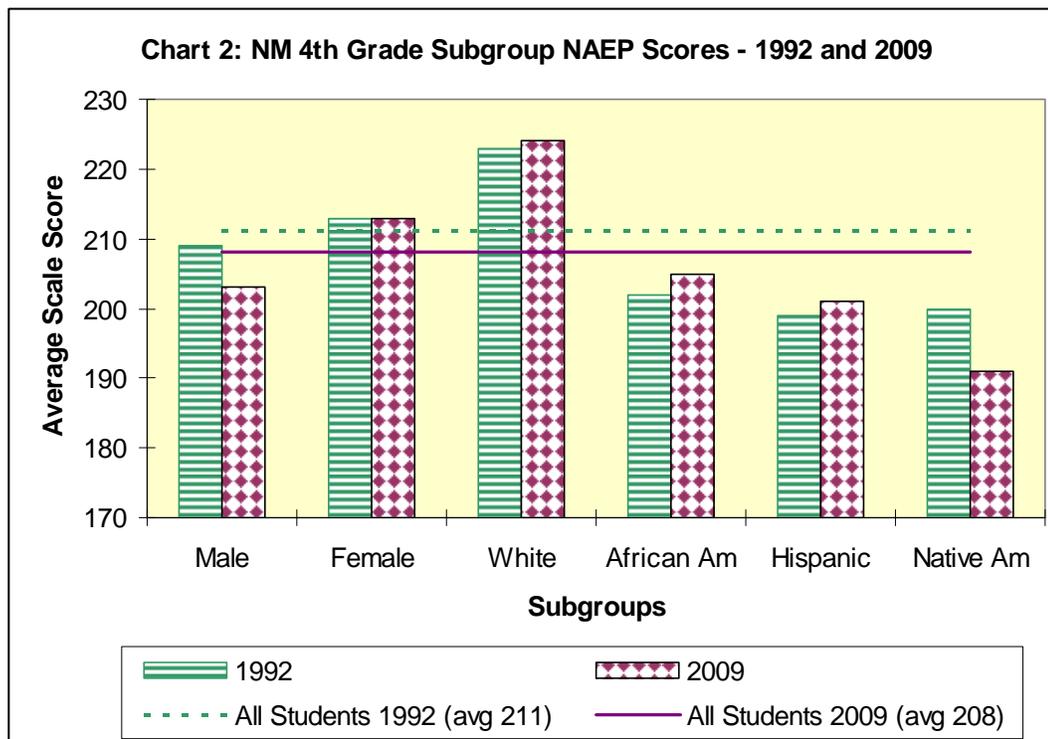
In terms of average scale scores, NCES reports that, between 1992 and 2009, New Mexico fourth graders have fluctuated in a 9 point range between 203 and 212, as follows:

- In 2009, as Chart 1 below shows, the average New Mexico scale score of 208 was:
 - three points lower than in 1992, the first year reported by NAEP;
 - four points lower than in 2007, the last time fourth graders took NAEP—a statistically significant decrease, according to NCES;
 - five points *higher* than in 2003, the low point in the state's participation in NAEP—a statistically significant difference; and
 - 12 points lower than the national average in 2009.



- In 2009, New Mexico’s 4th grade students’ average scale score was 44th in the nation:
 - lower than average scores in 43 states or jurisdictions;
 - not significantly different from those in seven states or jurisdictions; and
 - higher than the average score in one state.

- Achievement gaps by ethnicity among New Mexico fourth graders, as measured by average scale scores during the 17 years from 1992 and 2009 are persistent, as Chart 2 below shows:
 - between Hispanic and all students, the gap narrowed from 12 to seven points, but between Hispanic and white students, the decrease from 23 to 22 points was not statistically significant according to NCES;
 - between African-American and all students, the gap narrowed from nine to three points, but between African-American and white students, it went from 21 to 19 points, not a significant change;
 - between Native American and all students, the gap grew from 11 to 18 points, and between Native American and white students, it grew from 23 to 33 points; and
 - between male and all students, the gap grew slightly, from two points to five points; but between male and female students, it grew from four points to 10 points.



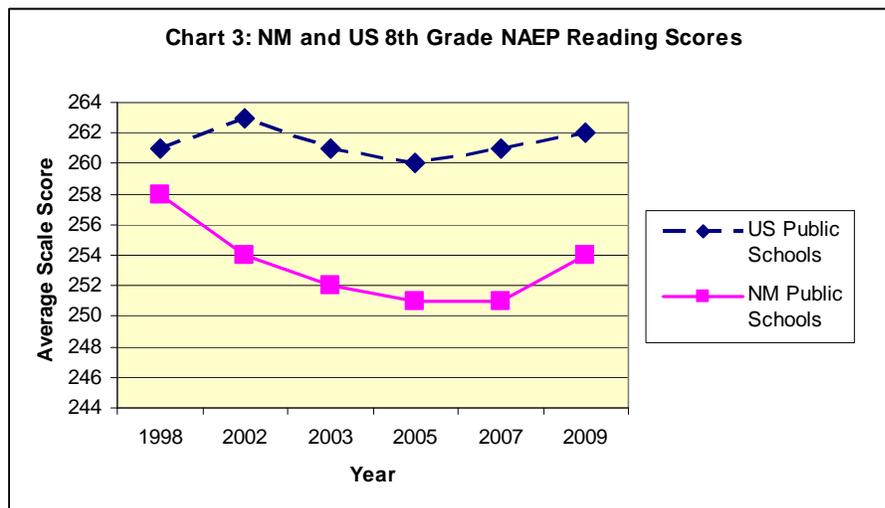
New Mexico's 8th grade reading results

In terms of achievement levels, in 2009 approximately 21 percent of New Mexico's 8th grade students scored *proficient or advanced* on the NAEP reading assessment (see Attachment 2). This level was:

- three percentage points higher than in 2005 and 2007 (when approximately 18 percent of eighth graders were *proficient or advanced*);
- four points lower than in 1992 (when approximately 24 percent were *proficient or advanced*); and
- eight points lower than eighth graders across the nation.

In terms of average scale scores, NCES reports that between 1998, when state eighth graders' scores were just three points below those of eighth graders in the nation, New Mexico students' scores dipped for several years before rising in 2009, when the gap with national achievement narrowed, as follows:

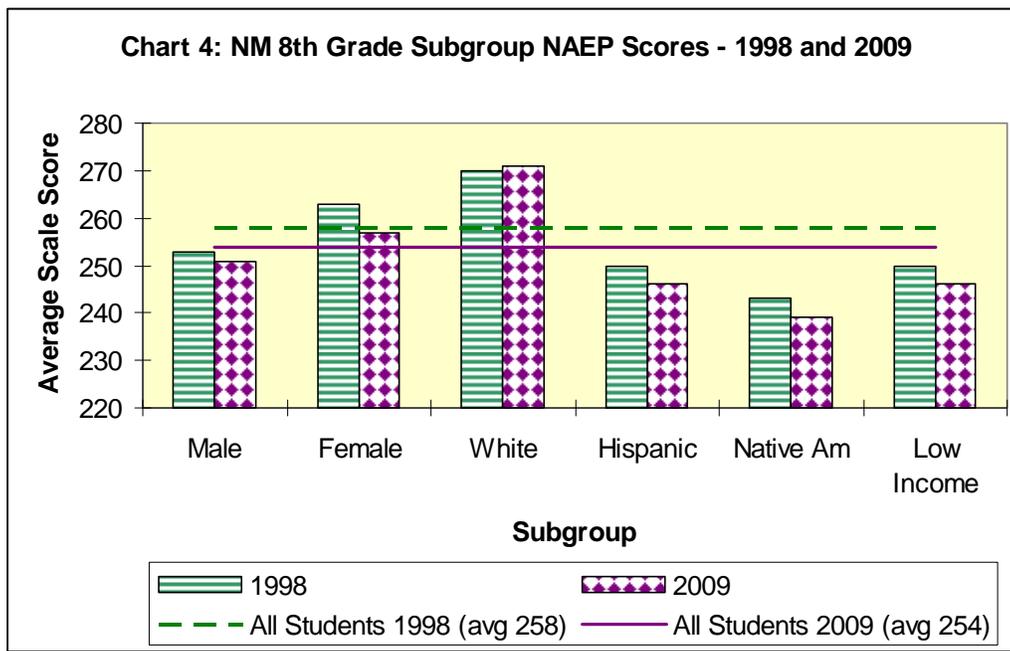
- In 2009, as Chart 3 below shows, New Mexico eighth graders' average scale score of 254 was:
 - four points lower than in 1992;
 - three points *higher* than the lowest years for the state's eighth graders, in 2005 and 2007—a statistically significant improvement, according to NCES; and
 - eight points lower than the national average score (see Attachment 2).



- In 2009, New Mexico’s 8th grade students’ average scale score was approximately 42nd in the nation:
 - lower than average scores in 41 states or jurisdictions;
 - not significantly different from those in nine states or jurisdictions; and
 - higher than in one state.

- Achievement gaps by ethnicity among New Mexico eighth graders, as measured by average scale scores in the 11 years from 1998 and 2009 changed as follows, as Chart 4 below shows:
 - between Hispanic and all students, the gap grew from eight to 12 points; and between Hispanic and white students, it grew from 20 to 24 points, although according to NCES this change is not significant;
 - between Native American and all students, the gap remained unchanged at 15 points, and between Native American and white, students it grew from 27 to 32 points;
 - between African-American students, whose average scale score in 2009 was 254, the gap with all students was eight points and the gap with white students was 25 points;¹
 - between male and all students, the gap narrowed slightly, from five points to three points; and between male and female students, it also narrowed slightly, from 10 to eight points; and
 - between low income and non-low income students, the gap grew from 15 to 22 points.

¹ African-American eighth graders are not included on Chart 4 because the group size in 1998 was not large enough to report. Therefore, NAEP trend data for New Mexican African-American eighth graders are not available.



The Relationship between NAEP and New Mexico Standards-based Assessment Scores

To receive Title I funds since the passage of NCLB, in addition to administering NAEP, every state has been required to adopt “challenging academic content standards and challenging student academic achievement standards” in reading or language arts, mathematics and science. All states are also required to assess all students annually in grades 3 through 8 and once in high school for school accountability purposes, using tests selected or designed by the state.

- NCES points out that each state selects its own tests and sets its own proficiency standards to measure accountability under NCLB. Therefore rates of student proficiency vary widely, among states in general, and between states and NAEP, for any given subject and grade.
 - For example, in 2009, of New Mexico fourth graders:
 - on the state standards-based assessment, approximately 51.7 percent of all students scored *proficient* or *advanced* according to the Public Education Department (PED); while
 - on NAEP:
 - ✓ approximately 20 percent of a small sample of that group scored *proficient* or *advanced* according to NCES (as noted above on page 2); and
 - ✓ approximately 52 percent of the sample scored at the *basic* level or above, according to NCES.
 - Similarly, in 2009, of New Mexico eighth graders:
 - on the state standards-based assessment, approximately 62.1 percent of all students scored *proficient* or *advanced*, according to PED; while
 - on NAEP:
 - ✓ approximately 21 percent of a sample of the group scored *proficient* or *advanced*, according to NCES ; and

- ✓ approximately 65 percent of the sample scored at the *basic* level or above, according to NCES.

NCES Standards Mapping Study

To determine the relationship between NAEP scores and the proficiency standards established by states for their federally required standards-based assessments, NCES conducted studies² using a methodology known as standards mapping³, based on 2007 assessment data.

The NCES study states that “while there is an essential ambiguity in attempting to place state standards on a common scale, the ranking of the NAEP score equivalents to states’ proficiency standards offers a credible indicator of the relative stringency of state standards.” Regarding states’ reading proficiency standards, the study found that:

- for either 4th or 8th grade, no state’s standard was as stringent as NAEP’s;
- among states’ 4th grade standards:
 - the Massachusetts standard was approximately equivalent to a NAEP score of 232, coming closest to the NAEP *proficient* cut-point of 238; and
 - the New Mexico standard was approximately equivalent to a NAEP score of 210 (just above the NAEP *basic* cut-point of 208), 11th highest of 48 states (see Attachment 3).
- Among states’ 8th grade standards:
 - the South Carolina standard was approximately equivalent to a NAEP score of 281, equal to the NAEP *proficient* cut-point; and
 - the New Mexico standard was approximately equivalent to a NAEP score of 248 (eight points above the NAEP *basic* cut-point), 24th of 48 states (see Attachment 3).

The results of the study shed light on the differences between data published by states regarding their students’ proficiency, and seemingly contradictory results published by NAEP.

Early Warning! Why Reading by the End of Third Grade Matters, by the Annie E. Casey Foundation

Another national report, issued by the Annie E. Casey Foundation in 2010, focused on the performance of the nation’s fourth graders on the 2009 NAEP reading assessment. The report received press attention in New Mexico because it again called attention to the low performance of the state’s 4th grade students on the NAEP reading assessment relative to students in other states and the nation. The report focused on the percentage of students in each state who scored below proficient, rather than proficient or above, and ranked New Mexico fourth graders 49th in the United States.⁴

² Go to <http://nces.ed.gov/nationsreportcard/pdf/studies/2010456.pdf> for “Mapping 2005 State Proficiency Standards Onto the NAEP Scales: 2005-2007.”

³ Standards mapping is a procedure used to place all state proficiency standards on the NAEP score scale, by finding the point on the NAEP scale at which the estimated proportion of students in each state who score above that point equals the estimated proportion of students in the state meeting the state’s own performance standards.

⁴ NCES calculates, however, that because the performance of New Mexico’s fourth graders was not significantly different from that of students in nine other low-performing states or jurisdictions, New Mexico ranks 42nd.

The report argues that “reading proficiently by the end of 3rd grade matters a lot.” The authors point to the long-term consequences of below-grade level reading achievement of students at that developmental stage, such as future earning potential, global competitiveness, and general productivity. According to the report:

- demographic realities mean that the at-risk students who are most likely to be reading below grade level come from the fastest-growing sectors of US society;
- the world economy demands a more educated work force, and grade-level reading is the key; and
- state standards-based tests (as shown in the NCES mapping study, above) mask the extent of fourth graders’ reading difficulties in many states.

The Casey report differs from some other reports concerning low reading achievement in that it seeks to identify factors that it says undermine grade-level reading proficiency, such as gaps that:

- begin at birth for children born low birth-weight, prematurely, with congenital health problems, or affected by prenatal exposure to toxic substances;
- continue between birth and kindergarten due to differences in resources and opportunities for physical, linguistic, cognitive, social, emotional, and behavioral development; and
- become achievements gap when children enter school, and persists over students’ entire school experience, because, for example:
 - not all schools implement the five essential components of reading instruction identified by the National Reading Panel;⁵
 - too many children miss too much time due to chronic absence;
 - too many lose ground over summer months; and
 - many are distracted by hunger and food insecurity, housing insecurity, family mobility, and other poverty-related stresses.

The report issues a “Call to Action,” with four recommendations to be undertaken in concert with such national initiatives as the reauthorization of the *Elementary and Secondary Education Act* and the adoption of common core state standards:

1. Develop a coherent system of early care and education that aligns, integrates, and coordinates what happens from birth through 3rd grade, including a strong commitment to implementing the recommendations of the National Reading Panel, including the five essential components of early reading instruction, in all elementary schools, so children are ready for the learning associated with 4th grade and beyond.
2. Encourage and enable parents, families, and caregivers to play their indispensable roles as co-producers of good outcomes for children, by, among other strategies, providing more support for community schools and children in foster care.

⁵ The 2001 National Reading Panel report identified five essential components of early reading instruction, based on a meta-analysis of several hundred studies; they are: phonemic awareness, phonics, vocabulary development, fluency, and comprehension.

3. Prioritize, support, and invest in results-driven initiatives to transform low-performing schools into high-quality teaching and learning environments where all children, including young English language learners, are present, engaged, and educated to high standards.
4. Find, develop, and deploy practical, scalable solutions to two of the most significant contributors to under-achievement among children from low-income families—chronic absence from school and summer-learning loss, by such means as:
 - focusing on high-quality early childhood education;
 - ensuring access to preventive health care;
 - education that responds to multiple learning styles;
 - engaging and educating families, and early family outreach;
 - incentives for excellent attendance;
 - coordination with public agencies and if necessary, legal intervention; and
 - fun after-school and summer programs with academic components that complement curricular standards.

The Casey Foundation states in its call to action that it has resolved, with philanthropic partners in “a dozen-plus states” in every region of the country, to support a decade-long campaign to “move the needle” on grade-level reading proficiency, by:

- closing the gap between children of low-income rural and urban families and their higher-income counterparts;
- increasing by 50 percent the number and proportion of students who are grade-level proficient readers by the end of 3rd grade; and
- “raising the bar” so these readers are truly proficient based on rigorous standards.

Background regarding NAEP Design and Administration

The National Assessment Governing Board (NAGB) is a bipartisan 26-member board created by Congress in 1988 and appointed by the US Secretary of Education that independently sets policy for NAEP and develops assessment frameworks and test specifications for the test.

Target Population and Sample Size

- According to NCES, NAEP is designed to test representative samples of students from each state in each subject area, rather than the entire population of students in a state or the nation. For the reading assessments, students from approximately 100 schools in each state are selected to take the test, by a statistical process designed to achieve a random but representative sample of state’s students. According to NCES, in 2009 in New Mexico:
 - approximately 2,900 4th grade students in 100 schools took the reading test; and
 - approximately 2,500 8th grade students in 100 schools took the reading test.
- Participation in NAEP is voluntary for students, schools, and school districts, but not for a state that wishes to continue receiving Title I funds. Therefore, if a sufficient

percentage of students from a participating school do not take the test, those results may not be accepted and a new school may be substituted.

Students with disabilities and English language learners

- NCES states that NAEP endeavors to assess all students selected in a sample, including those with disabilities and English language learners. The decision to exclude a student from the test is made by school staff or the parent.
- NAEP allows some testing accommodations; but they may not be the accommodations specified in a student's individual learning program. Accommodations for English language learners do not include reading tests in any language other than English. According to NCES, in 2009 in New Mexico:
 - of the 4th grade sample, approximately:
 - 26 percent was identified as students with disabilities or English language learners;
 - 7.0 percent of the sample was excluded;
 - 10 percent was assessed without accommodations; and
 - 9.0 percent was assessed with accommodations; and
 - of the 8th grade sample, approximately:
 - 21 percent was identified as students with disabilities or English language learners;
 - 6.0 percent of the sample was excluded;
 - 9.0 percent was assessed without accommodations; and
 - 7.0 percent was assessed with accommodations.

Administration of the entire set of test questions in each subject

NCES describes how it ensures reliable assessment results that include many hundreds of items covering all the specifications in NAEP frameworks, while assessing students in only 90 minutes:

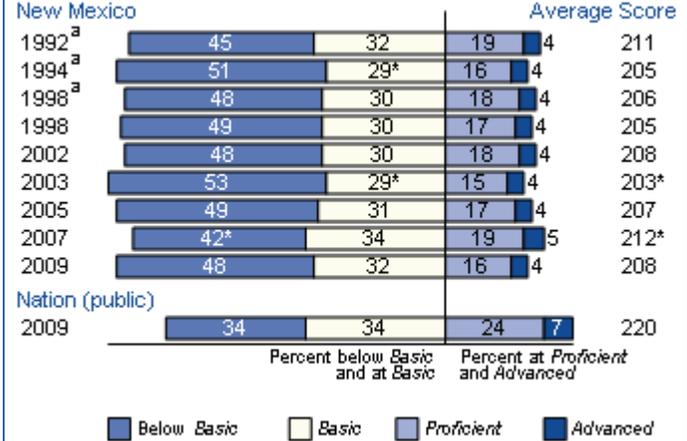
- because it would be far too time-consuming to administer all items to each student, the test items are divided into blocks and the blocks administered to different, but substantially equivalent, student samples in each state;
- each student answers questions in only one subject, and 20 to 60 varying combinations of different blocks from the item pool are used; and
- the test booklets are distributed to ensure that different “forms” are administered in approximately equal numbers to each group of students in a sample.

Additional background information about NAEP design and administration, and more NAEP assessment data, is available on the NCES website: <http://nces.ed.gov/nationsreportcard/>.

Overall Results

- In 2009, the average score of fourth-grade students in New Mexico was 208. This was lower than the average score of 220 for public school students in the nation.
- The average score for students in New Mexico in 2009 (208) was lower than their average score in 2007 (212) and was not significantly different from their average score in 1992 (211).
- In 2009, the score gap between students in New Mexico at the 75th percentile and students at the 25th percentile was 48 points. This performance gap was not significantly different from that of 1992 (47 points).
- The percentage of students in New Mexico who performed at or above the NAEP *Proficient* level was 20 percent in 2009. This percentage was smaller than that in 2007 (24 percent) and was not significantly different from that in 1992 (23 percent).
- The percentage of students in New Mexico who performed at or above the NAEP *Basic* level was 52 percent in 2009. This percentage was smaller than that in 2007 (58 percent) and was not significantly different from that in 1992 (55 percent).

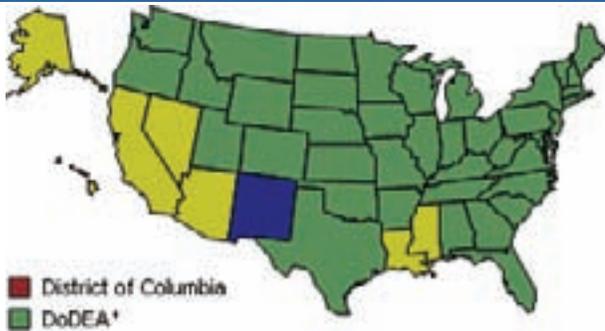
Achievement Level Percentages and Average Score Results



* Significantly different ($p < .05$) from state's results in 2009.
^a Accommodations not permitted.

NOTE: Detail may not sum to totals because of rounding.

Compare the Average Score in 2009 to Other States/Jurisdictions

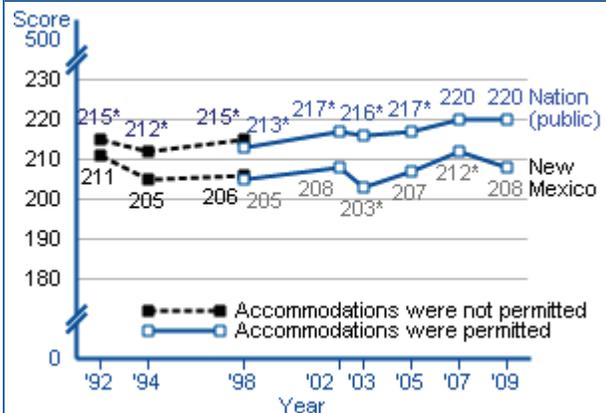


¹ Department of Defense Education Activity schools (domestic and overseas).

In 2009, the average score in **New Mexico** was

- lower than those in 43 states/jurisdictions
- higher than that in 1 state/jurisdiction
- not significantly different from that in 7 states/jurisdictions

Average Scores for State/Jurisdiction and Nation (public)



* Significantly different ($p < .05$) from 2009.

Results for Student Groups in 2009

Reporting Groups	Percent of students	Avg. score	Percentages at or above		Percent at Advanced
			Basic	Proficient	
Gender					
Male	51	203	47	17	3
Female	49	213	57	23	4
Race/Ethnicity					
White	29	224	70	35	9
Black	3	205	50	13	1
Hispanic	56	201	45	14	1
Asian/Pacific Islander	2	226	71	39	12
American Indian/Alaska Native	10	191	34	10	1
National School Lunch Program					
Eligible	67	199	43	12	1
Not eligible	33	225	71	36	9

NOTE: Detail may not sum to totals because of rounding, and because the "Information not available" category for the National School Lunch Program, which provides free/reduced-price lunches, and the "Unclassified" category for race/ethnicity are not displayed.

Score Gaps for Student Groups

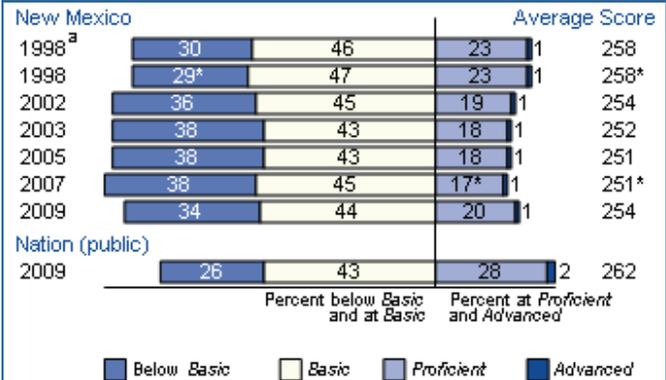
- In 2009, female students in New Mexico had an average score that was higher than that of male students.
- In 2009, Black students had an average score that was 19 points lower than that of White students. This performance gap was not significantly different from that in 1992 (21 points).
- In 2009, Hispanic students had an average score that was 22 points lower than that of White students. This performance gap was not significantly different from that in 1992 (23 points).
- In 2009, students who were eligible for free/reduced-price school lunch, an indicator of low income, had an average score that was 26 points lower than that of students who were not eligible for free/reduced-price school lunch. This performance gap was not significantly different from that in 1998 (30 points).

NOTE: Statistical comparisons are calculated on the basis of unrounded scale scores or percentages.

Overall Results

- In 2009, the average score of eighth-grade students in New Mexico was 254. This was lower than the average score of 262 for public school students in the nation.
- The average score for students in New Mexico in 2009 (254) was higher than their average score in 2007 (251) and was lower than their average score in 1998 (258).
- In 2009, the score gap between students in New Mexico at the 75th percentile and students at the 25th percentile was 45 points. This performance gap was not significantly different from that of 1998 (41 points).
- The percentage of students in New Mexico who performed at or above the NAEP *Proficient* level was 22 percent in 2009. This percentage was greater than that in 2007 (17 percent) and was not significantly different from that in 1998 (23 percent).
- The percentage of students in New Mexico who performed at or above the NAEP *Basic* level was 66 percent in 2009. This percentage was not significantly different from that in 2007 (62 percent) and was smaller than that in 1998 (71 percent).

Achievement-Level Percentages and Average Score Results



* Significantly different ($p < .05$) from state's results in 2009.
^a Accommodations not permitted.

NOTE: Detail may not sum to totals because of rounding.

Compare the Average Score in 2009 to Other States/Jurisdictions

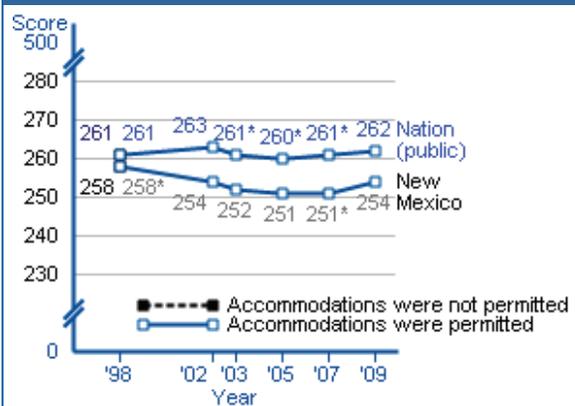


¹ Department of Defense Education Activity schools (domestic and overseas).

In 2009, the average score in **New Mexico** was

- lower than those in 41 states/jurisdictions
- higher than that in 1 state/jurisdiction
- not significantly different from that in 9 states/jurisdictions

Average Scores for State/Jurisdiction and Nation (public)



* Significantly different ($p < .05$) from 2009.

Results for Student Groups in 2009

Reporting Groups	Percent of Avg.		Percentages at or above		Percent at Advanced
	students	score	Basic	Proficient	
Gender					
Male	50	251	63	20	1
Female	50	257	68	23	2
Race/Ethnicity					
White	30	271	84	38	4
Black	3	246	56	16	1
Hispanic	57	248	58	14	#
Asian/Pacific Islander	1	‡	‡	‡	‡
American Indian/Alaska Native	9	239	50	12	1
National School Lunch Program					
Eligible	63	246	57	14	1
Not eligible	36	268	80	34	3

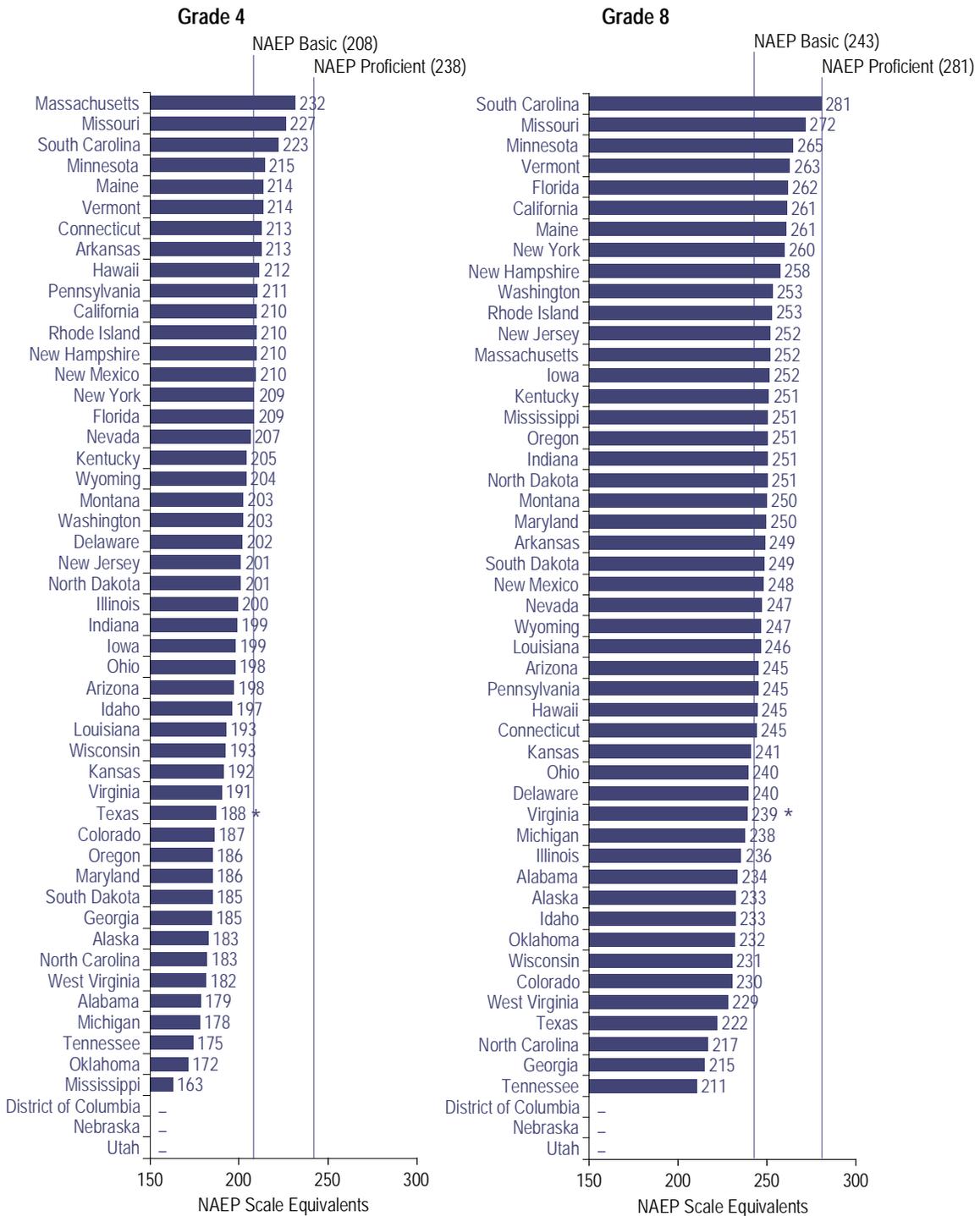
Rounds to zero. ‡ Reporting standards not met.

NOTE: Detail may not sum to totals because of rounding, and because the "Information not available" category for the National School Lunch Program, which provides free/reduced-price lunches, and the "Unclassified" category for race/ethnicity are not displayed.

Score Gaps for Student Groups

- In 2009, female students in New Mexico had an average score that was higher than that of male students.
- In 2009, Black students had an average score that was 25 points lower than that of White students. Data are not reported for Black students in 1998, because reporting standards were not met.
- In 2009, Hispanic students had an average score that was 24 points lower than that of White students. This performance gap was not significantly different from that in 1998 (20 points).
- In 2009, students who were eligible for free/reduced-price school lunch, an indicator of low income, had an average score that was 22 points lower than that of students who were not eligible for free/reduced-price school lunch. This performance gap was wider than that in 1998 (15 points).

Figure 2. NAEP scale equivalent scores for the state grades 4 and 8 reading standards for proficient performance, by state: 2007



— State assessment data not available.

* Relative error greater than .5.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Reading Assessments. U.S. Department of Education, Office of Planning, Evaluation and Policy Development, ED*facts* SY 2006-07, Washington, DC, 2008. The National Longitudinal School-Level State Assessment Score Database (NLSLSASD) 2008.