IOWA NAEP RESULTS 1990 to 2007: THE REST OF THE STORY

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Abstract—The National Assessment of Educational Progress (NAEP) is the only nationally representative and continuing assessment of what America's students know and can do in various subject areas. While the assessment is essentially the same from year to year, subtle differences occur over time in administration and subgroup composition. These differences have affected Iowa's results.

Background—NAEP began in 1964 with a grant from the Carnegie Corporation to set up the Exploratory Committee for the Assessment of Progress in Education. The first national assessments were held in 1969. Main NAEP is the name often applied to the most frequently reported NAEP assessments. Main NAEP includes assessments in mathematics, reading, science, writing, the arts, civics, economics, geography, and U.S. history. These assessments follow the frameworks developed by the National Assessment Governing Board, and use the latest advances in assessment methodology. National assessments include all nine subjects above, assessed at grades 4, 8, and 12—although not all grades are assessed each time. Beginning in 1990 four of these subjects (mathematics, reading, science, and writing) are reported also at the state level, State NAEP, usually for grades 4 and 8. Since 2003, with the implementation of the No Child Left Behind Legislation, all states have participated in the state-level assessments at grades four and eight in reading and mathematics. Iowa participated in many of the voluntary NAEP assessments and all of the mandatory assessments (Table 1). For national assessments, students in public and private schools are assessed, but at the state level, assessment is in public schools only.

NAEP also administers the long-term trend (LTT) NAEP assessments at the national level only. These assessments are administered in a manner that is very different from that used for Main NAEP assessments. LTT reports results in mathematics and reading that present trend since the 1970s, and are given every four years. LTT results are not provided at the state level.

Table 1—Iowa Participation in State NAEP

	MATHEMATICS			READING			SCIENCE			WRITING	
	GRADE 4	GRADE 8	GRADE 12	GRADE 4	GRADE 8	GRADE 12	GRADE 4	GRADE 8	GRADE 12	GRADE 4	GRADE 8
1990[n]		■									
1992[n]	■	■		■							
1994[n]				■							
1996[n]	■	■						■			
1998				■							
2000	■						■				
2002				■						■	
2003	■	■		■	■						
2005	■	■		■	■						
2007	■	■		■	■						■
2009	■	■	■	■	■	■	■	■	■	■	

■ Iowa schools participated and received/will receive state level results.
[n] Accommodations were not permitted for this assessment.

The perception held by some stakeholders is that Iowa students scored high on NAEP in the early years, and more recently, Iowa students have not faired as well. This paper reviews changes in State NAEP for Iowa from 1990 through 2007. In addition, Iowa and national results from 1996 through 2007 are discussed. The results of the 2009 assessment will not be available until fall 2009. Due to the greater availability of demographic variables than in the early years 1996 was chosen as the comparison year. While equating has been completed to allow scores over the years to be compared, differences in the state NAEP assessment from 1996 to 2007 exist. The changes include framework, administration practices, and sample assessed, as well as calculation of the national results (Jones and Olkin, 2004). The focus of this paper is on mathematics in grade 8 and reading in grade 4; however changes in other grades and subjects are also noted.

Method—This paper includes both quantitative and qualitative results; however the focus is on a post-hoc analysis of the quantitative measures. NAEP results for mathematics and reading from 1990 through 2007 were examined using the NAEP Data Explorer. Student demographics including race ethnicity, students with disabilities (SD) status, English language learner (ELL) status, and student lunch status were the primary independent variables of interest. The dependent variable was performance on the NAEP assessment. Because the subgroups changed significantly from 1996 to 2007, growth curves were examined for any influence of reversal paradox (Simpson, 1951; Blyth, 1972). A historical review of NAEP administration and NAEP frameworks from 1996 and 2007 is included.

Results—

Mathematics Framework

Like the assessment frameworks used for the 1990–2003 assessments, the 2005 and 2007 NAEP mathematics framework revision describes five mathematics content areas:

- number properties and operations,
- measurement,
- geometry,
- data analysis and probability, and
- algebra.

The NAEP 1996 and NAEP 2007 frameworks differ slightly in the amount of emphasis given to each content strand for a given grade (Table 2). For example, in 1996 in grade eight 25 percent of the assessment was planned to assess number properties and operations and 25 percent was algebra. In the 2007 assessment, this had changed to 20 percent on number properties and operations and 30 percent algebra.

Table 2—Minimum Percentage Distribution of Items by Grade and Content Strand

	GRADE 4		GRADE 8		GRADE 12	
CONTENT STRAND	1996	2007	1996	2007	1996	2007
Number Properties and Operations	40%	40%	25%	20%	20%	10%
Measuremen	20%	20%	15%	**15%**	15%	30%
Geometry	15%	15%	20%	20%	20%	
Data Analysis and Probability	10%	10%	15%	15%	20%	25%
Algebra	15%	15%	25%	30%	25%	35%

SOURCE: U.S. Department of Education, National Assessment Governing Board, Mathematics Framework for the 2007 National Assessment of Educational Progress, 2006.

Reading Framework

The reading framework distribution did not change from the beginning of State NAEP to 2007. However, a new framework was developed for the 2009 assessment.

Table 3—Minimum Percentage Distribution of Items by Grade and Content Strand

CONTENT STRAND	GRADE 4	GRADE 8	GRADE 12
Literary Experience	55%	40%	35%
To Be Informed	45%	40%	45%
To Perform a Task	No scale	20%	20%

SOURCE: U.S. Department of Education, National Assessment Governing Board, Reading Framework for the 2007 National Assessment of Educational Progress, 2006.

Administration Practices

NAEP assessments prior to 2002 were administered by school personnel in the selected schools. The staff members chosen to administer the assessment received one day of training. For assessments in 2002 and later, the administration was completed by a subcontractor to the United States Department of Education, Westat. Many of the Westat assessment administrators are retired educators.

Inclusion of Special Education Students and English Language Learners

Prior to 1996, accommodations for special education students were not allowed on Main NAEP. During 1996 and again in 2000, NAEP was administered to a sample with accommodations and a sample without accommodations. The effects of the accommodations were examined to determine the extent of the effect on state results. Accommodations have been permitted on every administration since. This has allowed NAEP to include additional special education students (Table 4). The change in Iowa went from having very few special education students included in the NAEP 1996 administration to having special education students comprise 11 percent and 13 percent (grade 4 and grade 8 respectively) of the assessed students in 2007. In 2007, Iowa had 4 percent more special education students in the assessed group than did the Nation at the eighth grade level.

At the same time, the number of English language learner students has increased in both Iowa and the nation. In Iowa, 5 percent of the assessed students in fourth grade mathematics in 2007 were ELL. In the Nation 10 percent were ELL. Both were an increase from less than 1 percent in 1996.

Table 4—Percent of Special Education (SD) and English Language Learner (ELL) Students Administered the NAEP

	GRADE 4				GRADE 8			
MATHEMATICS	1996		2007		1996		2007	
	Iowa	Nation	Iowa	Nation	Iowa	Nation	Iowa	Nation
Special Education	‡	‡	11%	12%	‡	‡	13%	9%
English Language Learners	‡	‡	5%	10%	‡	‡	3%	6%

‡ Reporting requirements not met
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Mathematics Assessment.

Other jurisdictions include more or less special education and English language learner students in their NAEP assessment than Iowa does. However, the percent of special education students included does not correlate significantly with the mean score of the state (i.e., mathematics 8, $r = 0.14$, $p = 0.328$; reading 4, $r = 0.23$, $p = 0.106$).

Changing Population

Similar to the Nation as a whole, Iowa's student population is becoming poorer and more diverse (Table 5). Iowa's percentage of minority and poor students increased during the period from 1996 to 2007, but the Nation as a whole still has a higher percentage of minority and poor students than Iowa does.

Table 5—Percent of Students Assessed by Subgroup

	Grade 4				Grade 8			
	1996		2007		1996		2007	
	Iowa	Nation	Iowa	Nation	Iowa	Nation	Iowa	Nation
White	93%	71%	86%	55%	95%	70%	88%	58%
Black	3%	17%	5%	17%	2%	16%	4%	17%
Hispanic	3%	9%	6%	21%	1%	9%	6%	19%
Asian	1%	3%	2%	5%	1%	‡	2%	5%
Low SES*	31%	34%	34%	46%	19%	30%	30%	41%

‡ Reporting requirements not met.
*Eligible for Free or Reduced Lunch.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Mathematics Assessment.

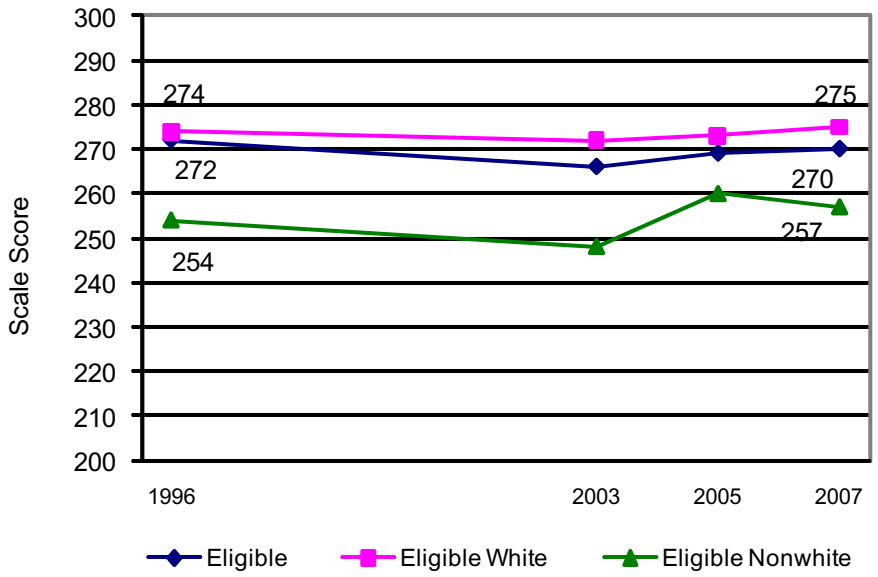
Calculation of National Results

Before NCLB was adopted, states could opt in (or out) of any state NAEP assessment. For 2003 and later years, all states participated in State NAEP in reading and mathematics in grades 4 and 8. The other State NAEP assessments, writing, and science continue to be optional. In 2003 and all years prior, the NAEP national sample was drawn using a sampling procedure separate from the state samples. For 2005 and later, the national sample is a weighted sample that includes the students in the state samples. This increased the number of students included in the calculation of the national results. Due to the large sample size, even small changes are statistically significant.

Iowa Results

Iowa State NAEP scores have generally increased since 1996. During the same period, most other states have also increased, some at a greater rate than Iowa. Many of the results are confounded by changes in the composition of the subgroups. For example, in the grade 8 mathematics assessment, the percent of students eligible for free or reduced price lunch changed from 19 percent (1996) to 30 percent (2007). The subgroup of not eligible students improved significantly, but the subgroup of eligible students did not (Figure 1). For the group as a whole, there was no significant change. Further examination of the data shows that both the eligible white students and the eligible nonwhite students improved, but the eligible students did not. None of these changes were significantly different when 1996 scores are compared to 2007 scores. This discrepancy is the result of Simpson's paradox (also called reversal paradox and amalgamation paradox), a statistical paradox wherein the successes of groups seem reversed when the groups are combined (Simpson, 1951; Blyth, 1972). This result is often encountered in social and medical science statistics, and occurs when frequency data are hastily given causal interpretation. This is not uncommon when the make-up of groups is changing notably. In 1996, white students made up 90 percent of the eligible group. In 2007, white students comprised 73 percent of the eligible group.

Figure 1—Example of Simpson's Paradox: Iowa Grade 8 Mathematics NAEP Results for Eligible Students



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Mathematics Assessment.

Comparisons with the Nation

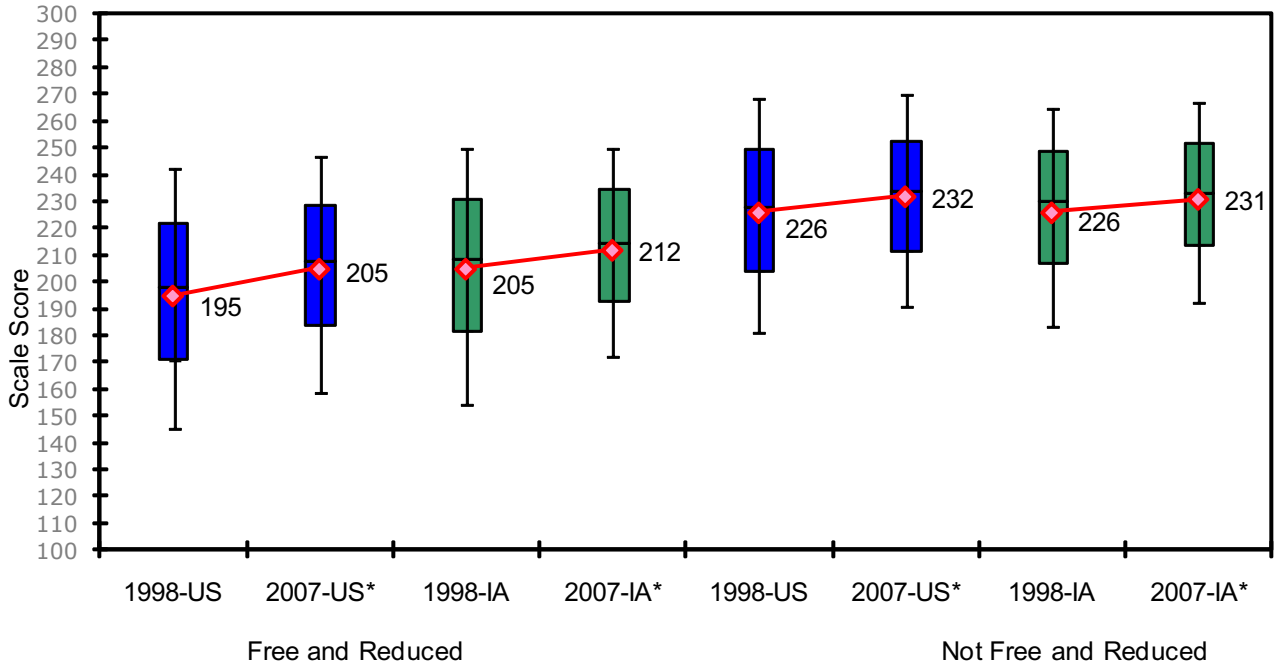
The following chart examines the relationship between Iowa's score on NAEP for all students and for selected subgroups of students as compared to the nation. Boxes marked ***higher*** show assessments where Iowa scored significantly higher than the nation. Those marked ***same*** are assessments where Iowa and the nation had no significant difference. The boxes marked ***lower*** are the assessments that Iowa had a significantly lower score than the nation as a whole.

Table 6—Comparison of Iowa and the Nation on NAEP 1996 and 2007

	MATHEMATICS 4		MATHEMATICS 8		READING 4		READING 8	
	1996	2007	1996	2007	1998	2007	1996	2007
All students	higher	higher	higher	higher	higher	higher	NA	higher
Not eligible	higher	same	higher	same	higher	same	NA	higher
Eligible	higher	higher	higher	higher	higher	higher	NA	higher
Not SD	NA	higher	NA	higher	NA	same	NA	higher
SD	NA	same	NA	same	NA	lower	NA	same
White	higher	lower	higher	lower	higher	lower	NA	same
Black	higher	higher	higher	same	higher	same	NA	same
Hispanic	NA	higher	NA	same	NA	same	NA	same
Asian/Pacific Islanders	NA	NA	NA	NA	NA	same	NA	NA
American Indian / Alaska Native	NA	NA	NA	NA	NA	NA	NA	NA

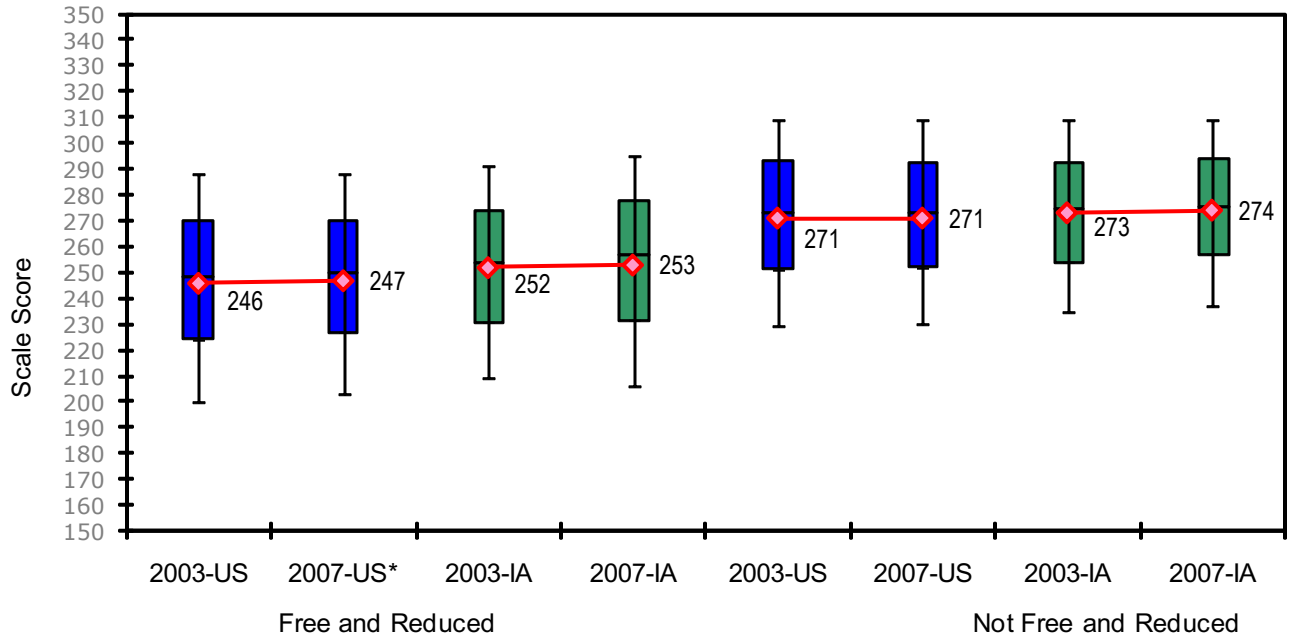
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Mathematics Assessment.
U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Reading Assessment.

Figure 2—Comparison of Iowa and the Nation on NAEP Grade 4 Reading 1998 and 2007



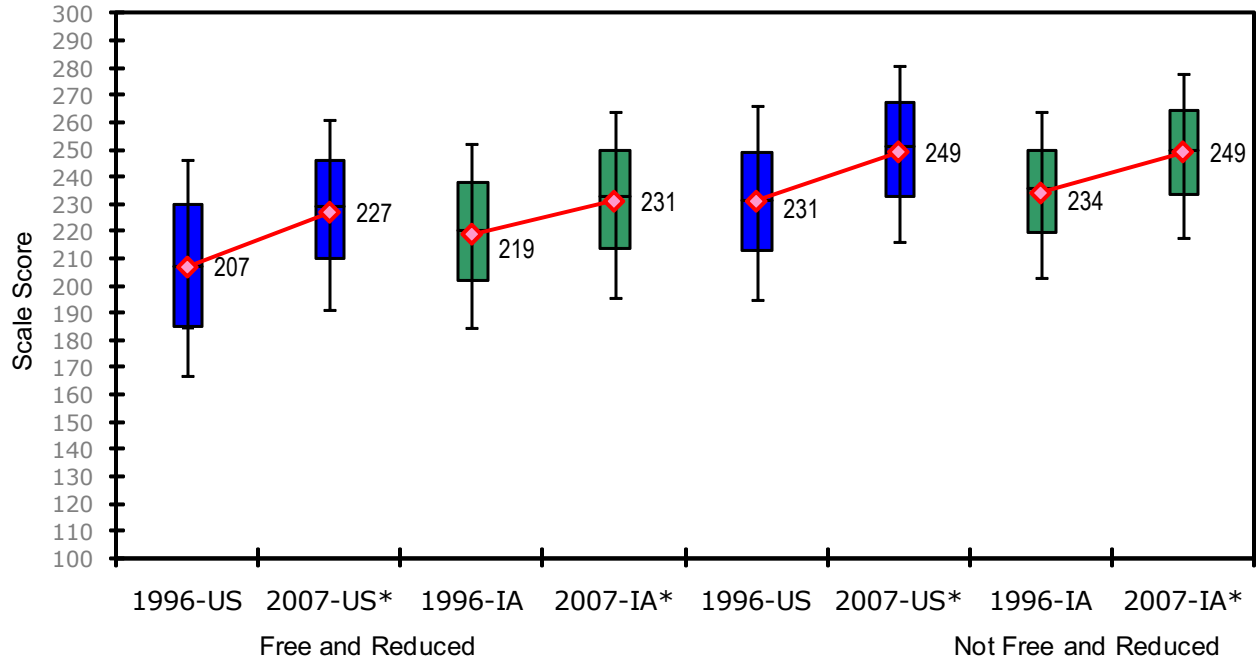
*Differences between 1998 and 2007 significant at .05.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Reading Assessment.

Figure 3—Comparison of Iowa and the Nation on NAEP Grade 8 Reading 2003 and 2007



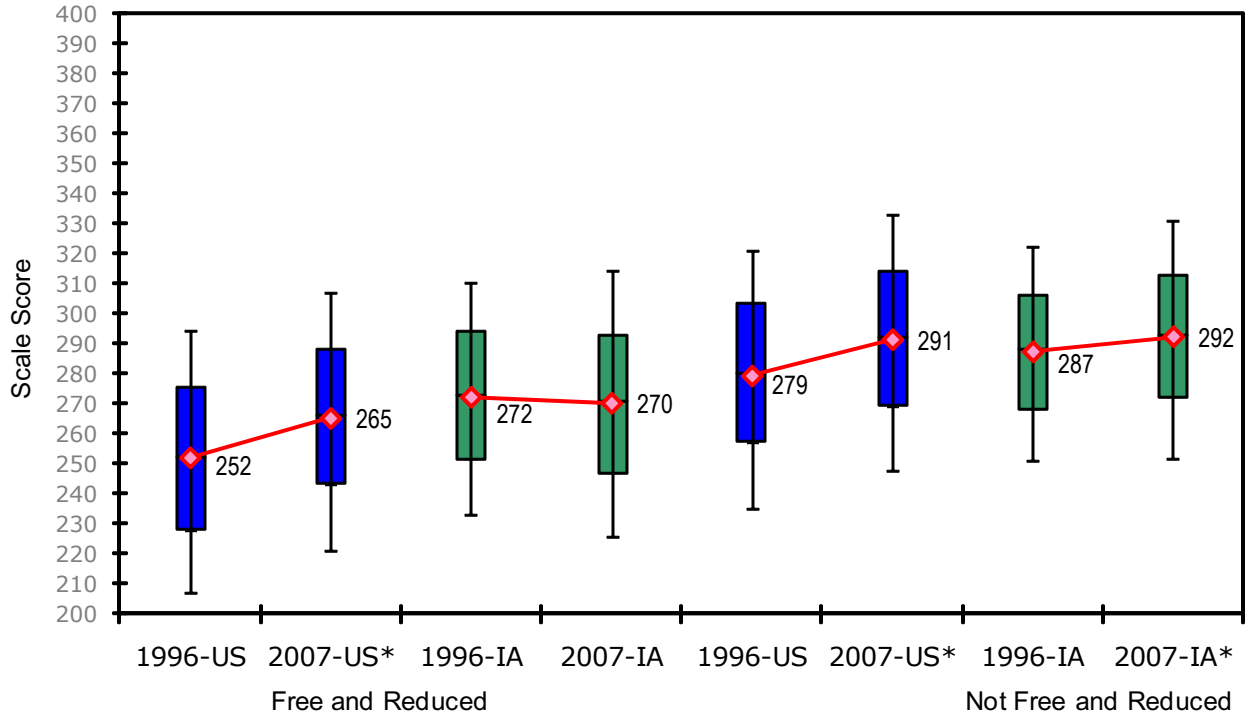
*Differences between 2003 and 2007 significant at .05.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Reading Assessment.

Figure 4—Comparison of Iowa and the Nation on NAEP Grade 4 Mathematics 1996 and 2007



*Differences between 1996 and 2007 significant at .05.
Note that accommodations were allowed in 2007, but not in 1996.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Mathematics Assessment.

Figure 5—Comparison of Iowa and the Nation on NAEP Grade 8 Mathematics 1996 and 2007



*Differences between 1996 and 2007 significant at .05.
Note that accommodations were allowed in 2007, but not in 1996.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Mathematics Assessment.

Significance/Impact—Iowa students continue to score above the nation in reading and mathematics at grades 4 and 8. However, subgroup comparisons are not so consistent (Table 6). Comparisons of Iowa and the nation for all and for white students not eligible for free or reduced price lunch and not special education or English language learners with similar students in other states are shown in the appendix. In some subjects, Iowa students have moved from ranking statistically above the nation at the mean score to statistically the same. Note that while Iowa's overall scores significantly increased in some subjects (mathematics and reading at grade 4) and have remained steady in other subjects (mathematics and reading at grade 8), students in some other jurisdictions have significantly increased their scores.

Results of the NAEP assessment are often more complex than can be communicated using a single mean score. NAEP results are reported in the public press and quoted by legislators, but often only a portion of the results are reported leaving the reader looking for the rest of the story. Two reasons for Iowa's NAEP results became apparent in this analysis. First, the population change has had an effect on Iowa's results. Second, Iowa students have made gains, but not as rapidly as in other states. The reason for this is not clear. Many other states have aligned their standards with the NAEP assessment, but Iowa has not. Many other states include constructed response items in their state assessment, but Iowa does not.

REFERENCES

Blyth, C.R. (1972). On Simpson's Paradox and the Sure-Thing Principle. Journal of the American Statistical Association, 67 (338): 364–366.

Jones, L.V. & Olkin, I. (2004). The Nation's Report Card: Evolution and Perspectives. Bloomington, IN: Phil Delta Kappa Educational Foundation.

Simpson, E.H. (1951). The Interpretation of Interaction in Contingency Tables. Journal of the Royal Statistical Society, Ser. B 13: 238–241.

APPENDIX

Key to following significant difference maps:

COLOR	GRAYSCALE	
Blue	Black	Iowa
Green	Medium Gray	Has a higher average scale score than Iowa
Tan/Yellow	Light Gray	Is not significantly different from the focal Iowa
Orange/Red	Dark Gray	Has a lower average scale score than the focal Iowa
Gray	White	Sample size is insufficient to perform a reliable estimate

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Figure 1A—Iowa compared to the Nation: Grade 8 Reading

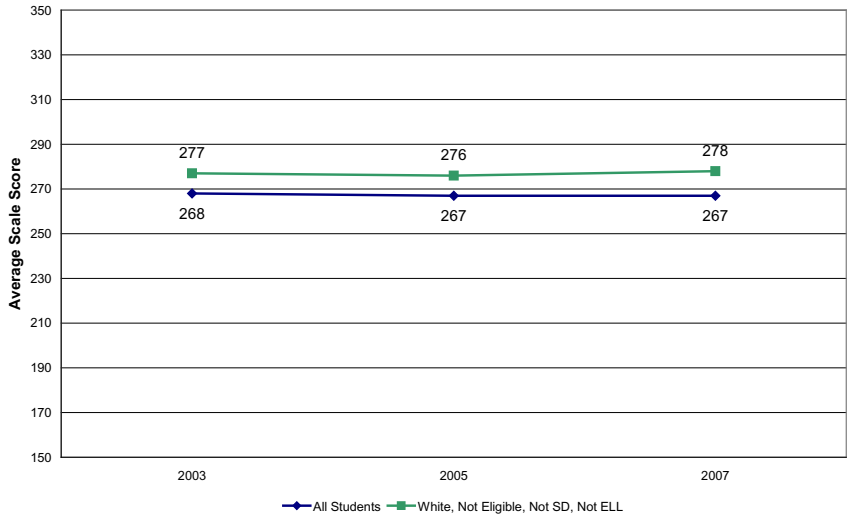
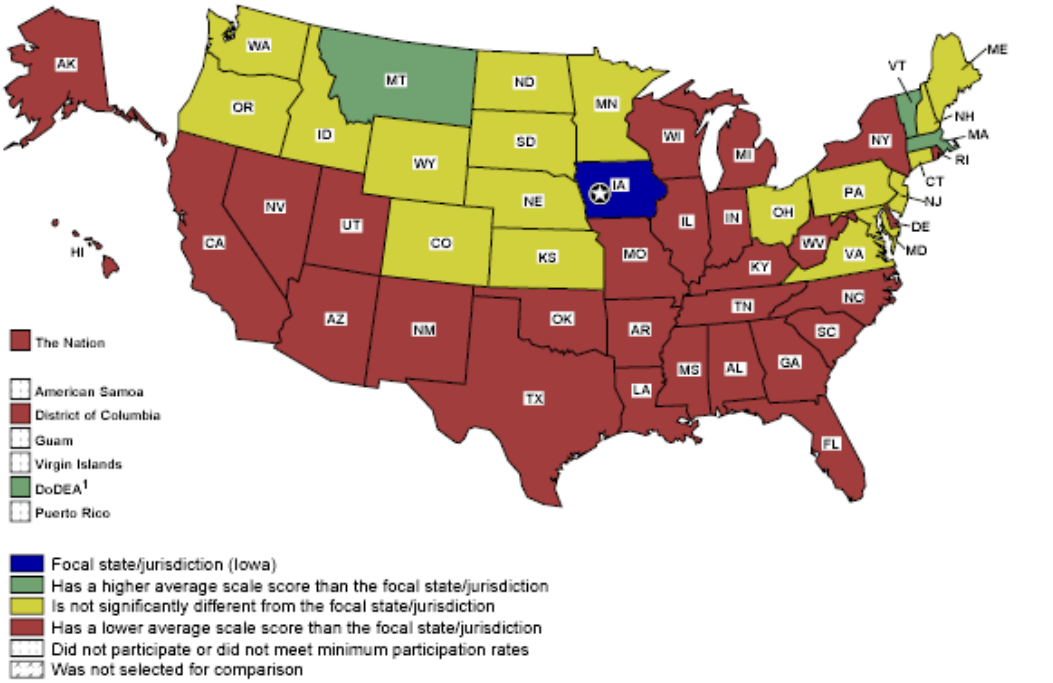
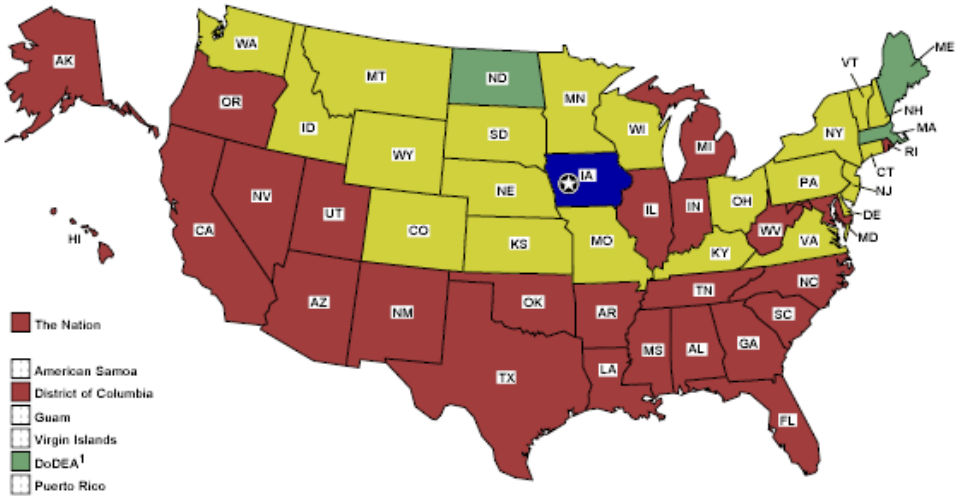


Figure 2A—2007 Iowa Grade 8 Reading All Students: Standard Score 267 (National Public 261)



[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Reading Assessments.

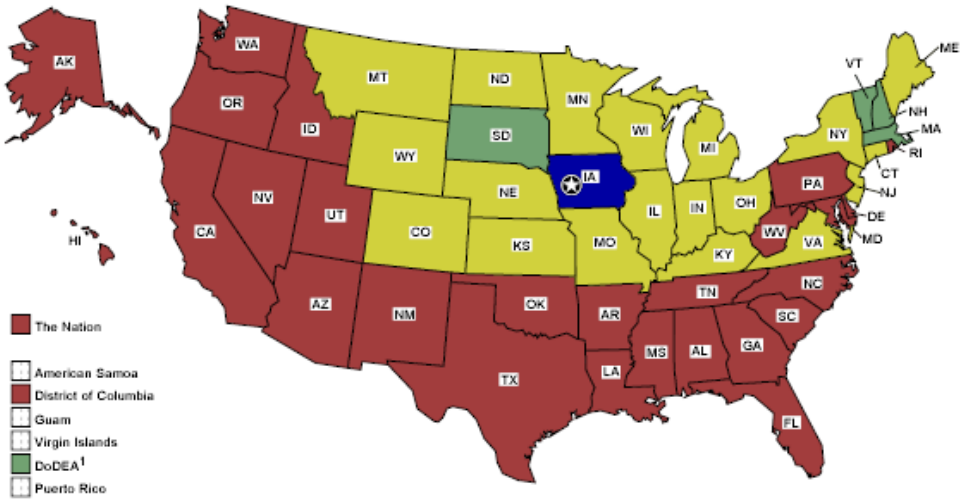
Figure 3A—2005 Iowa Grade 8 Reading All Students: Standard Score 267 (National Public 267)



Focal state/jurisdiction (Iowa)
Has a higher average scale score than the focal state/jurisdiction
Is not significantly different from the focal state/jurisdiction
Has a lower average scale score than the focal state/jurisdiction
Did not participate or did not meet minimum participation rates
Was not selected for comparison

[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Reading Assessments.

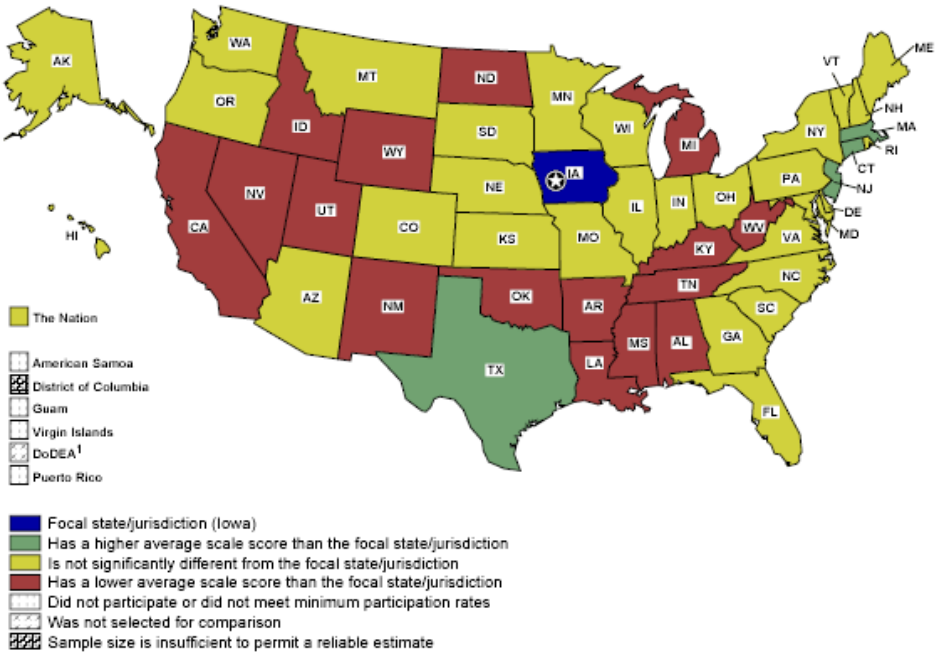
Figure 4A—2003 Iowa Grade 8 Reading All Students: Standard Score 268 (National Public 261)



Focal state/jurisdiction (Iowa)
Has a higher average scale score than the focal state/jurisdiction
Is not significantly different from the focal state/jurisdiction
Has a lower average scale score than the focal state/jurisdiction
Did not participate or did not meet minimum participation rates
Was not selected for comparison

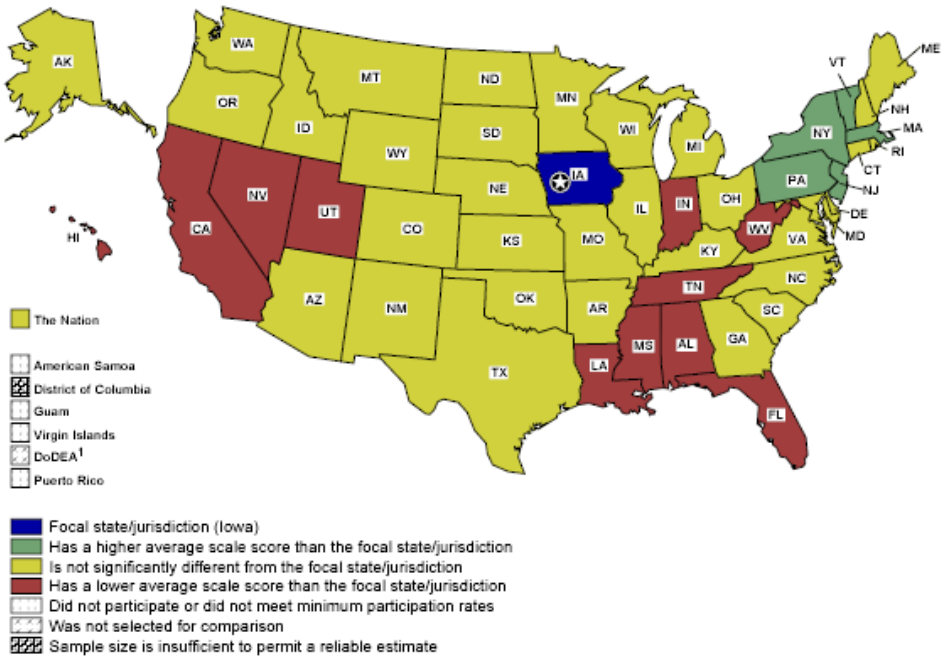
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Assessments.

Figure 5A— White - Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 278 (National Public 277)



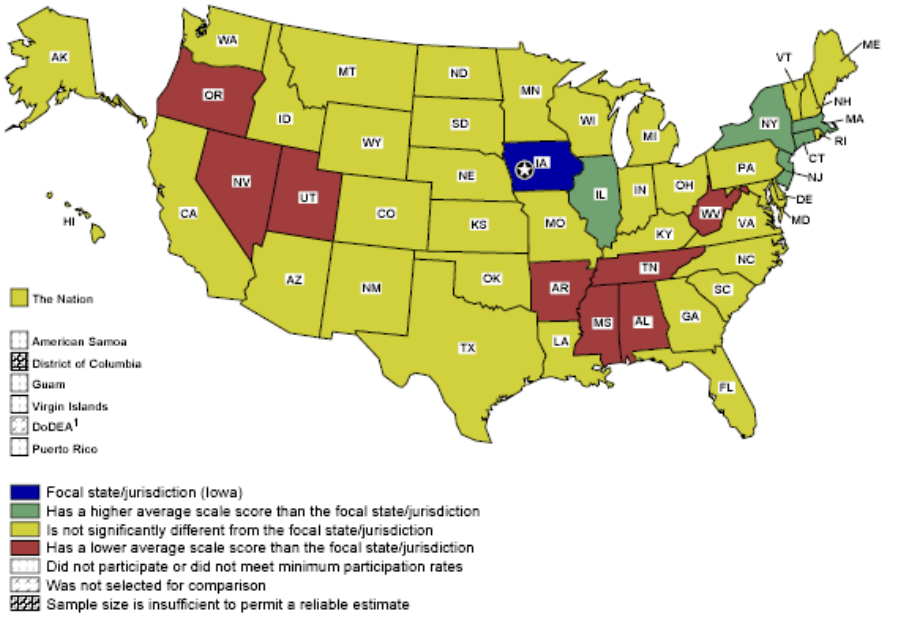
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Reading Assessments.

Figure 6A—2005 Iowa Grade 8 Reading White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 276 (National Public 276)



[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Reading Assessments.

Figure 7A—2003 Iowa Grade 8 Reading White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 277 (National Public 277)



[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Assessments.

Figure 8A—Iowa Compared to the Nation: Grade 8 Mathematics

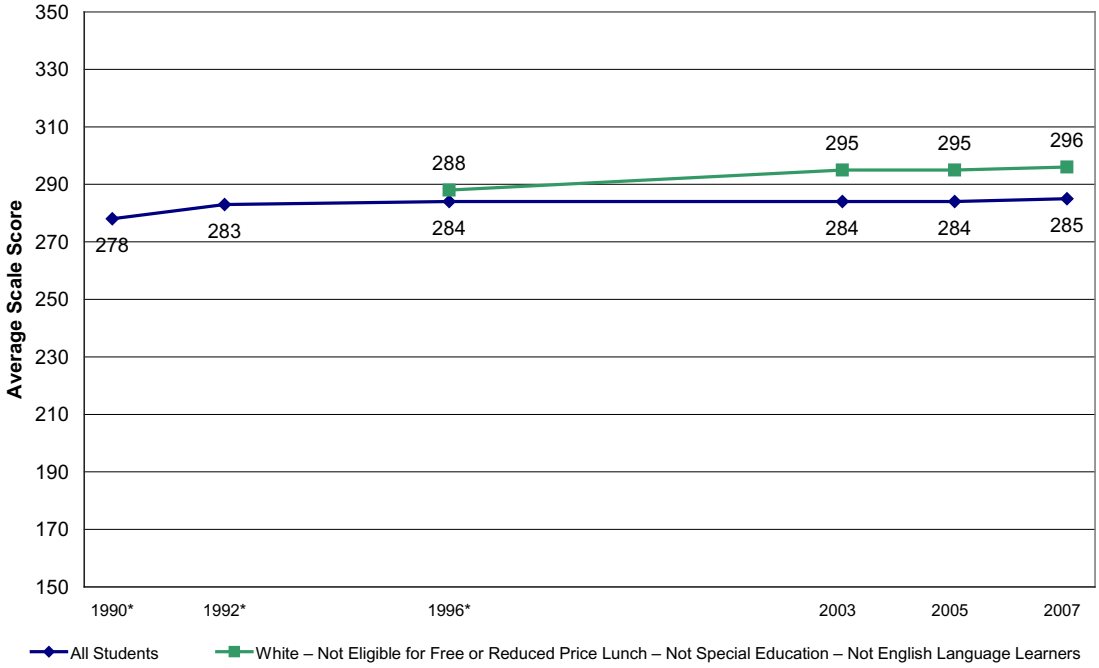
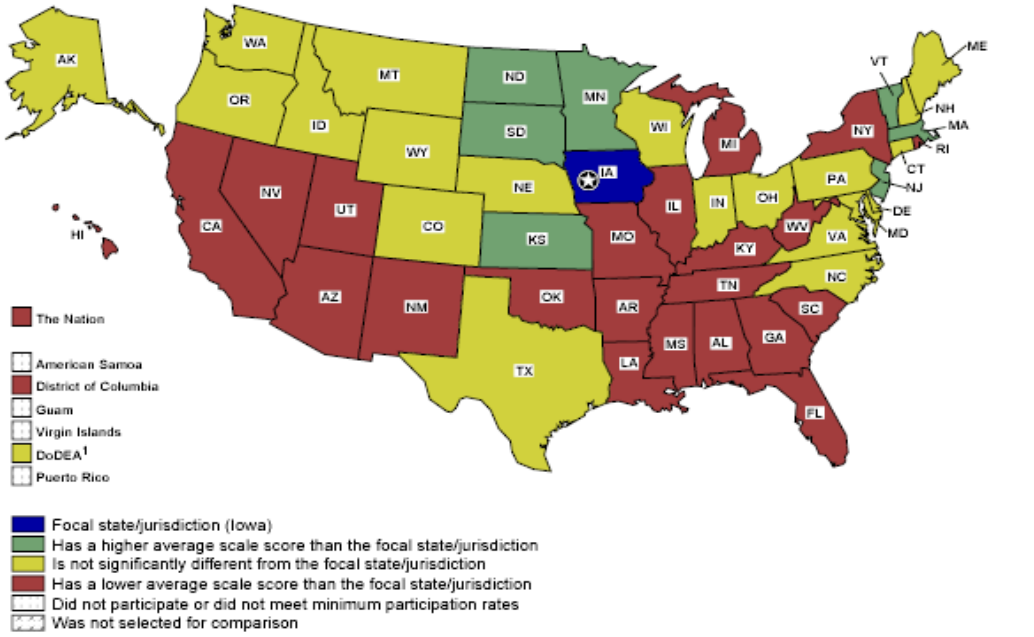
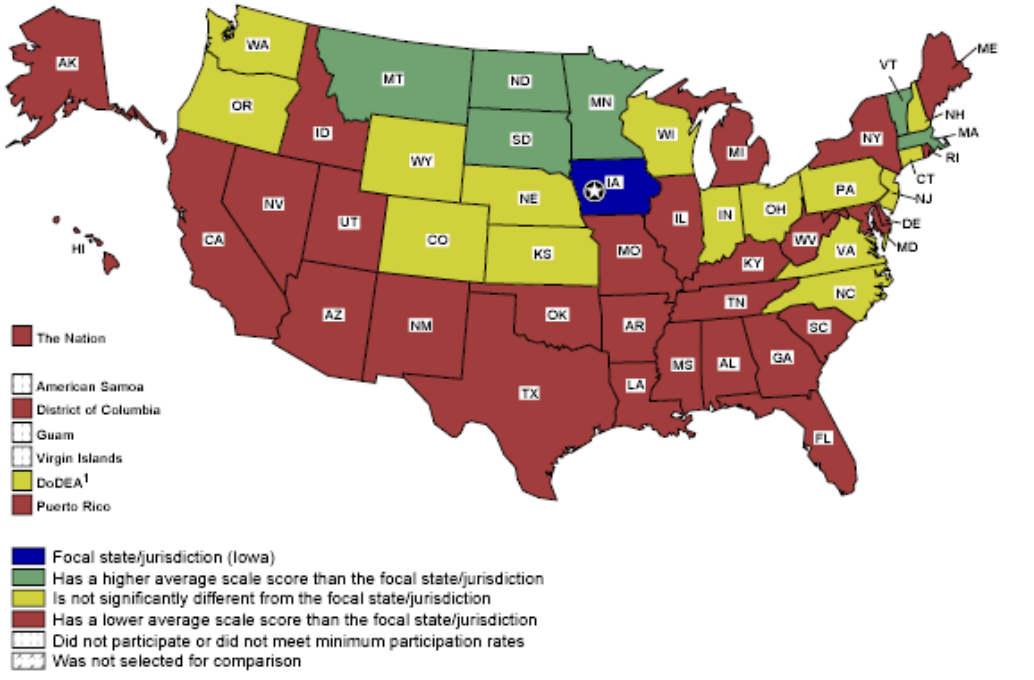


Figure 9A—2007 Iowa Grade 8 Mathematics All Students: Standard Score 285 (National Public 280)



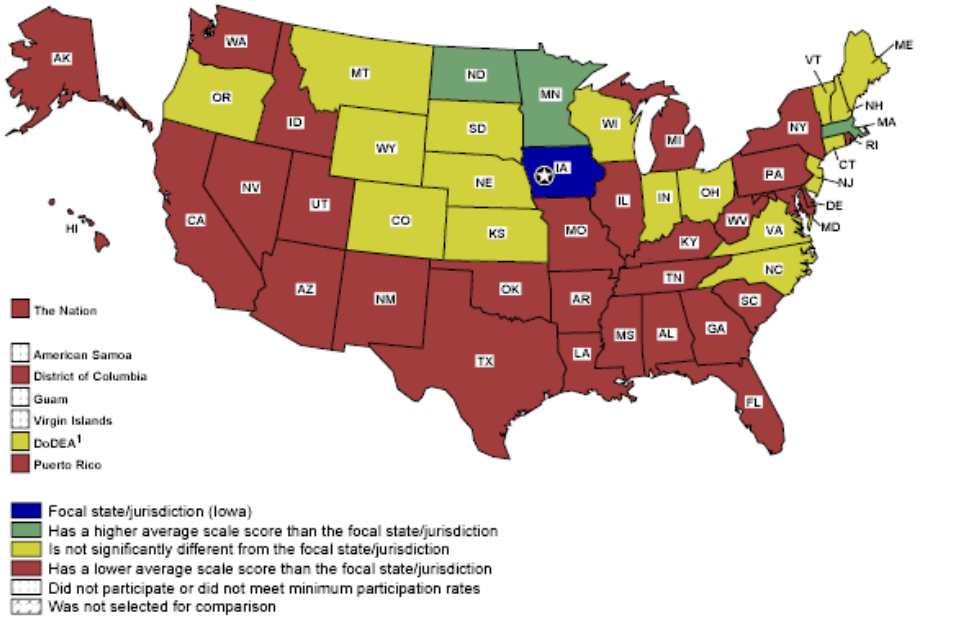
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Mathematics Assessments.

Figure 10A—2005 Iowa Grade 8 Mathematics All Students: Standard Score 284 (National Public 278)



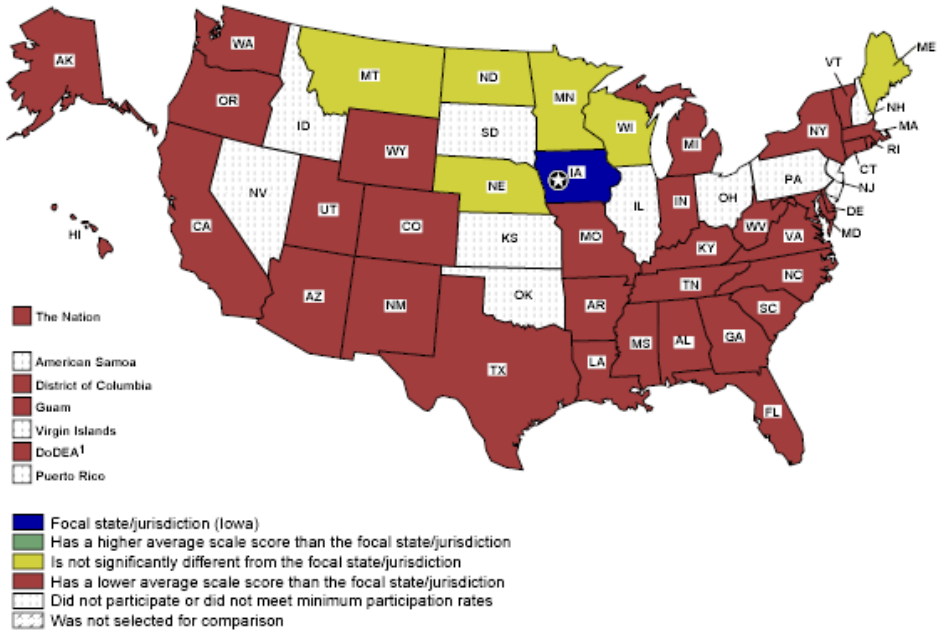
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Mathematics Assessments.

Figure 11A—2003 Iowa Grade 8 Mathematics All Students: Standard Score 284 (National Public 276)



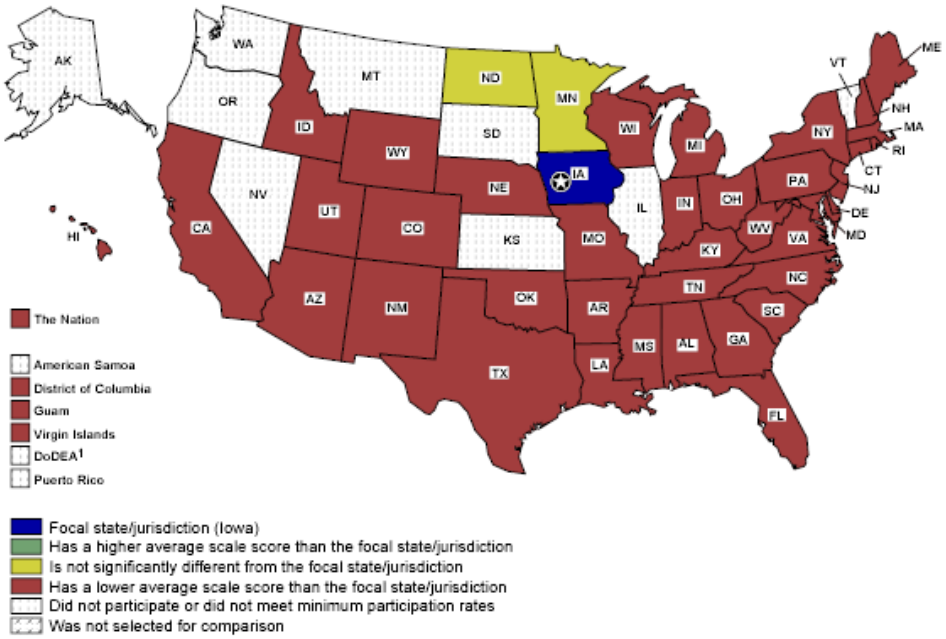
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessments.

Figure 12A—1996 Iowa Grade 8 Mathematics All Students: Standard Score 284 (National Public 271)



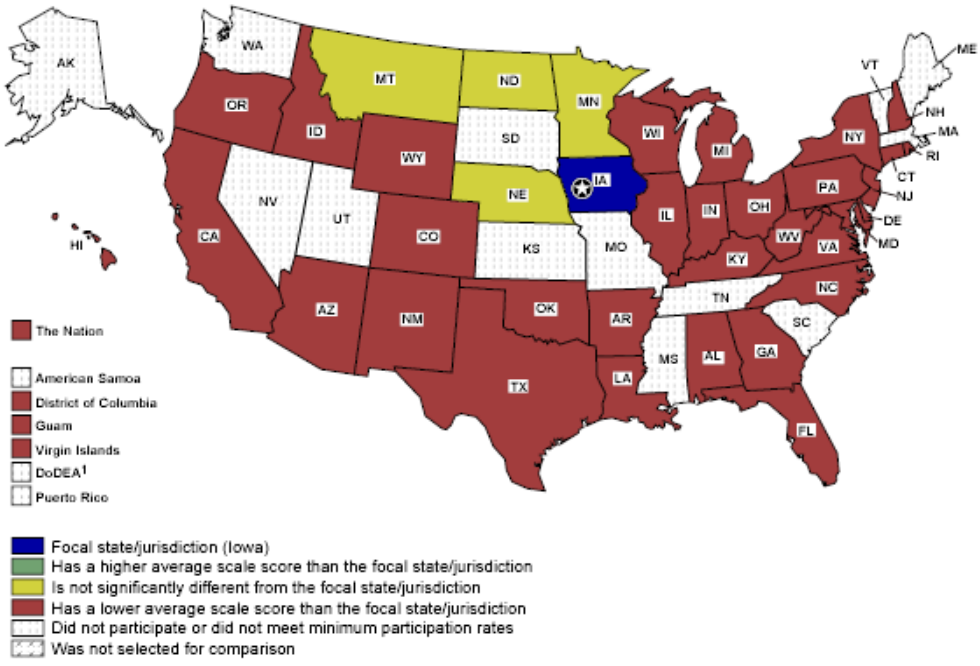
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Mathematics Assessments.

Figure 13A—1992 Iowa Grade 8 Mathematics All Students: Standard Score 283 (National Public 267)



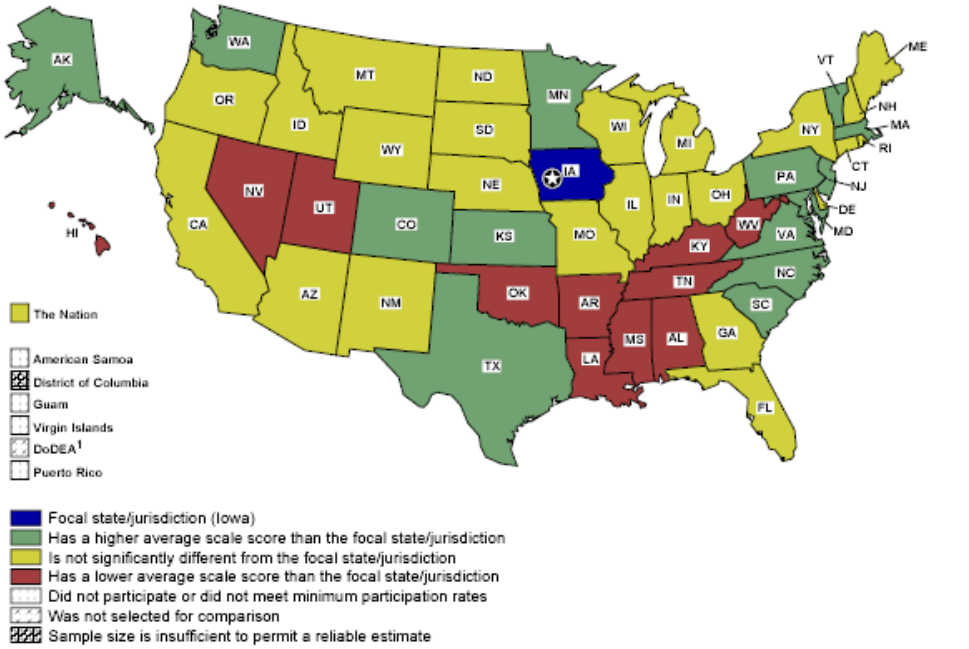
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992 Mathematics Assessments.

Figure 14A—1990 Iowa Grade 8 Mathematics All Students: Standard Score 278 (National Public 262)



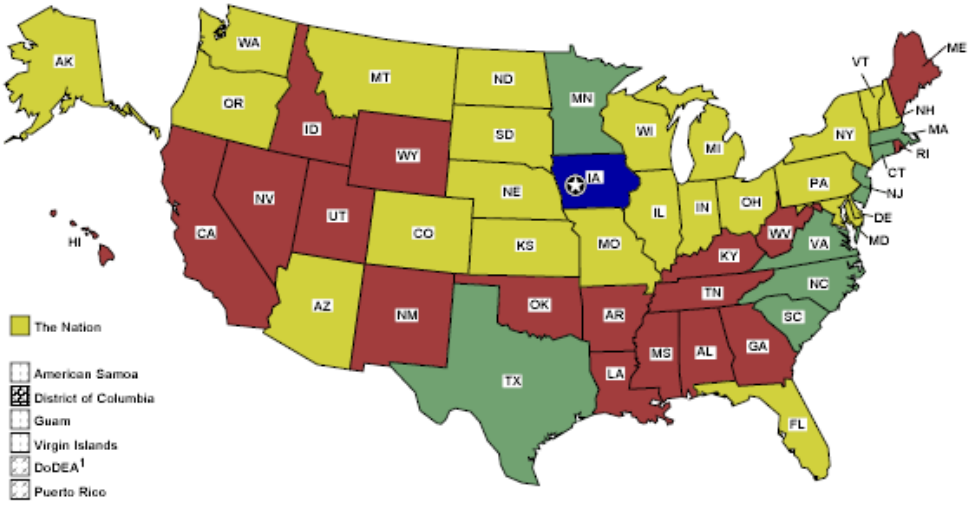
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990 Mathematics Assessments.

Figure 15A—2007 Iowa Grade 8 Mathematics White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 296 (National Public 298)



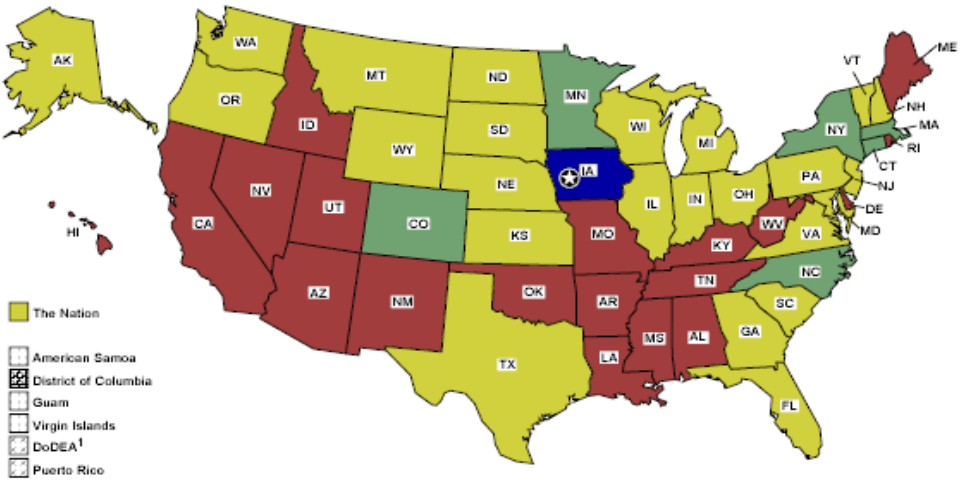
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Mathematics Assessments.

Figure 16A—2005 Iowa Grade 8 Mathematics White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 295 (National Public 295)



[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Mathematics Assessments.

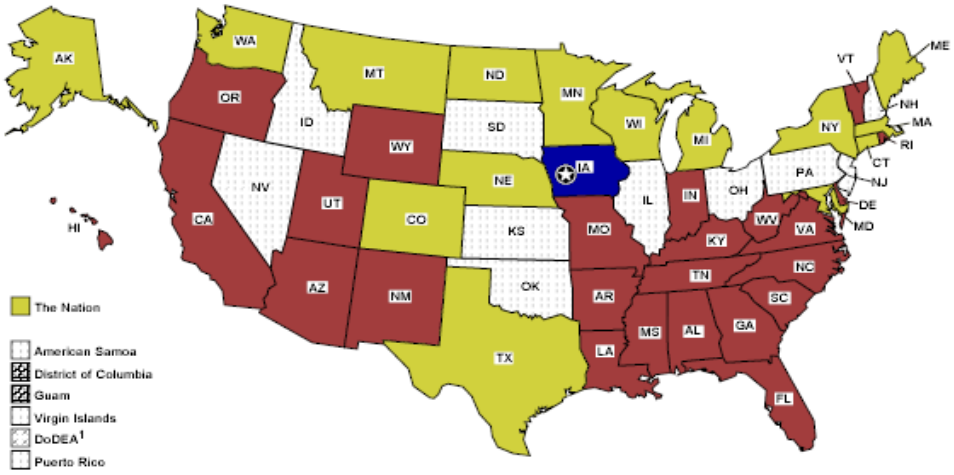
Figure 17A—2003 Iowa Grade 8 Mathematics All Students: White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 295 (National Public 294)



Focal state/jurisdiction (Iowa)
Has a higher average scale score than the focal state/jurisdiction
Is not significantly different from the focal state/jurisdiction
Has a lower average scale score than the focal state/jurisdiction
Did not participate or did not meet minimum participation rates
Was not selected for comparison
Sample size is insufficient to permit a reliable estimate

[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessments.

Figure 18A—1996 Iowa Grade 8 Mathematics White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 288 (National Public 284)



Focal state/jurisdiction (Iowa)
Has a higher average scale score than the focal state/jurisdiction
Is not significantly different from the focal state/jurisdiction
Has a lower average scale score than the focal state/jurisdiction
Did not participate or did not meet minimum participation rates
Was not selected for comparison
Sample size is insufficient to permit a reliable estimate

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

Figure 19A—Iowa Compared to the Nation: Grade 4 Reading

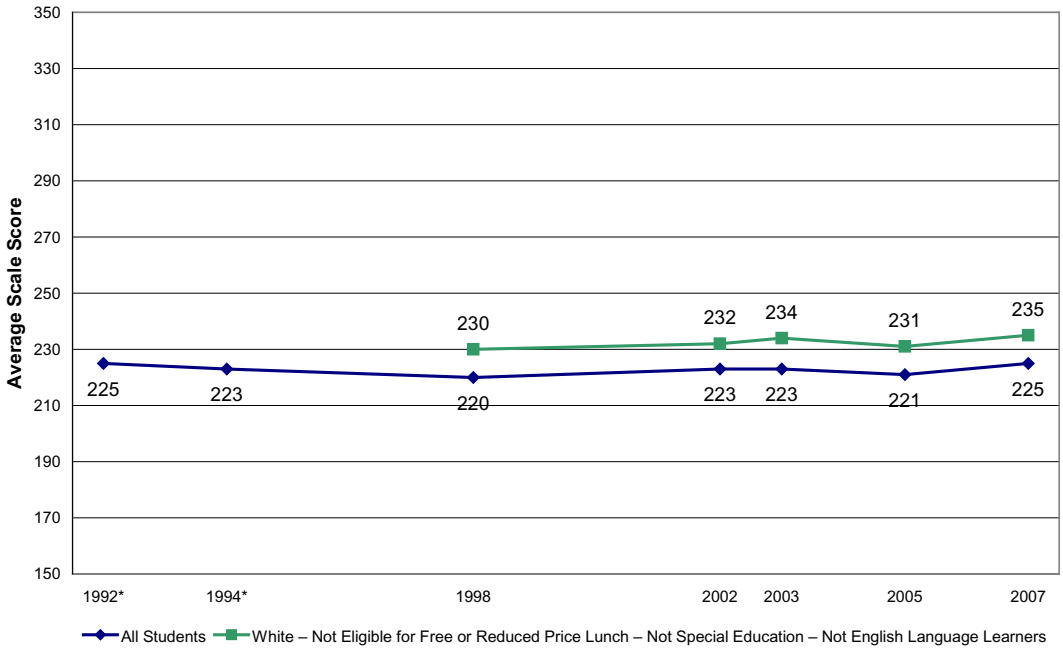
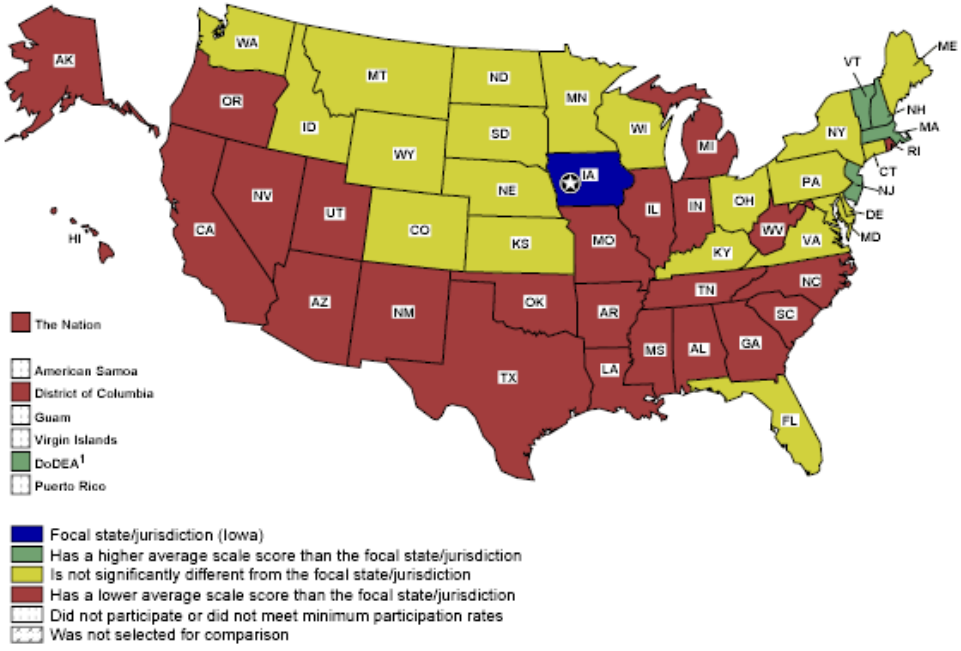
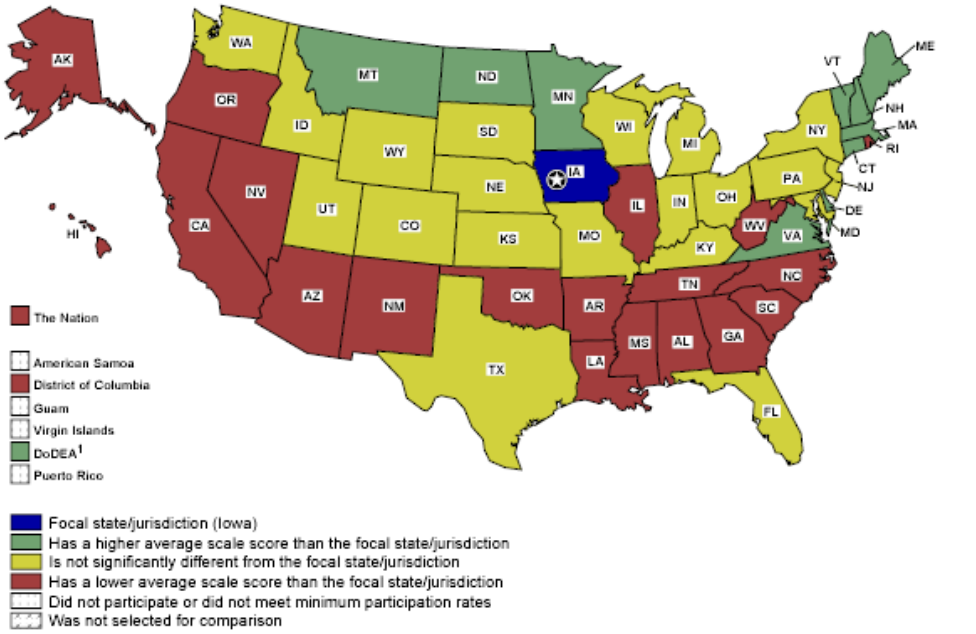


Figure 20A—2007 Iowa Grade 4 Reading All Students: Standard Score 225 (National Public 220)



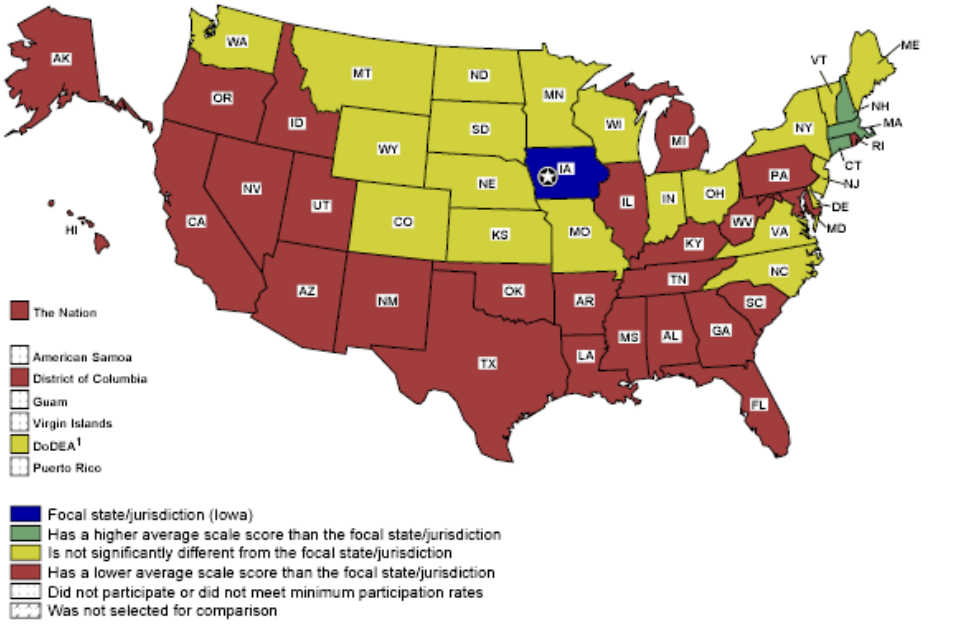
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Reading Assessments.

Figure 21A—2005 Iowa Grade 4 Reading All Students: Standard Score 221 (National Public 217)



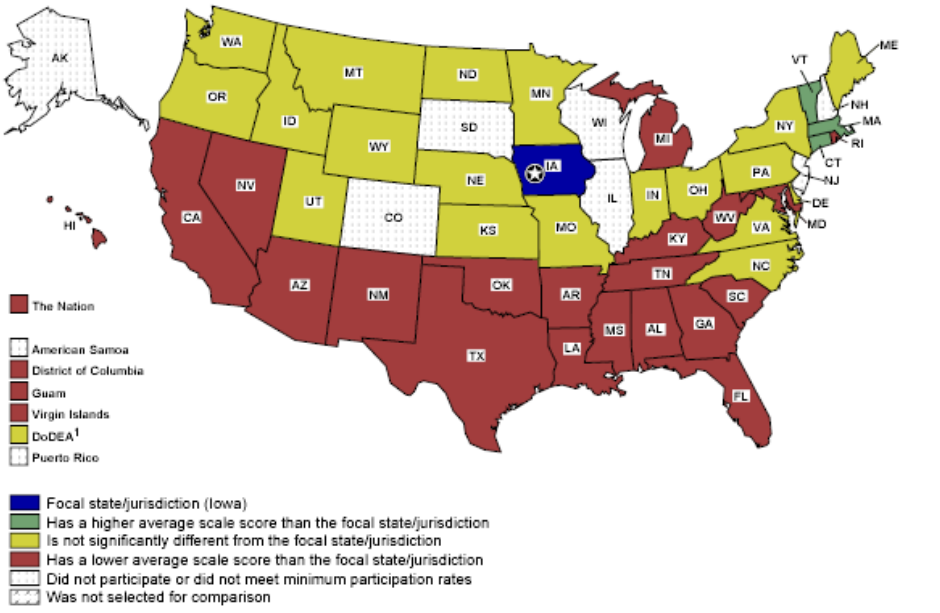
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Reading Assessments.

Figure 22A—2003 Iowa Grade 4 Reading All Students: Standard Score 223 (National Public 216)



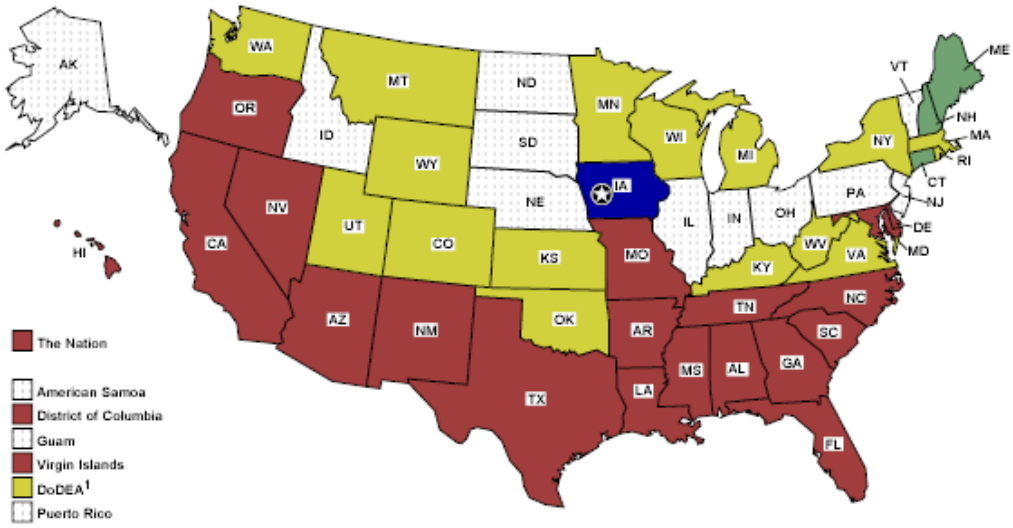
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Assessments.

Figure 23A—2002 Iowa Grade 4 Reaing All Students: Standard Score 223 (National Public 217)



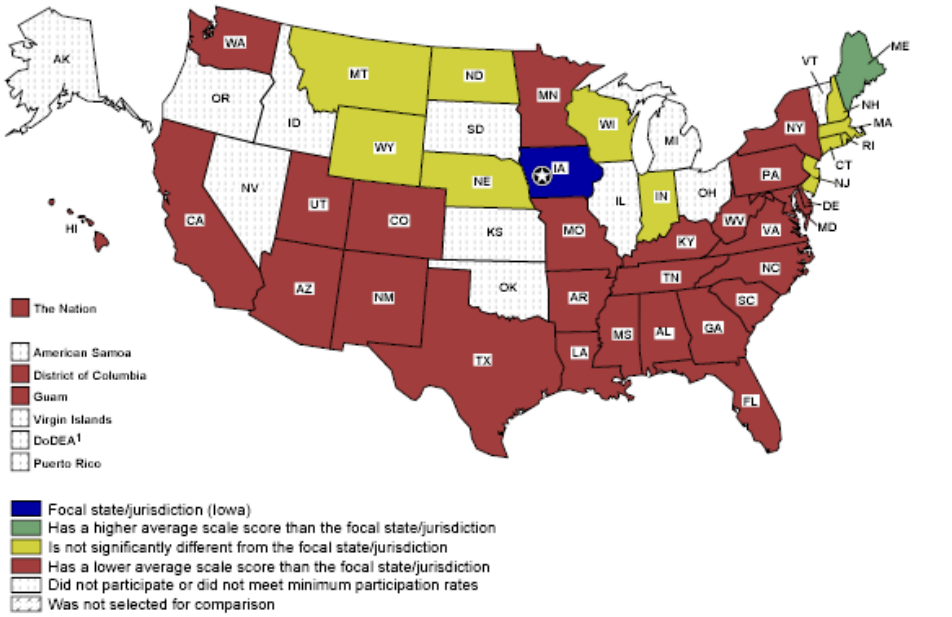
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2002 Reading Assessments.

Figure 24A—1996 Iowa Grade 4 Reading All Students: Standard Score 220 (National Public 213)



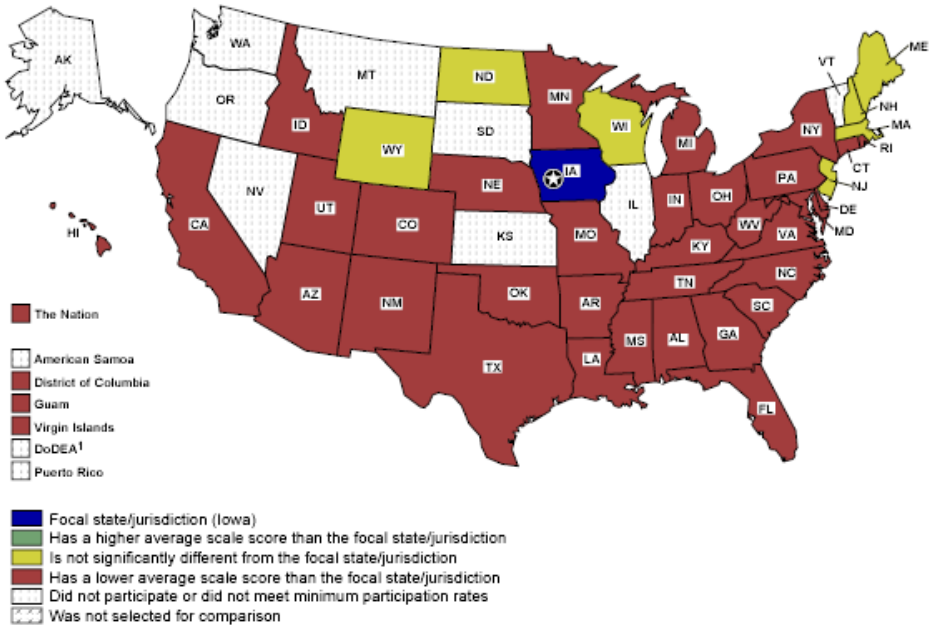
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessments.

Figure 25A—1994 Iowa Grade 4 Reading All Students: Standard Score 223 (National Public 212)



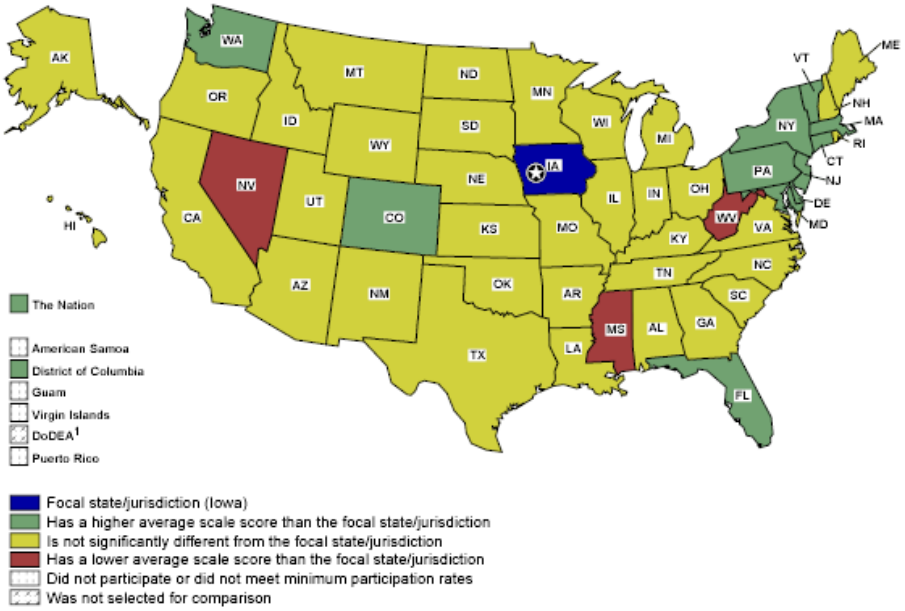
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1994 Reading Assessments.

Figure 26A—1992 Iowa Grade 4 Reading All Students: Standard Score 225 (National Public 215)



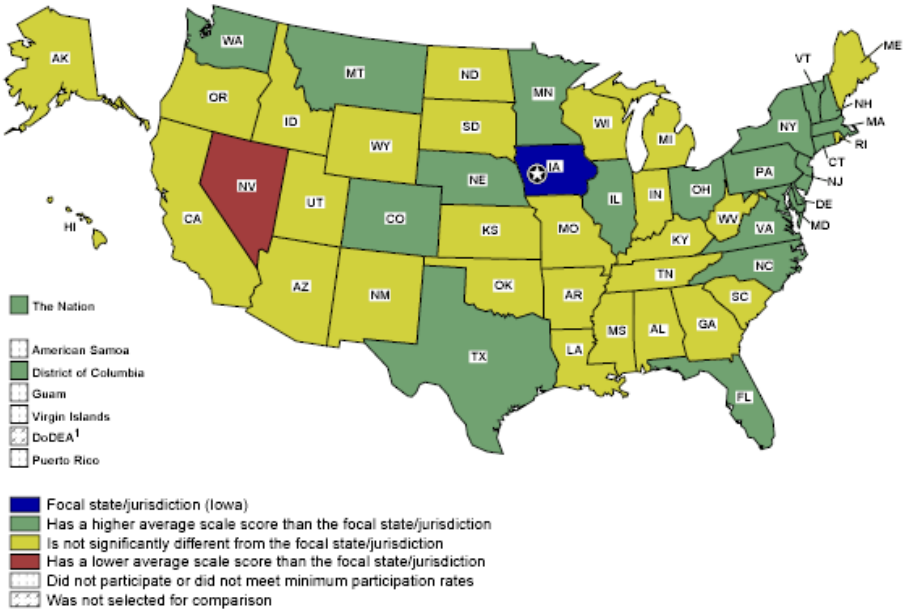
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992 Reading Assessments.

Figure 27A—2007 Iowa Grade 4 Reading White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 235 (National Public 238)



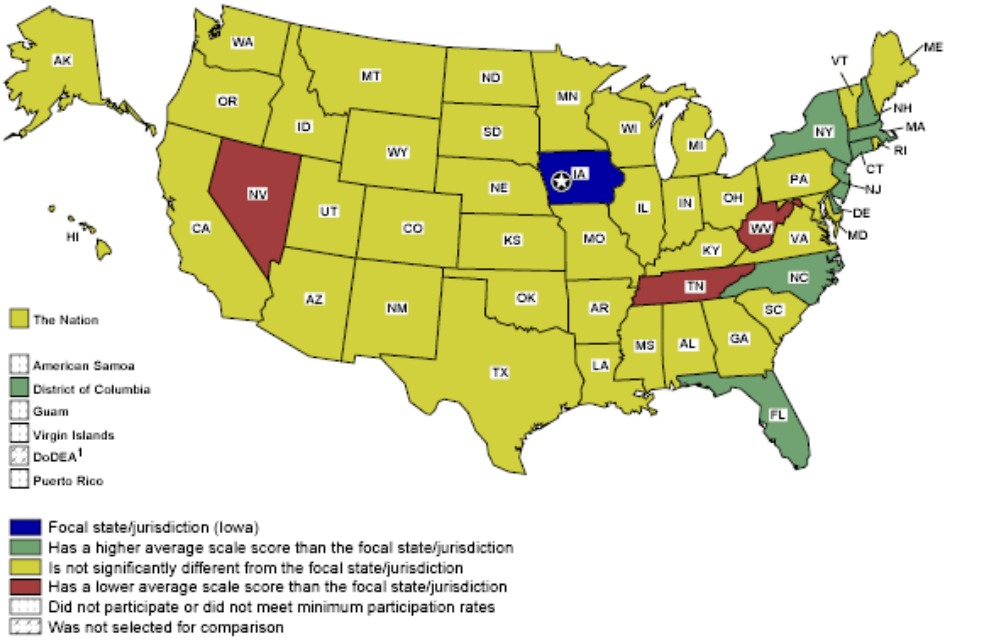
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Reading Assessments.

Figure 28A—2005 Iowa Grade 4 Reading White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 231 (National Public 235)



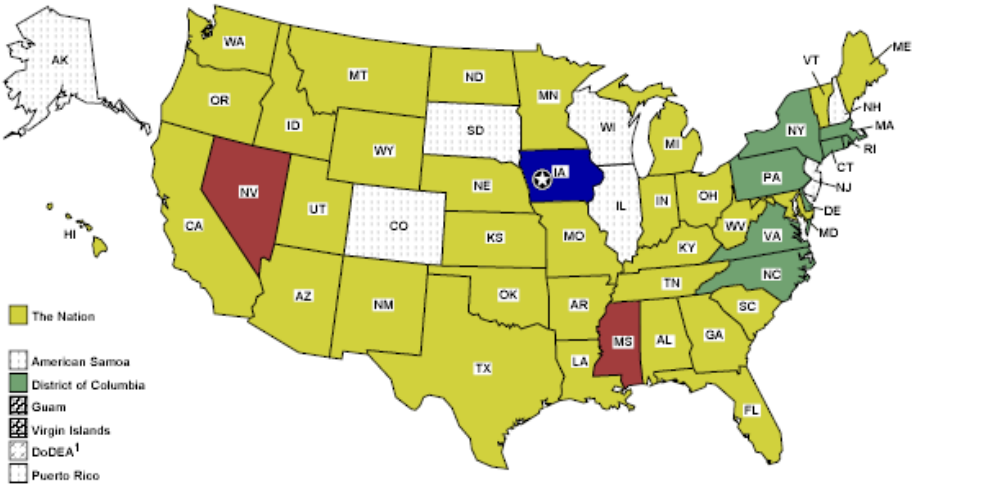
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Reading Assessments.

Figure 29A—2003 Iowa Grade 4 Reading White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 234 (National Public 235)



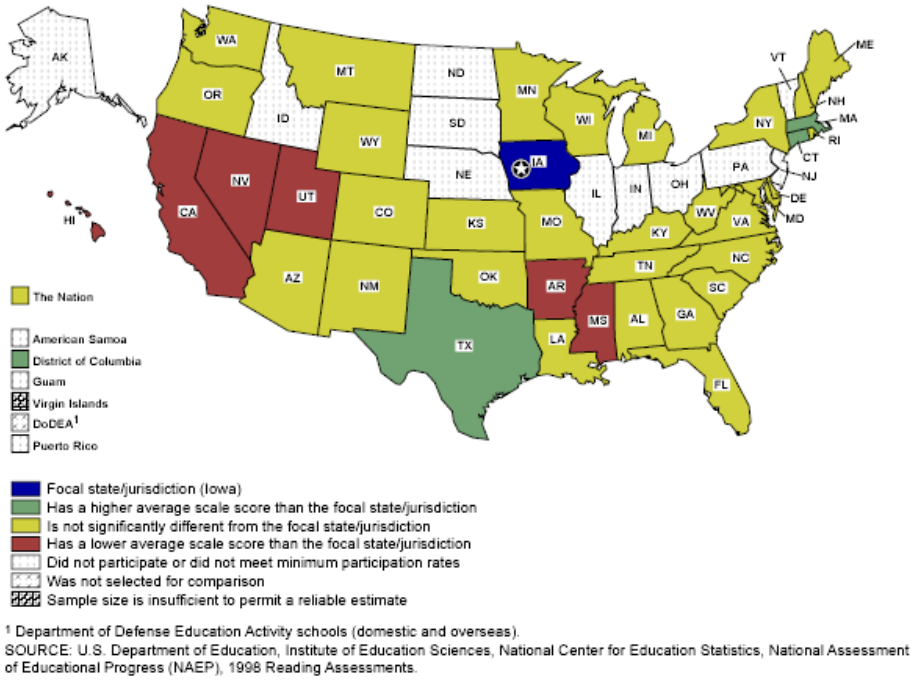
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Reading Assessments.

Figure 30A—2002 Iowa Grade 4 Reading White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 232 (National Public 235)



[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2002 Reading Assessments.

Figure 31A—1998 Iowa Grade 4 Reading White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 230 (National Public 230)



[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 Reading Assessments.

Figure 32A—Iowa Compared to the Nation: Grade 4 Mathematics

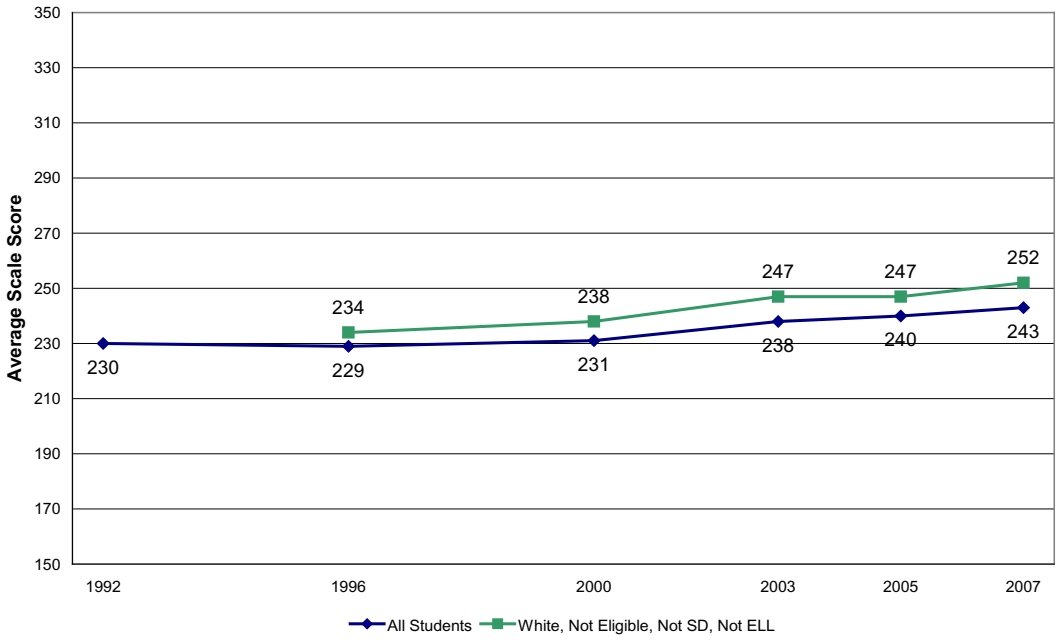
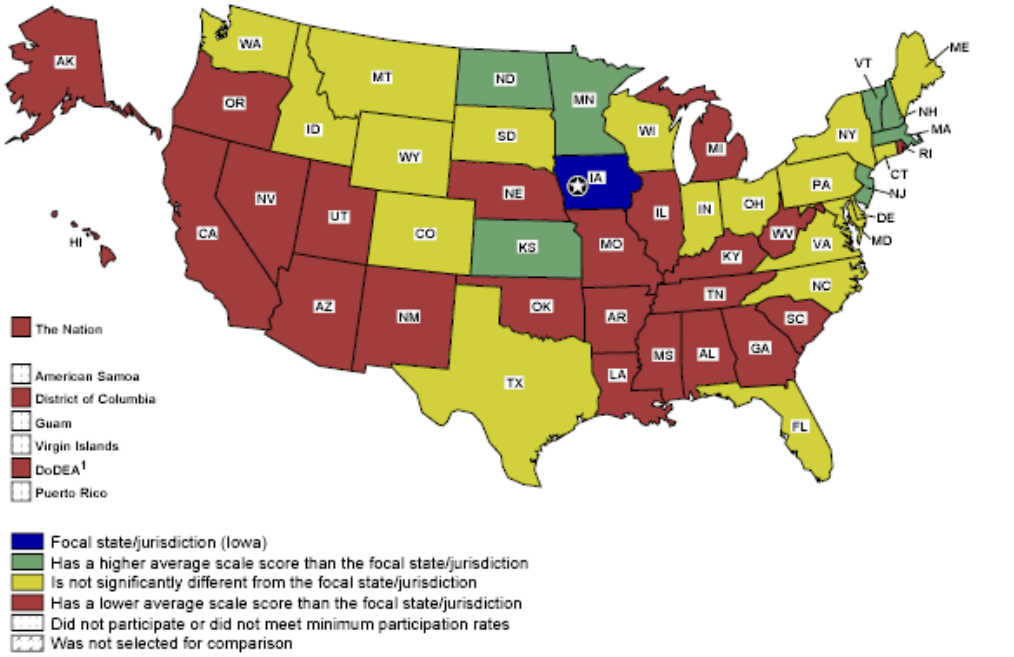
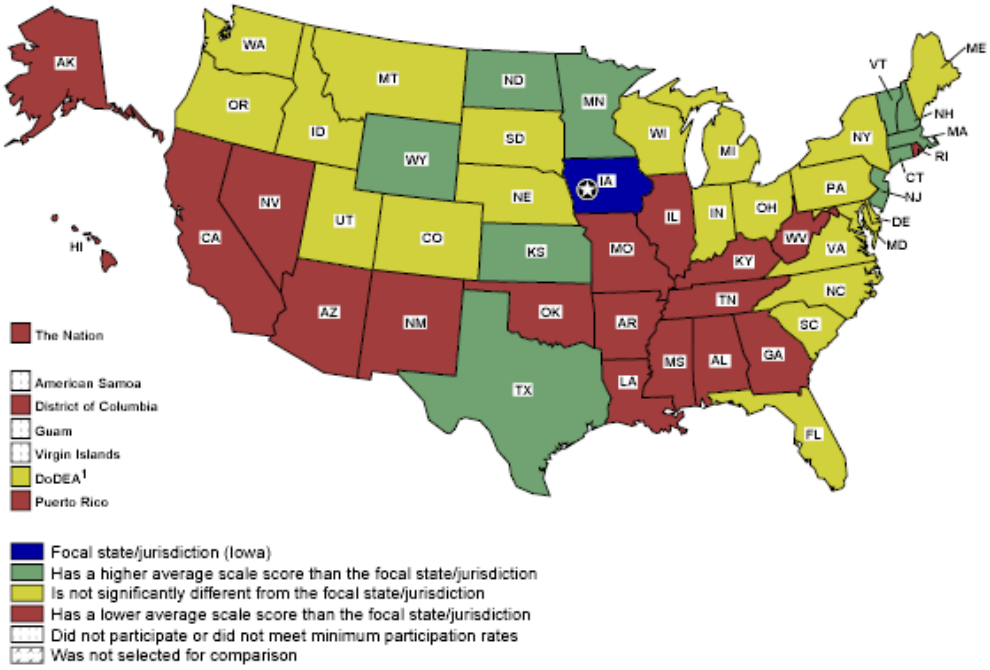


Figure 33A—2007 Iowa Grade 4 Mathematics All Students: Standard Score 243 (National Public 239)



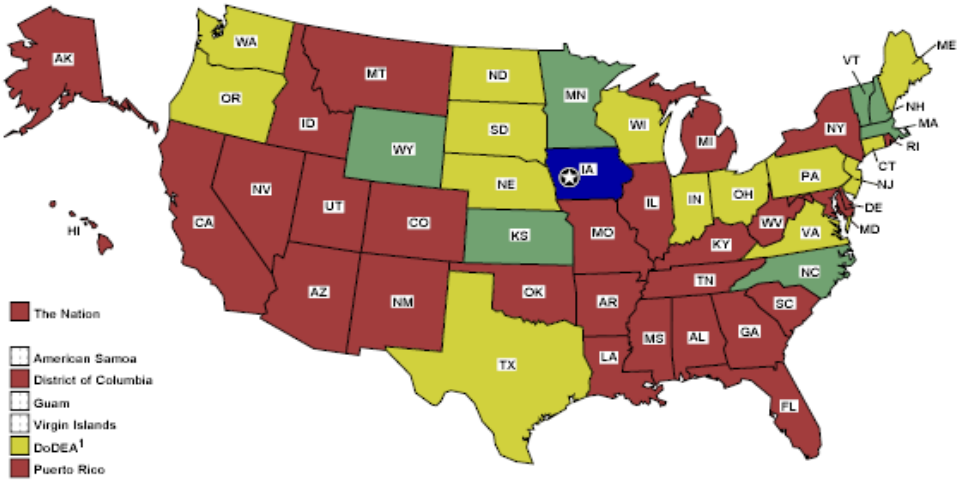
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Mathematics Assessments.

Figure 34A—2005 Iowa Grade 4 Mathematics All Students: Standard Score 240 (National Public 237)



[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Mathematics Assessments.

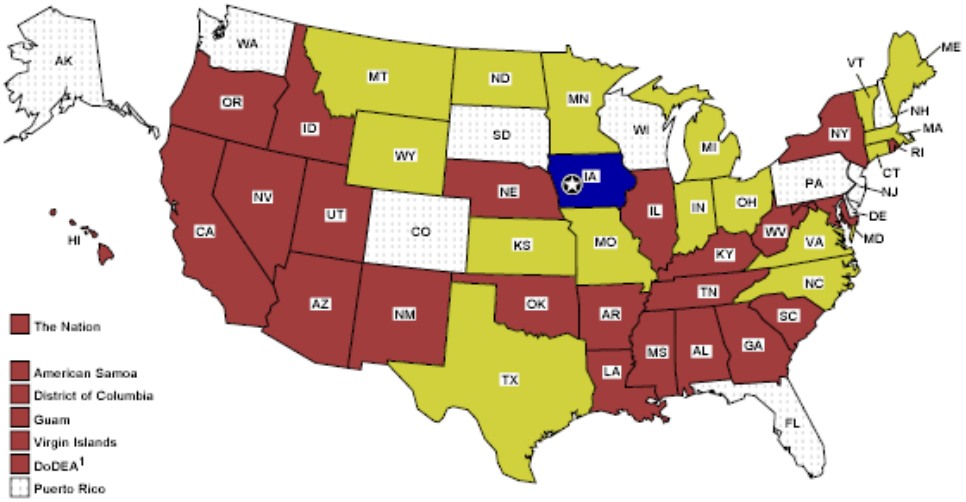
Figure 35A—2003 Iowa Grade 4 Mathematics All Students: Standard Score 238 (National Public 234)



Focal state/jurisdiction (Iowa)
Has a higher average scale score than the focal state/jurisdiction
Is not significantly different from the focal state/jurisdiction
Has a lower average scale score than the focal state/jurisdiction
Did not participate or did not meet minimum participation rates
Was not selected for comparison

[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessments.

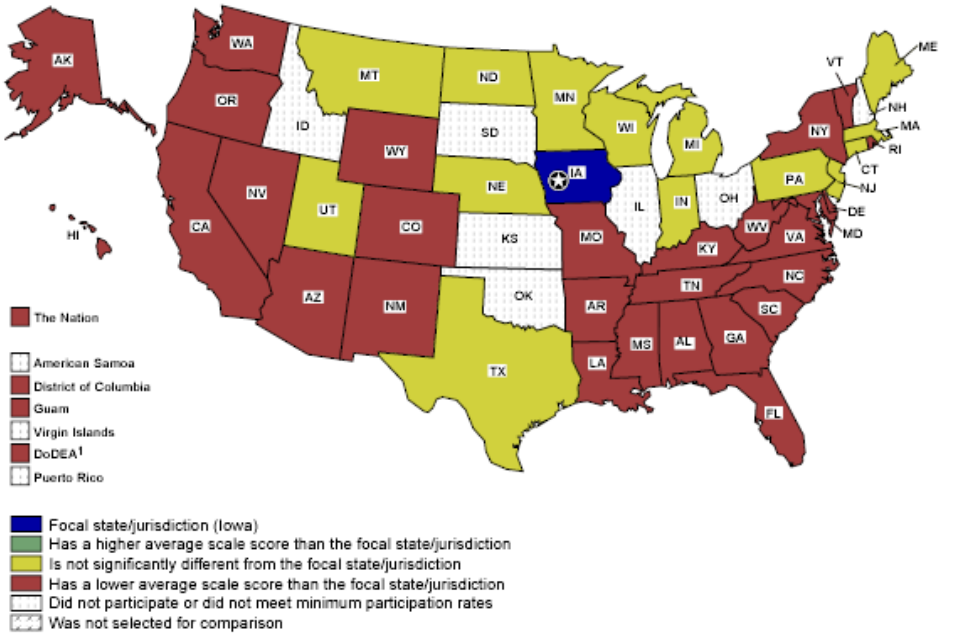
Figure 36A—2000 Iowa Grade 4 Mathematics All Students: Standard Score 231 (National Public 224)



Focal state/jurisdiction (Iowa)
Has a higher average scale score than the focal state/jurisdiction
Is not significantly different from the focal state/jurisdiction
Has a lower average scale score than the focal state/jurisdiction
Did not participate or did not meet minimum participation rates
Was not selected for comparison

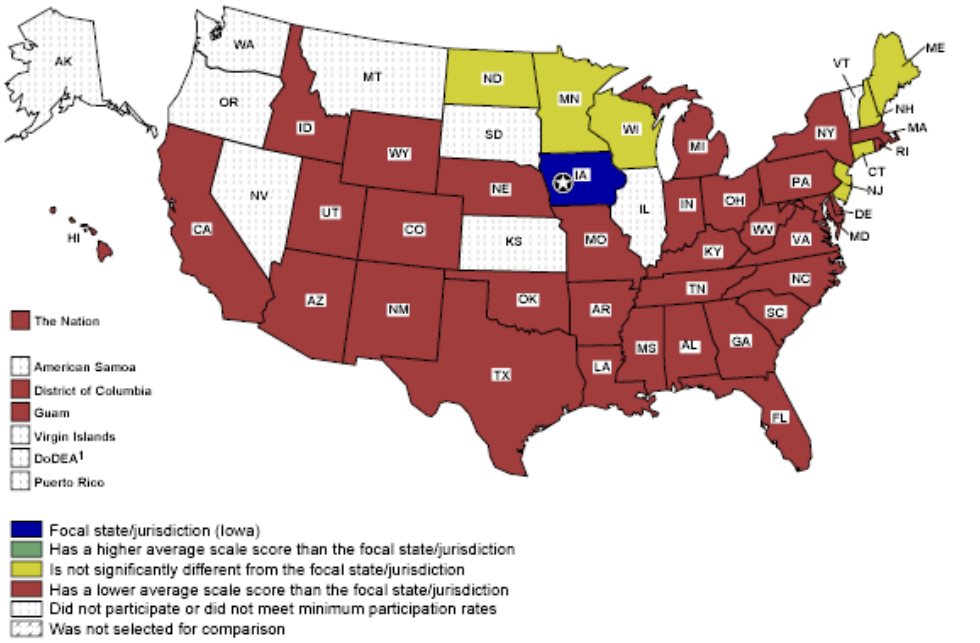
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Mathematics Assessments.

Figure 37A—1996 Iowa Grade 4 Mathematics All Students: Standard Score 229 (National Public 222)



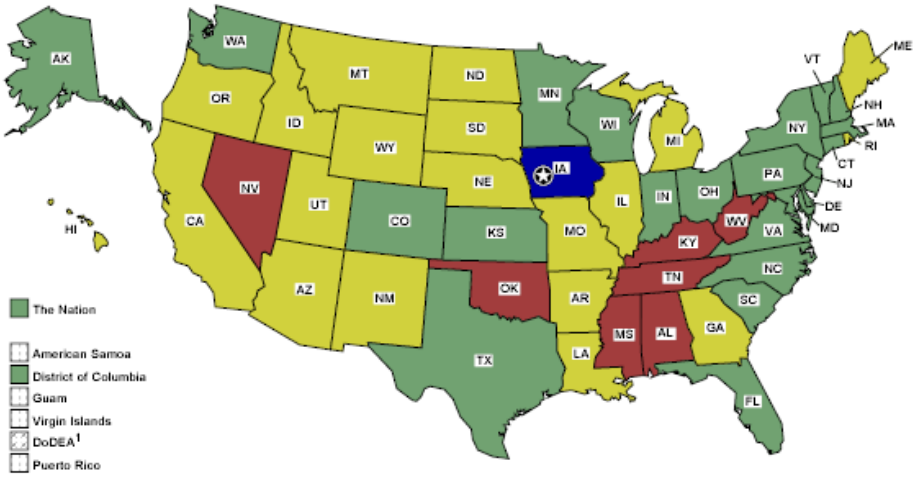
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Mathematics Assessments.

Figure 38A—1992 Iowa Grade 4 Mathematics All Students: Standard Score 230 (National Public 219)



[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992 Mathematics Assessments.

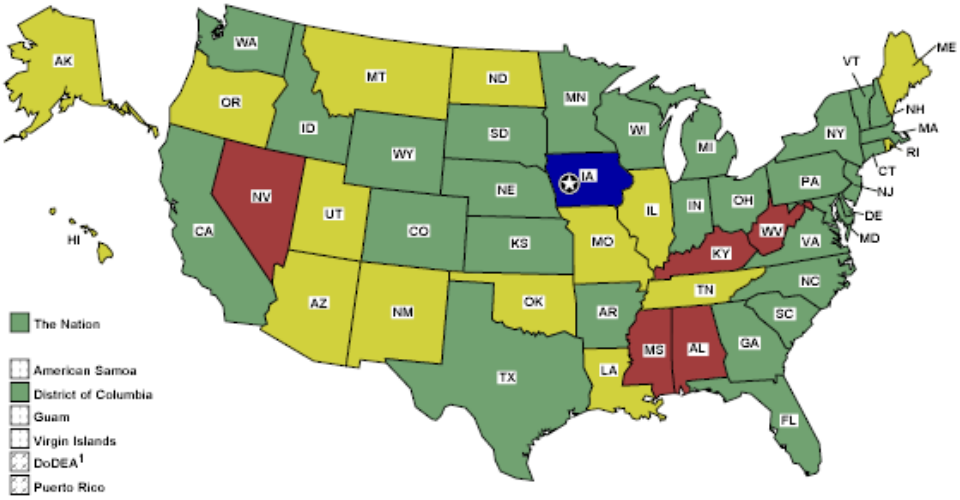
Figure 39A—2007 Iowa Grade 4 Mathematics White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 252 (National Public 254)



Focal state/jurisdiction (Iowa)
Has a higher average scale score than the focal state/jurisdiction
Is not significantly different from the focal state/jurisdiction
Has a lower average scale score than the focal state/jurisdiction
Did not participate or did not meet minimum participation rates
Was not selected for comparison

[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Mathematics Assessments.

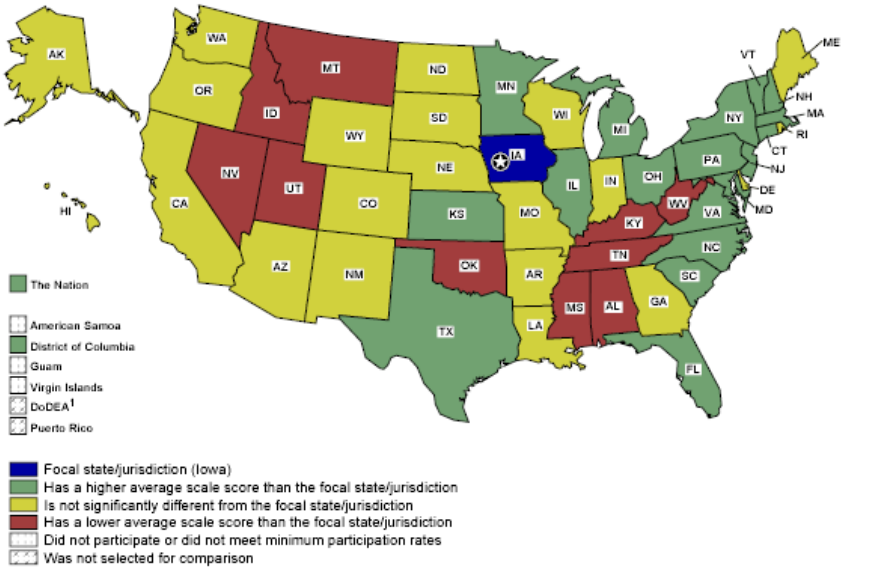
Figure 40A—2005 Iowa Grade 4 Mathematics White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 247 (National Public 252)



Focal state/jurisdiction (Iowa)
Has a higher average scale score than the focal state/jurisdiction
Is not significantly different from the focal state/jurisdiction
Has a lower average scale score than the focal state/jurisdiction
Did not participate or did not meet minimum participation rates
Was not selected for comparison

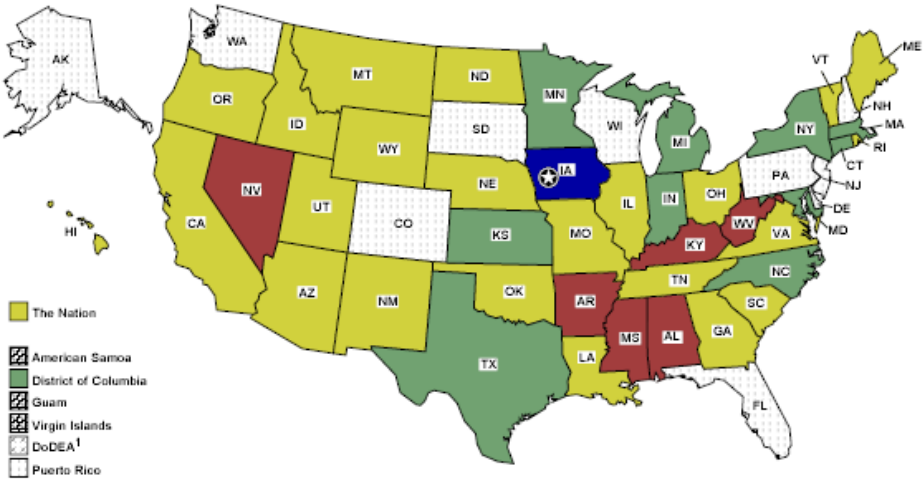
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Mathematics Assessments.

Figure 41A—2003 Iowa Grade 4 Mathematics White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 247 (National Public 249)



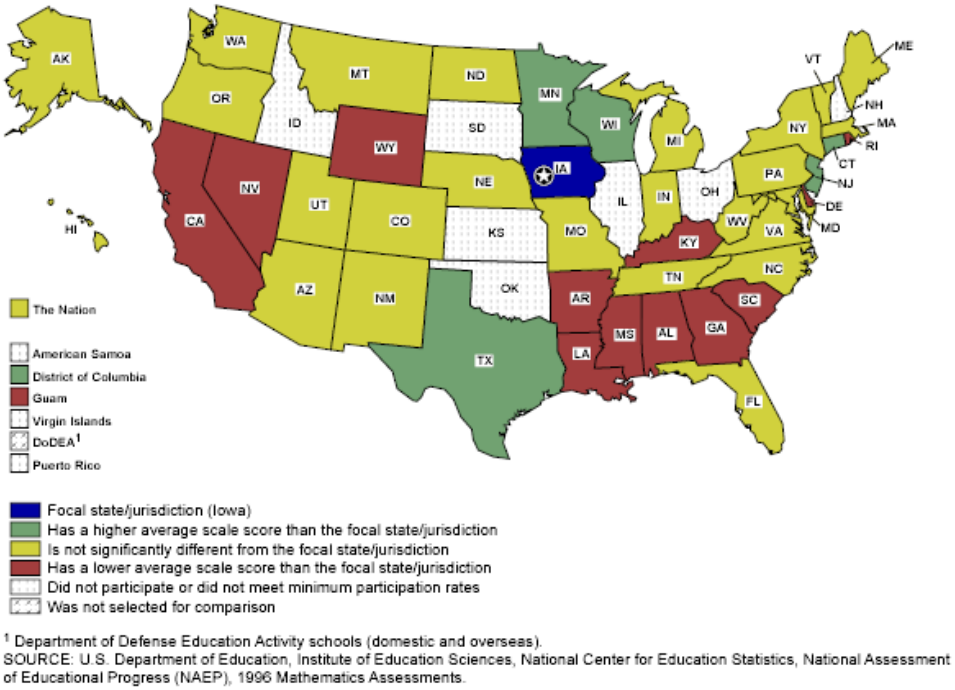
[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessments.

Figure 42A—2000 Iowa Grade 4 Mathematics White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 238 (National Public 239)



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

Figure 43A—1996 Iowa Grade 4 Mathematics White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners: Standard Score 234 (National Public 233).



[1] Department of Defense Education Activity schools (domestic and overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Mathematics Assessments.

Note: In 1996, fewer Special Education and English Language Learner students were tested because accommodations were not allowed. No United States map is available for 1996 Iowa White, Not Eligible for Free or Reduced Price Lunch - Not Special Education - Not English Language Learners.