

Idaho NAEP 2013 Reading Strand Results for Grades 4 and 8¹

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The National Assessment of Educational Progress (NAEP) reading test, a comprehension test using multiple choice and constructed response items, measured four aspects of reading in two contexts on the 2013 national assessment in grades 4 and 8. Grade level results were reported for total and for each strand by demographic group.

The two NAEP reading contexts [a.k.a. strands or subscales] were:

- *Reading for literary experience* – readers explore events, characters, themes, settings, plots, actions, and the language of literary works by reading novels, short stories, poems, plays, legends, biographies, myths, and folktales.
- *Reading for information* – readers gain information to understand the world by reading materials such as magazines, newspapers, textbooks, essays, and speeches.

The four aspects of NAEP reading were:

- *Forming a general understanding* – the reader must consider the grade appropriate text as a whole and provide a global understanding of it.
- *Developing interpretation* – the reader must extend initial impressions to develop a more complete understanding of what was read.
- *Making reader/text connections* – the reader must connect information in the text with knowledge and experience.
- *Examining content and structure* – the reader must critically evaluate the text, compare and contrast, and understand the effect of such features as irony, humor, and organization.

The National Assessment Governing Board (NAGB) provides a complete framework for each assessment. A free PDF or MS Word copy of the NAEP 2013 framework for reading can be downloaded from the Board's website. [See: <http://www.nagb.org/publications/frameworks/reading/2013-reading-framework.html>]

NAEP reported 2013 reading results as scale scores and achievement level percentages. Both of these NAEP score formats, however, lack the statistical characteristics needed to make cross-strand comparisons. Each grade-level strand scale has its own mean and standard deviation; a composite of the two reading strand scale scores makes up the reading total scale score. There is no reason whatsoever to expect that a score of 220 on the literary scale has the same meaning as a 220 on the information scale.

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NAGB and the National Center for Education Statistics (NCES) believe that the NAEP achievement levels are useful for reporting trends in the educational achievement of students in the United States. Trends only, not other types of analyses whether across-strands or cross-group-within-strand comparisons. NAEP does not provide achievement level percentages for strands. Moreover, NCLB requires that NAEP achievement levels be used on a trial basis until the Commissioner of Education Statistics [NCES] determines that they are "reasonable, valid, and informative to the public." So far, no Commissioner has made such a determination, and the achievement levels remain in trial status. The achievement levels should continue to be interpreted and used with caution. [See <http://nces.ed.gov/nationsreportcard/achlevdev.asp>]

National percentile ranks (NPR) are derived from a scale score distribution using the means and standard deviations. They are "effect size" statistics. Their interpretation is straightforward. For example, an NPR = 56 means that the average student in the focus group (e.g., a demographic group) scored higher than 56 percent of the students in the reference or norm group. Whether the difference between two NPRs is large or small need not be determined by statistical tests, but can be determined by the experience and expectations of the reader.

The NPRs reported in this paper were transformed scale scores calculated in a two step procedure. First, a "z-score" was computed, i.e., the difference between the means of the norm group and the focus group, divided by the standard deviation of the norm group. Then a Microsoft Excel formula transformed the z-score to an NPR, i.e., =TRUNC(100*NORMSDIST(z-score)).

Two reading norm groups were identified for this report, one for grade 4 and one for grade 8:

- The grade 4 norm group was *all fourth-grade students in the nation's public schools who participated in the NAEP 2013 reading assessment.*
- The grade 8 norm group was *all eighth-grade students in the nation's public schools who participated in the NAEP 2013 reading assessment.*

The grade-level norm group was utilized to calculate the NPR for each of the 11 demographic groups on the total and strand scores. This comes to 33 NPRs for grade 4 reading, and 33 NPRs for grade 8 reading.

Table 1. National percentile rank (NPR) for eleven Idaho demographic groups on three reading strands (i.e., Total, Reading for Literary Experience, and Reading for Information) from the NAEP 2013 reading assessment in grade 4.

**Idaho NAEP 2013 Reading, Grade 4
National Percentile Ranks**

	Total	Literature	Information
All	48	47	49
Male	46	44	48
Female	51	51	50
White	53	52	55
Hispanic	27	29	25
NSLP-Yes	37	37	37
NSLP-No	60	58	61
SD-Yes	5	5	7
SD-No	54	54	55
LEP-Yes	8	12	7
LEP-No	50	49	51

NSLP = National School Lunch Program; free/reduced price lunch
 SD = student with disability on IEP; excludes 504 students
 LEP = limited English proficient, in US schools at least one year

Observations:

It may not be of much interest that Idaho's average fourth-grade Hispanic scored higher than 27 percent of the students in the nation's public schools in Total Reading on the fourth-grade NAEP 2013 assessment. However

It is likely noteworthy to many that Idaho's fourth-grade Hispanic students scored four (4) points higher in Reading for Literary Experience (29) than in Reading for Information (25). Or that, in contrast,

Idaho's fourth-grade White students scored three (3) points higher in Reading for Information (55) than in Reading for Literary Experience (52).

What else do you see in the reading strands?

Table 2. National percentile rank (NPR) for eleven Idaho demographic groups on three reading strands (i.e., Total, Reading for Literary Experience, and Reading for Information) from the NAEP 2013 reading assessment in grade 8

**Idaho NAEP 2013 Reading, Grade 8
National Percentile Ranks**

	Total	Literature	Information
All	54	55	54
Male	48	47	48
Female	61	62	60
White	58	58	58
Hispanic	35	38	34
NSLP-Yes	44	44	44
NSLP-No	63	63	62
SD-Yes	11	11	12
SD-No	58	58	58
LEP-Yes	9	9	11
LEP-No	56	56	56

NSLP = National School Lunch Program; free/reduced price lunch

SD = student with disability on IEP; excludes 504 students

LEP = limited English proficient, in US schools at least one year

Observations:

On eighth-grade Total Reading, Idaho's average female student scored higher than 62 percent of students in the nation's public schools group, while Idaho's average male student scored higher than only 48 percent of students in the norm group.

Idaho's eighth-grade female students scored two (2) points higher in Reading for Literary Experience (62) than in Reading for Information (60).

Idaho's eighth-grade male students scored one (1) point higher in Reading for Information (48) than in Reading for Literary Experience (47).

What else do you see in the reading strands?

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Bert Stoneberg was Idaho's NAEP State Coordinator from 2002 to 2012. Now retired he keeps busy with independent research and consulting in educational measurement and evaluation. He maintains a website to make his findings public. Visit <http://k12researchidaho.com>

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