

**The Impact of High-Stakes Tests
on Student Academic Performance:
An Analysis of NAEP Results in States
With High-Stakes Tests and ACT, SAT,
and AP Test Results in States With
High School Graduation Exams**

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Introduction

The value of high-stakes testing policies has become the source of spirited debates among educational policy makers and researchers, increasingly more serious since President Bush on January 8, 2002, signed into law the Elementary and Secondary Education Act of 2001 (widely known as the No Child Left Behind Act). The President, politicians from both parties, and many citizens believe that attaching consequences (i.e. high-stakes) to tests is vital to educational reform. Their logic is that by attaching significant penalties and rewards to performance on tests, we can reform an educational system that is not producing satisfactory student achievement. High-stakes tests, they contend, will help to increase academic achievement across America's schools.

The purpose of this study is to assess whether academic achievement in fact increases after the introduction of high-stakes tests. The first objective of this study is to assess whether academic achievement has improved since the introduction of high-stakes testing policies in the 27 states with the highest stakes written into their grade 1-8 testing policies: Alabama, California, Colorado, Delaware, Florida, Georgia, Indiana, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Mississippi, Missouri,

Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

National Assessment of Educational Progress (NAEP)¹ scores are used to examine whether academic achievement increased after high-stakes were attached to tests in grades 1-8. If academic achievement did not change after stakes were attached to a state test or if achievement decreased, the effectiveness of the high-stakes policy as a means of improving student performance must be called into question.

The second objective in this study is to assess whether academic achievement has improved after the introduction of high school graduation exams. These exams test a high school student's level of knowledge in core high school subjects. In the 18 states with high school graduation exams, students must pass these exams before they are graduated. This occurs in the states of Alabama, Florida, Georgia, Indiana, Louisiana, Maryland, Minnesota, Mississippi, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, South Carolina, Tennessee, Texas, and Virginia. American College Test (ACT),² Scholastic Aptitude Test (SAT),³ and Advanced Placement (AP)⁴ scores are used to assess whether academic achievement increased after high-stakes high school graduation exams were implemented. If academic achievement did not change after the implementation of a high school graduation exam, the effectiveness of the high school graduation exam policy as a means of improving student performance is called into question.

Scores on state-administered tests are not ordinarily analyzed for evidence of academic achievement because such scores are easily manipulated through test preparation, careful alignment of the received curriculum with the test, the exclusion of

special education and limited English proficient (LEP) students, and so forth. In addition, because states change tests often, to examine each state's data since the implementation of high-stakes tests, which in some cases is more than two decades ago, is virtually impossible.

First, it is difficult for state personnel to find test records that do not pertain to the current state test; second, it is difficult to make interstate comparisons given that states report test scores in very different ways; and third, for the state data we did collect, increases were shown on the state tests almost invariably. How genuine these increases are is the focus of this analysis. Because rewards and sanctions for students and other school personnel will almost always result in gains on whatever instrument is used by the state to monitor its schools, student learning is measured by means of the external tests mentioned above—tests that are not administered by the state but assess some of the same learning domains covered on each state's high-stakes test.

It is important to distinguish the test from the domain it purports to represent. An item about quadratics on a test of mathematics is intended to be representative of a topic in algebra called quadratics. Getting the item right or wrong is supposed to indicate how a student will do when faced with similar items that also require the solution of quadratic equations. In the same way, the state imposed high-stakes graduation tests are supposed to (and most often do) contain items representing the various important domains that make up the high school curriculum in areas such as mathematics, science, English language, and so forth. These domains are defined by professional organizations (e.g., the National Council for Teachers of Mathematics [NCTM]) or by state curriculum committees that develop state standards, often similar to those put forth by the

professional associations. The ACT and SAT tests, as well as the AP exams, cover some of the same domains as do the state high-stakes graduation tests. They all are purportedly designed to assess important domains in the high school curriculum.

Because the domains that are assessed on the various tests are similar and overlap, increases on one test ought to be reproducible on another test. They should naturally lead to increases on another test that covers the same domain. If that happens, transfer of learning would have been demonstrated, indicating that genuine learning in a domain had taken place. If, however, the state high-stakes test scores goes up, but there is no concomitant increase in the other tests that assess the same domain, then perhaps only a narrow form of training for the state test is occurring.

A distinction is made between education and training—a difference of degree, but an important distinction, nevertheless. While training can provide some useful skills, including cognitive skills, we think of education as signifying thinking, that is, engagement in cognitive activity that is more demanding than the ability to employ skills. This report is an inquiry into the effects of high-stakes testing on learning, asking whether the imposition of high-stakes testing results in a more narrow form of training or a broader form of education for our students. The evidence reviewed here suggests that high-stakes testing creates a “training effect” only.

High-Stakes Defined

In *A Nation at Risk* (1983),⁵ the National Commission on Education argued that schools in the United States were performing poorly in comparison to other industrialized countries and the United States was in jeopardy of losing its global superiority. Although

high-stakes tests existed in some states, they had not proved themselves as worthy reforms, nor had they warranted the expansion of high-stakes testing policies. Nevertheless, the National Commission on Education called for more rigorous standards and accountability mechanisms to raise academic achievement for all states. The commission recommended that states institute high standards to homogenize and improve curricula and administer assessments to hold schools accountable for meeting those standards. These assessments became known as high-stakes tests.

High-stakes tests are tests from which results are used to make significant educational decisions about schools, teachers, administrators, and students. Across almost every state, school, and district test scores are now routinely published in newspapers. Although this is considered a stake (a consequence), not until recently have stricter accountability measures been attached to performance on tests.

In this study high-stakes are defined as consequences that are attached to tests beyond the accountability measures that have been in place for years, like publishing school and district test scores in the newspaper. The year in which a state is defined as a high-stakes state depends upon the point at which more extreme, or tighter, stakes were attached to test performance. For example, a high-stake would be defined as giving a student the right to transfer to another school if the school in which the student was situated performed poorly for a period of years. The effects of attaching more stringent stakes to tests are the focus of this analysis.

At the school level, for example, 25 states distribute financial rewards to successful or improved schools, and 25 states have the power to close, reconstitute, or take over low performing schools. The new federal pressures to “take over” and

reconstitute failing schools, as a part of the No Child Left Behind Act may soon result in all states having to do this.

For teachers, in eight states high average class scores or improvements in score warrant financial bonuses, and in 17 states low average class scores may warrant the displacement or removal of teachers or administrators.⁶

For students, in six states high scores may result in special diplomas or scholarships; in eight states low scores may be used to promote or retain students in grade; and in ten states students in schools deemed failing may enroll elsewhere. Students in low performing schools in these states, for example, may be given a voucher to enroll in a private school. Low scores may also be used to prevent high school students from receiving a high school diploma. Whether a student passes or fails a high school graduation exam is being used as the only determinant to whether a student receives a high school diploma in eighteen states. Granted, students must, for example, maintain a certain grade point average (GPA) or be in attendance a certain number of days to receive a high school diploma. In these 18 states, however, even if students meet all other requirements for graduation but fail the high school graduation exam, they are denied a high school diploma. All of the stakes mentioned are summarized by state in Table 1.

Table 1 - Consequences Written into State⁷ K-12 Testing Policies in States with High-Stakes Tests⁸

State	High School Graduation Exams	High-Stakes Attached to Tests	Stakes Affecting:							Total Stakes (including high school graduation exams) by state
			Schools	Administrators or Teachers		Students				
	Years in which graduation became contingent upon a high school graduation exam	Years in which high stakes were attached to tests in grades Kindergarten through 8 (up to 2002)	The state has the authority to close, revoke a school's accreditation, take over, or reconstitute low-scoring schools	Monetary awards are given to high performing or improving schools	Monetary awards can be used for teacher bonuses	The state has the authority to replace principals or teachers due to low test scores	Grade-to-grade promotion is contingent upon a promotion exam	The state permits students in failing schools to enroll elsewhere	Monetary awards or scholarships for college tuition are given to high-performing students	
Alabama	1985, 1993, 2001	1996	X	X		X				4
California	n/a	1999	X	X	X		X		X	5
Colorado	n/a	2000	X	X	X	X		X		5
Delaware	n/a	1998	X	X	X	X	X		X	6
Florida	1979, 1990, 1996	1999		X	X		X	X		5
Georgia	1984, 1995	n/a								1
Indiana	2000	1988	X	X				X		4
Kentucky	n/a	1994	X	X		X		X		4
Louisiana	1991	1989	X	X			X	X		5
Maryland	1987	1993	X	X		X		X		5
Massachusetts	n/a	1999	X			X			X	3
Michigan	n/a	1993	X	X		X		X	X	5

Table 1, continued

State	High School Graduation Exams	High-Stakes Attached to Tests	Stakes Affecting: Schools		Administrators or Teachers		Students			Total Stakes (including high school graduation exams) by state
	Years in which graduation became contingent upon a high school graduation exam	Years in which high stakes were attached to tests in grades Kindergarten through 8 (up to 2002)	The state has the authority to close, revoke a school's accreditation, take over, or reconstitute low-scoring schools	Monetary awards are given to high performing or improving schools	Monetary awards can be used for teacher bonuses	The state has the authority to replace principals or teachers due to low test scores	Grade-to-grade promotion is contingent upon a promotion exam	The state permits students in failing schools to enroll elsewhere	Monetary awards or scholarships for college tuition are given to high-performing students	
Minnesota	2000	n/a								1
Mississippi	1989	1994	X							2
Missouri	n/a	1993	X							1
Nevada	1981, 1985, 1992, 1999	1998	X			X			X	4
New Jersey	1984, 1987, 1995	1987	X			X				3
New Mexico	1990	1989	X	X		X	X			5
New York	1985, 1995	1999	X			X		X		4
North Carolina	1980, 1998	1997	X	X	X	X	X			6
Ohio	1994	1996	X			X	X		X	5
Oklahoma	n/a	1989	X			X				2
Pennsylvania	n/a	1999	X	X	X					3
South Carolina	1990	1998	X	X		X	X			5
Tennessee	1986, 1998	2000	X	X	X					4

Table 1, continued

State	High School Graduation Exams	High-Stakes Attached to Tests	Stakes Affecting:								Total Stakes (including high school graduation exams) by state
			Schools	Administrators or Teachers		Students					
	Years in which graduation became contingent upon a high school graduation exam	Years in which high stakes were attached to tests in grades Kindergarten through 8 (up to 2002)	The state has the authority to close, revoke a school's accreditation, take over, or reconstitute low-scoring schools	Monetary awards are given to high performing or improving schools	Monetary awards can be used for teacher bonuses	The state has the authority to replace principals or teachers due to low test scores	Grade-to-grade promotion is contingent upon a promotion exam	The state permits students in failing schools to enroll elsewhere	Monetary awards or scholarships for college tuition are given to high-performing students		
Texas	1987, 1992	1993	X	X	X	X		X		6	
Virginia	1986	1998	X							2	
West Virginia	n/a	1989	X			X		X		3	
Total Consequences	18	28	25	16	8	17	8	10	6		

Characteristics of States That Use High-Stakes Tests

Governmental Traditions

High-stakes tests and high school graduation exams are found in states that have more centralized governments. In states with centralized governments, the state government assumes more power and administers more comprehensive governing mechanisms. In states with more localized governments, the state government assumes less power than do local or county governments. Of the states that have centralized governments, 93 percent have implemented high-stakes tests. Of the states that have localized governments, 33 percent have implemented high-stakes tests. Of the states that have centralized governments, 87 percent have implemented high school graduation exams. Of the states that have localized governments, 17 percent have implemented high school graduation exams.⁹

Education Funding

High-stakes tests and high school graduation exams are more likely to be implemented in states that allocate less money than the national average per pupil for schooling. High-stakes tests are found in 60 percent of the states in which yearly per pupil expenditures are lower and in 50 percent of the states in which yearly per pupil expenditures are higher than the national average. High school graduation exams are found in 43 percent of the states in which yearly per pupil expenditures are lower, and in 25 percent of the states in which yearly per pupil expenditures are higher than the national average.¹⁰

State Size

High-stakes tests and high school graduation exams are found more frequently in the largest states and in states with the greatest population growth as compared to the nation. For example, 84 percent of the country's largest states have implemented high-stakes tests, compared with 28 percent of the country's smallest states. Similarly, 56 percent of the country's largest states have implemented high school graduation exams, compared with 16 percent of the country's smallest states. In addition, 64 percent of the states with the greatest population growth from 1990 to 2000 have implemented high-stakes tests; 52 percent of such states have implemented high school graduation exams. By comparison, 48 percent of the states with the lowest population growth in that period have implemented high-stakes tests, and only 20 percent of such states have implemented high school graduation exams.¹¹

Regional Trends

High-stakes tests and high school graduation exams tend to be found in the South and Southwest. High-stakes tests are in use in 88 percent of the southern and 80 percent of the southwestern states compared with 42 percent of the mid-western, 44 percent of the northeastern, and 31 percent of the western states. High school graduation exams are in use in 69 percent of the southern and 60 percent of the southwestern states; they are found in 25 percent of the mid-western, 22 percent of the northeastern, and 15 percent of the western states. High-stakes tests will become more common throughout the nation as No Child Left Behind is implemented, and high school graduation exams, in particular,

will become more common in the South, Southwest, and West in the future. Over the next decade, the western states will experience the greatest increase in the proportion of states with high school graduation exams by region.¹²

Race Demographics

High-stakes tests and high school graduation exams tend to be found in states with higher percentages of African-Americans and Hispanics and lower percentages of Caucasians. Among states with higher percentages of African-Americans than the nation as whole, 88 percent have high-stakes tests and 75 percent have high school graduation exams. None of the ten states with the lowest populations of African-Americans have implemented high-stakes tests, whereas all of the ten states with the highest populations of African-Americans have done so. None of the ten states with the lowest populations of African Americans have implemented high school graduation exams, while all but one of the ten states with the highest populations of African Americans have done so.

Eighty-nine percent and 67 percent of the states with percentages of Hispanics greater than the nation have high-stakes tests and high school graduation exams respectively. Conversely, 42 percent and 18 percent of the states with percentages of Caucasians greater than the nation have implemented high-stakes tests and high school graduation exams, respectively.¹³ Students from racial minority backgrounds are subjected to high-stakes tests at higher rates than their white peers. This trend does not hold true for American Indians and Asians.

Socio-economic Demographics

High-stakes tests and high school graduation exams also affect students from lower socioeconomic backgrounds disproportionately. High-stakes tests and high school graduation exams are disproportionately found in states with the greatest degrees of poverty. Economically disadvantaged students are most often found in the South and the Southwest and are least often found in the Northeast and Midwest. As shown, states in these regions have high-stakes testing policies. In addition, 81 percent and 56 percent of the states with child poverty levels greater than the nation have high-stakes tests and high school graduation exams respectively. Seventy percent of the states with the greatest 1990-1998 increases in the number of children living in poverty have or have plans to implement such tests as well.¹⁴ Thus, high-stakes tests are more often implemented in states that have poorer students and poor achievement.

A State-by-State Analysis of Changes in Student Achievement After the Implementation of High-Stakes Tests and High School Graduation Exams

The purpose of this study is to determine whether the introduction of high-stakes tests affected academic achievement in the states with high-stakes tests and high school graduation exams written into their testing policies.

The states examined in this analysis have used high-stakes tests and high school graduation exams to improve academic achievement for as many as 20 years. They lead the nation in school closures, school interventions, state takeovers, and

teacher/administrator dismissals that have occurred, at least in part, because of low-test scores. These states also have the most stringent K-8 promotion/retention and high school graduation exams policies in the nation.

The following policy questions are addressed:

1. From the year in which stakes were attached to test performance at grades 1 - 8:
 - a. How did National Assessment of Educational Progress (NAEP) scores change given fluctuations in exemption rates?
 - i. How did grade 4 math achievement change?
 - ii. How did grade 8 math achievement change?
 - iii. How did grade 4 reading achievement change?
2. From the year in which the first graduating class was required to pass a high school graduation exam in each state (and exam revisions thereafter, if applicable):
 - a. How did American College Test (ACT) scores change given fluctuations in participation rates?
 - b. How did Scholastic Aptitude Test (SAT) scores change given fluctuations in participation rates?
 - c. How did Advanced Placement (AP) scores change given fluctuations in participation rates?

The indicators of academic achievement used in this study include four standardized and widely used tests that overlap the same curriculum domains as high-stakes state tests. Scores from the NAEP, the *Nation's Report Card*, are used to examine the effects of high-stakes testing in grades 1 through 8. Scores from the ACT and SAT college entrance exams are used in conjunction with data taken from the AP program to

examine the effects of high-stakes high school graduation exams at the high school level. Again, scores on the individual tests used by the states are not analyzed for evidence of gains in academic achievement because such scores are easily manipulated through test preparation, teaching to the test, the exclusion of certain students, and a narrowing of the curriculum to only the tested subjects.

The external indicators used in this study do have their weaknesses as well, however. For a more detailed discussion of these weaknesses and the methods used to conduct this study see the Technical Appendix. An overview of each state's testing policies, the trend lines used to examine how academic achievement changed after the introduction of high-stakes tests or a high school graduation exam, and the implications drawn from the data in each state per indicator are also included in the Technical Appendix (pg. 2-4).

In short, if changes in scores after the introduction of high-stakes tests are related to the rates by which students are exempt or participate in these tests, the effects of high-stakes or high school graduation tests are classified as **unclear**.¹⁵ If exemption or participation rates are unrelated to changes in score, the effects of high-stakes tests are classified as **increases** or **decreases** and **weak** or **strong**.

Overall effects are classified as **weak** if increases or decreases are illustrated on one of two or three indicators, and **strong** if all indicators illustrate increases or decreases on academic achievement. For the NAEP analyses, for example, if a state illustrated **decreases** in grade 4 math achievement but **unclear** effects in grade 8 math achievement, the state would be classified as illustrating **weak** evidence that math achievement **decreased** after high-stakes were attached to tests in that state. If the same state

illustrated increases in grade 4 reading achievement, because the grade 4 reading NAEP was the only indicator of reading achievement available for this study, the state would be classified as illustrating **strong** evidence that reading achievement **increased** after high-stakes were attached to tests in that state. All effects are calculated in comparison to the nation to help control for whether effects at the state level are genuine or mere reflections of the national trend.¹⁶

A brief overview of each state's testing policies, the assertions drawn per indicator, and the overall findings that are drawn for each state are outlined below.

ALABAMA

HIGH-STAKES TESTS:¹⁷

High-stakes were first attached to tests in Alabama in 1996.

NAEP CHANGE

Overall NAEP grade 4 math scores increased at the same time the percentage of students exempted from the NAEP stayed the same. After stakes were attached to tests in Alabama, grade 4 math achievement **increased**.

Overall NAEP math grade 8 scores increased at the same time the percentage of students exempted from the NAEP decreased. After stakes were attached to tests in Alabama, grade 8 math achievement **increased**.

Overall NAEP grade 4 reading scores matched the nation at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Alabama, grade 4 reading achievement **decreased**.

HIGH SCHOOL GRADUATION EXAMS:

High school students in Alabama must pass Alabama's High School Graduation Test to receive a high school diploma. The class of 1985 was the first and the class of 1993 was the second graduating class required to pass different versions of a high school graduation exam to receive a diploma.

ACT CHANGE

Overall ACT scores increased at the same time the percentage of students participating in the ACT increased. After Alabama's high school graduation exams were implemented, student achievement **increased**.

SAT CHANGE

Overall SAT scores increased at the same time the percentage of students participating in the SAT decreased. After Alabama's high school graduation exams were implemented, how student achievement changed is **unclear**.

AP CHANGE

Overall rates by which students passed AP exams increased at the same time the percentage of students participating in the AP exams decreased. After Alabama's high school graduation exams were implemented, how student achievement changed is **unclear**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **strong** evidence to suggest that after high-stakes were attached to tests in Alabama, math achievement **increased** and reading achievement **decreased**.

High school graduation exams

There is **weak** evidence to suggest that after the implementation of Alabama's high school graduation exams, student achievement **increased**.

CALIFORNIA

HIGH-STAKES TESTS:

High-stakes were first attached to tests in California in 1999.

NAEP CHANGE

Overall NAEP grade 4 math scores increased at the same time the percentage of students exempted from the NAEP decreased. After stakes were attached to tests in California, grade 4 math achievement **increased**.

Overall NAEP math grade 8 scores decreased at the same time the percentage of students exempted from the NAEP decreased. After stakes were attached to tests in California, how grade 8 math achievement changed is **unclear**.

HIGH SCHOOL GRADUATION EXAMS: N/A

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **weak** evidence to suggest that after high-stakes were attached to tests in California, math achievement **increased**.

High school graduation exams - N/A

COLORADO

HIGH-STAKES TESTS: N/A

High-stakes were first attached to tests in 2000. Data on effectiveness are not yet available

HIGH SCHOOL GRADUATION EXAMS: N/A

DELAWARE

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Delaware in 1998.

NAEP CHANGE

Overall NAEP reading grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased at the same rate as the nation. After stakes were attached to tests in Delaware, grade 4 reading achievement **increased**.

HIGH SCHOOL GRADUATION EXAMS: N/A

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **strong** evidence to suggest that after high-stakes were attached to tests in Delaware, reading achievement **increased**.

High school graduation exams – N/A

FLORIDA

HIGH-STAKES TESTS: N/A

HIGH SCHOOL GRADUATION EXAMS:

High school students in Florida must pass the High School Competency Test (HSCT) to receive a diploma. The class of 1979 was the first, the class of 1990 was the second, and the class of 1996 was the third graduating class required to pass different versions of a high school graduation exam to receive a diploma.

ACT CHANGE

Overall ACT scores decreased at the same time the percentage of students participating in the ACT increased. After Florida's high school graduation exams were implemented, how student achievement changed is **unclear**.

SAT CHANGE

Overall SAT scores fell at the same time the percentage of students participating in the ACT increased. After Florida's high school graduation exams were implemented, how student achievement changed is **unclear**.

AP CHANGE

Overall rates by which students passed AP exams increased at the same time the percentage of students participating in the AP exams decreased. After Florida's high school graduation exams were implemented, how student achievement changed is **unclear**.

OVERALL FINDINGS:

Tests to which high-stakes are attached – N/A

High school graduation exams

How achievement changed after the implementation of Florida's high school graduation exams is **unclear**.

GEORGIA

HIGH-STAKES TESTS: N/A

HIGH SCHOOL GRADUATION EXAMS:

High school students in Georgia must pass the Georgia High School Graduation Test (GHS GT) to receive a diploma. The class of 1984 was the first and the class of 1995 was the second graduating class required to pass different versions of a high school graduation exam to receive a diploma.

ACT CHANGE

Overall ACT scores decreased at the same time the percentage of students participating in the ACT stayed the same. After Georgia's high school graduation exams were implemented, student achievement **decreased**.

SAT CHANGE

Overall SAT scores increased at the same time the percentage of students participating in the SAT decreased. After Georgia's high school graduation exams were implemented, how student achievement changed is **unclear**.

AP CHANGE

Overall rates by which students passed AP exams increased at the same time the percentage of students participating in the AP exams decreased. After Georgia's high school graduation exams were implemented, how student achievement changed is **unclear**.

OVERALL FINDINGS:

Tests to which high-stakes are attached – N/A

High school graduation exams

There is **weak** evidence to suggest that after the implementation of Georgia's high school graduation exams, student achievement **decreased**.

INDIANA

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Indiana in 1988.

NAEP CHANGE

Overall NAEP math grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Indiana, how grade 8 math achievement changed is **unclear**.

Overall NAEP math grade 8 scores increased at the same time the percentage of students exempted from the NAEP matched the nation. After stakes were attached to tests in Indiana, grade 8 math achievement **increased**.

HIGH SCHOOL GRADUATION EXAMS:

High school students in Indiana must pass Indiana's Graduation Qualifying Exam (GQE) to receive a diploma. The class of 2000 was the first graduating class required to pass the GQE to receive a diploma.

ACT CHANGE

Overall ACT scores increased at the same time the percentage of students participating in the ACT decreased. After Indiana's high school graduation exam was implemented, how student achievement changed is **unclear**.

SAT CHANGE

Overall SAT scores increased at the same time the percentage of students participating in the SAT decreased. After Indiana's high school graduation exam was implemented, how student achievement changed is **unclear**.

AP CHANGE

Overall rates by which students passed AP exams increased at the same time the percentage of students participating in the AP exams decreased. After Indiana's high school graduation exam was implemented, how student achievement changed is **unclear**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **weak** evidence to suggest that after high-stakes were attached to tests in Indiana, math achievement **increased**.

High school graduation exams

How achievement changed after the implementation of Indiana's high school graduation exam is **unclear**.

KENTUCKY

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Kentucky in 1994.

NAEP CHANGE

Overall NAEP math grade 4 scores decreased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Kentucky, grade 4 math achievement **decreased**.

Overall NAEP math grade 8 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Kentucky, how grade 8 math achievement changed is **unclear**.

Overall NAEP reading grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Kentucky, how grade 4 reading achievement changed is **unclear**.

HIGH SCHOOL GRADUATION EXAMS: N/A

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **weak** evidence to suggest that after high-stakes were attached to tests in Kentucky, math achievement **decreased**. How reading achievement changed after high-stakes were attached to tests in Kentucky is **unclear**.

High school graduation exams – N/A

LOUISIANA

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Louisiana in 1989.

NAEP CHANGE

Overall NAEP math grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Louisiana, how grade 4 math achievement changed is **unclear**.

Overall NAEP math grade 8 scores increased at the same rate as the nation and at the same time the percentage of students exempted from the NAEP stayed the same. After stakes were attached to tests in Louisiana, how grade 8 math achievement changed is **unclear**.

Overall NAEP reading grade 4 scores stayed the same at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Louisiana, grade 4 reading achievement **decreased**.

HIGH SCHOOL GRADUATION EXAMS:

High school students in Louisiana must pass Louisiana's Graduation Exit Exam (GEE) to receive a diploma. The class of 1991 was the first graduating class required to pass the Graduation Exit Exam (GEE) to receive a diploma.

ACT CHANGE

Overall ACT scores decreased at the same time the percentage of students participating in the ACT increased. After Louisiana's high school graduation exam was implemented, how student achievement changed is **unclear**.

SAT CHANGE

Overall SAT scores increased at the same time the percentage of students participating in the SAT decreased. After Louisiana's high school graduation exam was implemented, how student achievement changed is **unclear**.

AP CHANGE

Overall rates by which students passed AP exams increased at the same time the percentage of students participating in the AP exams decreased. After Louisiana's high school graduation exam was implemented, how student achievement changed is **unclear**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

How math achievement changed after high-stakes were attached to tests in Louisiana is **unclear**. There is **strong** evidence to suggest that after high-stakes were attached to tests in Louisiana, reading achievement **decreased**.

High school graduation exams

How achievement changed after the implementation of Louisiana's high school graduation exam is **unclear**.

MARYLAND

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Maryland in 1993.

NAEP CHANGE

Overall NAEP math grade 4 scores decreased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Maryland, grade 4 math achievement **decreased**.

Overall NAEP math grade 8 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Maryland, how grade 8 math achievement changed is **unclear**.

Overall NAEP reading grade 4 scores increased at the same time the percentage of students exempted from the NAEP matched the nation. After stakes were attached to tests in Maryland, grade 4 reading achievement **increased**.

HIGH SCHOOL GRADUATION EXAMS:

High school students must pass the Maryland Functional Tests (MFT) to receive a diploma. The class of 1987 was the first graduating class required to pass the tests to receive a diploma.

ACT CHANGE

Overall ACT scores decreased at the same time the percentage of students participating in the ACT decreased. After Maryland's high school graduation exam was implemented, student achievement **decreased**.

SAT CHANGE

Overall SAT scores decreased at the same time the percentage of students participating in the SAT decreased. After Maryland's high school graduation exam was implemented, student achievement **decreased**.

AP CHANGE

Overall rates by which students passed AP exams increased at the same time the percentage of students participating in the AP exams increased. After Maryland's high school graduation exam was implemented, student achievement **increased**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **weak** evidence to suggest that after high-stakes were attached to tests in Maryland, math achievement **decreased** and **strong** evidence to suggest reading achievement **increased**.

High school graduation exams

There is **weak** evidence to suggest that after the implementation of Maryland's high school graduation exam, student achievement **decreased**.

MASSACHUSETTS

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Massachusetts in 1999.

NAEP CHANGE

Overall NAEP math grade 4 scores increased at the same time there was an equal increase in the percentage of students exempted from the NAEP as compared to the nation. After stakes were attached to tests in Massachusetts, grade 4 math achievement **increased**.

Overall NAEP math grade 8 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Massachusetts, how grade 8 math achievement changed is **unclear**.

HIGH SCHOOL GRADUATION EXAMS: N/A

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **weak** evidence to suggest that after high-stakes were attached to tests in Massachusetts, math achievement **increased**.

High school graduation exams – N/A

MICHIGAN

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Michigan in 1993.

NAEP CHANGE

Overall NAEP math grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Michigan, how grade 4 math achievement changed is **unclear**.

Overall NAEP math grade 8 scores increased at the same time the percentage of students exempted from the NAEP matched the nation. After stakes were attached to tests in Michigan, grade 8 math achievement **increased**.

Overall NAEP reading grade 4 scores increased at the same time the percentage of students exempted from the NAEP decreased. After stakes were attached to tests in Michigan, grade 4 reading achievement **increased**.

HIGH SCHOOL GRADUATION EXAMS: N/A

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **weak** evidence to suggest that after high-stakes were attached to tests in Michigan, math achievement **increased** and **strong** evidence to suggest reading achievement **increased**.

High school graduation exams – N/A

MINNESOTA

HIGH-STAKES TESTS: N/A

HIGH SCHOOL GRADUATION EXAMS:

High school students in Minnesota must pass Minnesota's Basic Skills Test (BST) to receive a diploma. The class of 2000 was the first graduating class required to pass the BST to receive a diploma.

ACT CHANGE

Overall ACT scores decreased at the same time the percentage of students participating in the ACT decreased. After Minnesota's high school graduation exam was implemented, student achievement **decreased**.

SAT CHANGE

Overall SAT scores decreased at the same time the percentage of students participating in the SAT decreased. After Minnesota's high school graduation exam was implemented, student achievement **decreased**.

AP CHANGE

Overall rates by which students passed AP exams increased at the same time the percentage of students participating in the AP exams decreased. After Minnesota's high school graduation exam was implemented, how student achievement changed is **unclear**.

OVERALL FINDINGS:

Tests to which high-stakes are attached – N/A

High school graduation exams

There is **strong** evidence to suggest that after the implementation of Minnesota's high school graduation exam, student achievement **decreased**.

MISSISSIPPI

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Mississippi in 1994.

NAEP CHANGE

Overall NAEP math grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased, particularly from 1993-1996. After stakes were attached to tests in Mississippi, how grade 4 math achievement changed is **unclear**.

Overall NAEP math grade 8 scores increased at the same rate as the nation and at the same time the percentage of students exempted from the NAEP fell below the nation. After stakes were attached to tests in Mississippi, grade 4 math achievement **increased**.

Overall NAEP reading grade 4 scores increased at the same time the percentage of students exempted from the NAEP decreased. After stakes were attached to tests in Mississippi, grade 4 reading achievement **increased**.

HIGH SCHOOL GRADUATION EXAMS:

High school students in Mississippi must pass the Mississippi Functional Literacy Exam (FLE) to receive a diploma. The class of 1989 was the first graduating class required to pass the FLE to receive a diploma.

ACT CHANGE

Overall ACT scores decreased at the same time the percentage of students participating in the ACT increased. After Mississippi's high school graduation exam was implemented, how student achievement changed is **unclear**.

SAT CHANGE

Overall SAT scores decreased at the same time the percentage of students participating in the SAT decreased. After Mississippi's high school graduation exam was implemented, student achievement **decreased**.

AP CHANGE

Overall rates by which students passed AP exams decreased at the same time the percentage of students participating in the AP exams decreased. After Mississippi's high school graduation exam was implemented, student achievement **decreased**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **weak** evidence to suggest that after high-stakes were attached to tests in Mississippi, math achievement **increased** and strong evidence to suggest reading achievement **increased**.

High school graduation exams

There is **strong** evidence to suggest that after the implementation of Mississippi's high school graduation exam, student achievement **decreased**.

MISSOURI

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Missouri in 1993.

NAEP CHANGE

Overall NAEP math grade 4 scores decreased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Missouri, grade 4 math achievement **decreased**.

Overall NAEP math grade 8 scores decreased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Missouri, grade 8 math achievement **decreased**.

Overall NAEP reading grade 4 scores decreased at the same time the percentage of students exempted from the NAEP matched the nation. After stakes were attached to tests in Missouri, grade 4 reading achievement **decreased**.

HIGH SCHOOL GRADUATION EXAMS: N/A

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **strong** evidence to suggest that after high-stakes were attached to tests in Missouri, math achievement **decreased** and reading achievement **decreased**.

High school graduation exams – N/A

NEVADA

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Nevada in 1998.

NAEP CHANGE

Overall NAEP math grade 4 scores decreased at the same time the percentage of students exempted from the NAEP matched the nation. After stakes were attached to tests in Nevada, grade 4 math achievement **decreased**.

HIGH SCHOOL GRADUATION EXAMS:

High school students must pass the Nevada High School Proficiency Examination (HSPE) to receive a diploma. The class of 1981 was the first, the class of 1985 was the second, the class of 1992 was the third, and the class of 1999 was the fourth graduating class required to pass different versions of high school graduation exams in Nevada to receive a diploma.

ACT CHANGE

Overall ACT scores increased at the same time the percentage of students participating in the ACT decreased. After Nevada's high school graduation exams were implemented, how student achievement changed is **unclear**.

SAT CHANGE

Overall SAT scores decreased at the same time the percentage of students participating in the SAT increased. After Nevada's high school graduation exams were implemented, how student achievement changed is **unclear**.

AP CHANGE

Overall rates by which students passed AP exams increased at the same time the percentage of students participating in the AP exams decreased. After Nevada's high school graduation exams were implemented, how student achievement changed is **unclear**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **weak** evidence to suggest that after high-stakes were attached to tests in Nevada, math achievement **decreased**.

High school graduation exams

How achievement changed after the implementation of Nevada's high school graduation exam is **unclear**.

NEW JERSEY

HIGH-STAKES TESTS:

High-stakes were first attached to tests in New Jersey in 1987.

NAEP CHANGE

Overall NAEP math grade 4 scores decreased at the same time the percentage of students exempted from the NAEP was unavailable. After stakes were attached to tests in New Jersey, how grade 4 math achievement changed is **unclear**.

HIGH SCHOOL GRADUATION EXAMS:

High school students in New Jersey must pass the Grade 11 High School Proficiency Test (HSPT-11) to receive a diploma. The class of 1984 was the first, the class of 1987 was the second, and the class of 1995 was the third graduating class required to pass different versions of a high school graduation exam in New Jersey to receive a high school diploma.

ACT CHANGE

Overall ACT scores decreased at the same time the percentage of students participating in the ACT decreased. After New Jersey's high school graduation exams were implemented, student achievement **decreased**.

SAT CHANGE

Overall SAT scores increased at the same time the percentage of students participating in the SAT increased. After New Jersey's high school graduation exams were implemented, student achievement **increased**.

AP CHANGE

Overall rates by which students passed AP exams increased at the same time the percentage of students participating in the AP exams increased. After New Jersey's high school graduation exams were implemented, student achievement **increased**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

How math achievement changed after high-stakes were attached to tests in New Jersey is **unclear**.

High school graduation exams

There is **weak** evidence to suggest that after the implementation of New Jersey's high school graduation exams, student achievement **increased**.

NEW MEXICO

HIGH-STAKES TESTS:

High-stakes were first attached to tests in New Mexico in 1989.

NAEP CHANGE

Overall NAEP math grade 4 scores decreased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in New Mexico, grade 4 math achievement **decreased**.

Overall NAEP math grade 8 scores decreased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in New Mexico, grade 8 math achievement **decreased**.

Overall NAEP reading grade 4 scores decreased at the same time the percentage of students exempted from the matched the nation. After stakes were attached to tests in New Mexico, grade 4 reading achievement **decreased**.

HIGH SCHOOL GRADUATION EXAMS:

High school students in New Mexico must pass the New Mexico High School Competency Exam (NMHSCE) to receive a diploma. The class of 1990 was the first graduating class required to pass the NMHSCE to graduate.

ACT CHANGE

Overall ACT scores decreased at the same time the percentage of students participating in the ACT decreased. After New Mexico's high school graduation exam was implemented, student achievement **decreased**.

SAT CHANGE

Overall SAT scores decreased at the same time the percentage of students participating in the SAT decreased. After New Mexico's high school graduation exam was implemented, student achievement **decreased**.

AP CHANGE

Overall rates by which students passed AP exams decreased at the same time the percentage of students participating in the AP exams decreased. After New Mexico's high school graduation exam was implemented, student achievement **decreased**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **strong** evidence to suggest that after high-stakes were attached to tests in New Mexico, math achievement **decreased** and reading achievement **decreased**.

High school graduation exams

There is **strong** evidence to suggest that after the implementation of New Mexico's high school graduation exam, student achievement **decreased**.

NEW YORK

HIGH-STAKES TESTS:

High-stakes were first attached to tests in New York in 1999.

NAEP CHANGE

Overall NAEP math grade 4 scores increased at the same rate as the nation at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in New York, grade 4 math achievement **decreased**.

Overall NAEP math grade 8 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in New York, how grade 8 math achievement changed is **unclear**.

HIGH SCHOOL GRADUATION EXAMS:

High school students in New York must pass New York's Regents Exams to receive a diploma. The class of 1985 was the first and the class of 1995 was the second class that had to pass different versions of New York's Regents Exams to graduate with a local diploma. The class of 2000 was required to pass a new English Regents Exam, the class of 2001 was required to pass a new Math Regents Exam, and other classes will be required to pass other subject area exams hereafter.

ACT CHANGE

Overall ACT scores decreased at the same time the percentage of students participating in the ACT decreased. After New York's high school graduation exams were implemented, student achievement **decreased**.

SAT CHANGE

Overall SAT scores decreased at the same time the percentage of students participating in the SAT decreased. After New York's high school graduation exams were implemented, student achievement **decreased**.

AP CHANGE

At the same time the rates by which students passed AP exams increased, so did the rates by which students participated in the AP exam. After New York's high school graduation exams were implemented, student achievement **increased**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **weak** evidence to suggest that after high-stakes were attached to tests in New York, math achievement **decreased**.

High school graduation exams

There is **weak** evidence to suggest that after the implementation of New York's high school graduation exams, student achievement **decreased**.

NORTH CAROLINA

HIGH-STAKES TESTS:

High-stakes were first attached to tests in North Carolina in 1997.

NAEP CHANGE

Overall NAEP math grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in North Carolina, how grade 4 math achievement changed is **unclear**.

Overall NAEP math grade 8 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in North Carolina, how grade 8 math achievement changed is **unclear**.

Overall NAEP reading grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in North Carolina, how grade 4 reading achievement changed is **unclear**.

HIGH SCHOOL GRADUATION EXAMS:

High school students in North Carolina must pass the North Carolina Competency Tests to receive a diploma. The class of 1980 was the first and the class of 1998 was the second graduating class required to pass different versions of the competency tests to receive a diploma. The competency tests are equivalent forms of the end-of-grade tests at grade 8. Those students who do not pass the tests at the end of 8th grade must pass the competency tests to graduate.

ACT CHANGE

Overall ACT scores decreased at the same time the percentage of students participating in the ACT increased. After North Carolina's high school graduation exams were implemented, how student achievement changed is **unclear**.

SAT CHANGE

Overall SAT scores increased at the same time the percentage of students participating in the SAT increased. After North Carolina's high school graduation exams were implemented, student achievement **increased**.

AP CHANGE

Overall rates by which students passed AP exams decreased at the same time the percentage of students participating in the AP exams increased. After North Carolina's high school graduation exams were implemented, how student achievement changed is **unclear**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

How math and reading achievement changed after high-stakes were attached to tests in North Carolina is **unclear**.

High school graduation exams

There is **weak** evidence to suggest that after the implementation of North Carolina's high school graduation exams, student achievement **increased**.

OHIO

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Ohio in 1996.

NAEP CHANGE

Overall NAEP math grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Ohio, how grade 4 math achievement changed is **unclear**.

Overall NAEP math grade 8 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Ohio, how grade 8 math achievement changed is **unclear**.

HIGH SCHOOL GRADUATION EXAMS:

High school students in Ohio must pass Ohio's Proficiency Test to receive a diploma. The class of 1994 was the first graduating class required to pass the test to receive a diploma.

ACT CHANGE

Overall ACT scores increased at the same time the percentage of students participating in the ACT increased. After Ohio's high school graduation exam was implemented, student achievement **increased**.

SAT CHANGE

Overall SAT scores increased at the same time the percentage of students participating in the SAT increased. After Ohio's high school graduation exam was implemented, student achievement **increased**.

AP CHANGE

Overall rates by which students passed AP exams decreased at the same time the percentage of students participating in the AP exams decreased. After Ohio's high school graduation exam was implemented, student achievement **decreased**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

How math achievement changed after high-stakes were attached to tests in Ohio is **unclear**.

High school graduation exams

There is **weak** evidence to suggest that after the implementation of Ohio's high school graduation exam, student achievement **increased**.

OKLAHOMA

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Oklahoma in 1989.

NAEP CHANGE

Overall NAEP math grade 4 scores decreased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Oklahoma, grade 4 math achievement **decreased**.

Overall NAEP math grade 8 scores decreased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Oklahoma, grade 8 math achievement **decreased**.

Overall NAEP reading grade 4 scores stayed the same at the same time the percentage of students exempted from the NAEP matched the nation. After stakes were attached to tests in Oklahoma, how grade 4 reading achievement changed is **unclear**.

HIGH SCHOOL GRADUATION EXAMS: N/A

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **strong** evidence to suggest that after high-stakes were attached to tests in Oklahoma, math achievement **decreased**. How reading achievement changed after high-stakes were attached to tests in Oklahoma is **unclear**.

High school graduation exams – N/A

PENNSYLVANIA

HIGH-STAKES TESTS: N/A

High-stakes were first attached to tests in 1999. Data on effectiveness are not yet available

HIGH SCHOOL GRADUATION EXAMS: N/A

SOUTH CAROLINA

HIGH-STAKES TESTS:

High-stakes were first attached to tests in South Carolina in 1998.

NAEP CHANGE

Overall NAEP math grade 4 scores increased at the same time the percentage of students exempted from the NAEP matched the nation's exemption rate. After stakes were attached to tests in South Carolina, grade 4 math achievement **increased**.

Overall NAEP math grade 8 scores increased at the same time the percentage of students exempted from the NAEP decreased as compared to the nation. After stakes were attached to tests in South Carolina, grade 4 math achievement **increased**.

Overall NAEP reading grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in South Carolina, how grade 4 reading achievement changed is **unclear**.

HIGH SCHOOL GRADUATION EXAMS:

High school students in South Carolina must pass South Carolina's Basic Skills Assessment Program (BSAP) Exit Examination to receive a diploma. The class of 1990 was the first graduating class required to pass the BSAP to receive a diploma.

ACT CHANGE

Overall ACT scores decreased at the same time the percentage of students participating in the ACT increased. After South Carolina's high school graduation exam was implemented, how student achievement changed is **unclear**.

SAT CHANGE

Overall SAT score increased at the same time the percentage of students participating in the SAT decreased. After South Carolina's high school exam was implemented, how student achievement changed is **unclear**.

AP CHANGE

Overall rates by which students passed AP exams decreased at the same time the percentage of students participating in the AP exams decreased. After South Carolina's high school graduation exam was implemented, student achievement **decreased**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **strong** evidence to suggest that after high-stakes were attached to tests in South Carolina, math achievement **increased**. How reading achievement changed after high-stakes were attached to tests in South Carolina is **unclear**.

High school graduation exams

There is **weak** evidence to suggest that after the implementation of South Carolina's high school graduation exam, student achievement **decreased**.

TENNESSEE

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Tennessee in 2000.

NAEP CHANGE

Overall NAEP math grade 4 scores decreased at the same time the percentage of students exempted from the NAEP decreased. After stakes were attached to tests in Tennessee, how grade 4 math achievement changed is **unclear**.

Overall NAEP math grade 8 scores decreased at the same time the percentage of students exempted from the NAEP decreased as compared to the nation. After stakes were attached to tests in Tennessee, how grade 8 math achievement changed is **unclear**.

HIGH SCHOOL GRADUATION EXAMS:

High school students in Tennessee must pass the Tennessee Comprehensive Assessment Program Competency Test (TCAP/CT) to receive a diploma. The class of 1986 was the first and the class of 1998 was the second graduating class required to pass different versions of the TCAP/CT to receive a diploma.

ACT CHANGE

Overall ACT scores increased at the same time the percentage of students participating in the ACT increased. After Tennessee's high school graduation exams were implemented, student achievement **increased**.

SAT CHANGE

Overall SAT scores decreased at the same time the percentage of students participating in the SAT decreased. After Tennessee's high school graduation exams were implemented, student achievement **decreased**.

AP CHANGE

Overall rates by which students passed AP exams increased at the same time the percentage of students participating in the AP exams decreased. After Tennessee's high school graduation exams were implemented, how student achievement changed is **unclear**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

How math achievement changed after high-stakes were attached to tests in Tennessee is **unclear**.

High school graduation exams

How achievement changed after the implementation of Tennessee's high school graduation exam is **unclear**.

TEXAS

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Texas in 1993.

NAEP CHANGE

Overall NAEP math grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Texas, how grade 4 math achievement changed is **unclear**.

Overall NAEP math grade 8 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Texas, how grade 8 math achievement changed is **unclear**.

Overall NAEP reading grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Texas, how grade 4 reading achievement changed is **unclear**.

HIGH SCHOOL GRADUATION EXAMS:

High school students in Texas must pass the Texas Assessment of Academic Skills (TAAS) to receive a diploma. The class of 1983 was the first graduating class required to take a high school graduation exam but did not have to pass it to receive a high school diploma. The class of 1987 was the first graduating class and the class of 1992 was the second graduating class required to pass different versions of a high school graduation exam to graduate.

ACT CHANGE

Overall ACT scores increased at the same time the percentage of students participating in the ACT decreased. After Texas's high school graduation exams were implemented, how student achievement changed is **unclear**.

SAT CHANGE

Overall SAT scores decreased at the same time the percentage of students participating in the SAT increased. After Texas's high school graduation exams were implemented, how student achievement changed is **unclear**.

AP CHANGE

The percentage of students passing the AP exams decreased at the same time the percentage of students participating in the AP exams increased. After Texas's high school graduation exams were implemented, how student achievement changed is **unclear**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

How math and reading achievement changed after high-stakes were attached to tests in Texas is **unclear**.

High school graduation exams

How achievement changed after the implementation of Texas's high school graduation exam is **unclear**.

VIRGINIA

HIGH-STAKES TESTS:

High-stakes were first attached to tests in Virginia in 1998.

NAEP CHANGE

Overall NAEP math grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Virginia, how grade 4 math achievement changed is **unclear**.

Overall NAEP math grade 8 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in Virginia, how grade 8 math achievement changed is **unclear**.

Overall NAEP reading grade 4 scores increased at the same time the percentage of students exempted from the NAEP matched the nation. After stakes were attached to tests in Virginia, grade 4 reading achievement **increased**.

HIGH SCHOOL GRADUATION EXAMS:

High school students in Virginia must pass Virginia's Literacy Passport Test (LPT) to receive a diploma. The class of 1986 was the first graduating class required to pass the LPT to receive a diploma. The LPT was last used for those students who were in the 6th grade in 1998 (the class of 2004). The LPT is being phased out and replaced by Virginia's Standards of Learning (SOL) tests. Since the spring of 1998, students in Virginia began taking Virginia's SOLs.

ACT CHANGE

Overall ACT scores decreased at the same time the percentage of students participating in the ACT increased. After Virginia's high school graduation exams were implemented, how student achievement changed is **unclear**.

SAT CHANGE

Overall SAT scores decreased at the same time the percentage of students participating in the SAT increased. After Virginia's high school graduation exams were implemented, how student achievement changed is **unclear**.

AP CHANGE

Overall rates by which students passed AP exams decreased at the same time the percentage of students participating in the AP exams increased. After Virginia's high school graduation exams were implemented, how student achievement changed is **unclear**.

OVERALL FINDINGS:

Tests to which high-stakes are attached

How math achievement changed after high-stakes were attached to tests in Virginia is **unclear**. There is **strong** evidence to suggest that after high-stakes were attached to tests in Virginia, reading achievement **increased**.

High school graduation exams

How achievement changed after the implementation of Virginia's high school graduation exam is **unclear**.

WEST VIRGINIA

HIGH-STAKES TESTS:

High-stakes were first attached to tests in West Virginia in 1989.

NAEP CHANGE

Overall NAEP math grade 4 scores increased at the same time the percentage of students exempted from the NAEP increased. Overall, after stakes were attached to tests in West Virginia, grade 4 math achievement **decreased**.

Overall NAEP math grade 8 scores increased at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in West Virginia, how grade 8 math achievement changed is **unclear**.

Overall NAEP reading grade 4 scores stayed the same at the same time the percentage of students exempted from the NAEP increased. After stakes were attached to tests in West Virginia, grade 4 reading achievement **decreased**.

HIGH SCHOOL GRADUATION EXAMS: N/A

OVERALL FINDINGS:

Tests to which high-stakes are attached

There is **weak** evidence to suggest that after high-stakes were attached to tests in West Virginia, math achievement **decreased** and strong evidence to suggest reading achievement **decreased**.

High school graduation exams – N/A

Findings

How academic achievement changed after the implementation of high-stakes tests and high school graduation exams across states is summarized in Table 2.

Table 2 - Overall Results of How Academic Achievement Changed After the Implementation of High-Stakes Tests and High School Graduation Exams

State	Overall changes in score						
	High-stakes test indicators:			High school graduation exam indicators:			Effects by state
	NAEP Math Grade 4	NAEP Math Grade 8	NAEP Reading Grade 4	ACT	SAT	AP Exam	
Alabama	+	+	-	+			3 positive 1 negative
California	+						1 positive 0 negative
Colorado							N/A
Delaware			+				1 positive 0 negative
Florida							0 positive 0 negative
Georgia				-			0 positive 1 negative
Indiana		+					1 positive 0 negative
Kentucky	-						0 positive 1 negative
Louisiana			-				0 positive 1 negative
Maryland	-		+	-	-	+	2 positive 3 negative
Massachusetts	+						1 positive 0 negative
Michigan		+	+				2 positive 0 negative
Minnesota				-	-		0 positive 2 negative
Mississippi		+	+		-	-	2 positive 2 negative
Missouri	-	-	-				0 positive 3 negative
Nevada	-						0 positive 1 negative
New Jersey				-	+	+	2 positive 1 negative
New Mexico	-	-	-	-	-	-	0 positive 6 negative
New York	-			-	-	+	1 positive 3 negative
North Carolina					+		1 positive 0 negative
Ohio				+	+	-	2 positive 1 negative

(Only overall increases (+) and decreases (-) are shown for state scores in which participation and exemption rates could be controlled and for which data were available. Unclear results, results for which states in which high-stakes tests were not yet used before the last year data were available – 1998 for NAEP reading, and results for states in which data were not available are not shown)

Table 2, continued

State	Overall changes in score						
	High-stakes test indicators:			High school graduation exam indicators:			Effects by state
	NAEP Math Grade 4	NAEP Math Grade 8	NAEP Reading Grade 4	ACT	SAT	AP Exam	
Oklahoma	—	—					0 positive 2 negative
Pennsylvania							N/A
South Carolina	+	+				—	2 positive 1 negative
Tennessee				+	—		1 positive 1 negative
Texas							0 positive 0 negative
Virginia			+				1 positive 0 negative
West Virginia	—		—				0 positive 2 negative
Effects by indicator	4 positive 8 negative	5 positive 3 negative	5 positive 5 negative	3 positive 6 negative	3 positive 6 negative	3 positive 4 negative	

An analysis of this table reveals:

Achievement Across States:

- The states with high-stakes tests showing the most improvements in academic achievement as compared to the nation are Alabama and Michigan. New Jersey, Ohio, and South Carolina also demonstrated moderate gains in academic achievement after high-stakes and high school graduation exams were implemented.
- The states with high-stakes tests posting the greatest declines in academic achievement as compared to the nation are Minnesota, Missouri, New Mexico, New York, Oklahoma, and West Virginia. Maryland also demonstrated

moderate losses in academic achievement after high-stakes and high school graduation exams were implemented.

Achievement Across Measures:

NAEP - Math Grade 4

- 67 percent of the states posted overall decreases in NAEP math grade 4 performance as compared to the nation after high-stakes tests were implemented.

NAEP - Math Grade 8

- 63 percent of the states posted increases in NAEP math grade 8 performance as compared to the nation after high-stakes tests were implemented.

NAEP - Reading Grade 4

- 50 percent of the states posted increases in NAEP reading grade 4 performance as compared to the nation after high-stakes tests were implemented.

ACT

- 67 percent of the states posted decreases in ACT performance as compared to the nation after high school graduation exams were implemented.
- ACT participation rates increased as compared to the nation in 50 percent of the states with high school graduation exams from 1994-2001.¹⁸

SAT

- 67 percent of the states posted decreases in SAT performance as compared to the nation after high school graduation exams were implemented.
- SAT participation rates fell as compared to the nation in 61 percent of the states with high school graduation exams.

AP Exam

- 57 percent of the states posted decreases in AP performance as compared to the nation after high school graduation exams were implemented.
- Participation rates fell as compared to the nation in 67 percent of the states with high school graduation exams.

Conclusions

Analyses of scores and participation rates for the NAEP, ACT, SAT, and AP tests suggest that there is inadequate evidence to support the proposition that high-stakes tests and high school graduation exams increase student achievement. The data presented in this study suggest that after the implementation of high-stakes tests, nothing much happens. That is, no consistent effects across states were noted. Scores seemed to go up or down in a random pattern, after high-stakes tests are introduced, indicating no consistent state effects as a function of a high-stakes testing policy. For example, after high-stakes were attached to tests, grade 4 math achievement decreased. Grade 8 math achievement slightly increased and grade 4 reading achievement stayed the same. The states that have used high-stakes tests, in some cases for over the past decade, have continued to perform much like the nation after writing high-stakes tests into their testing policies.

The data presented in this study also suggest, however, that after the implementation of high school graduation exams, academic achievement apparently decreases. After high school graduation exams were implemented, achievement as indicated by ACT, SAT, and AP scores declined. Indeed, on balance, these analyses

suggest that high-stakes tests and high school graduation exams may tend to inhibit the academic achievement of students, not foster their academic growth (see Table 1).

Although test scores on state-administered tests usually increase after high-stakes testing policies are implemented, the evidence presented here suggests that in these instances students are learning the content of the state-administered test and perhaps little else. This learning does not, however, appear to have any meaningful carryover effect.

Notes and References

¹ Data were collected from the National Assessment of Educational Progress (NAEP) website at <http://nces.ed.gov/nationsreportcard>

² Data were collected from the American College Testing (ACT) website at <http://www.act.org> and personal communications with Jim Maxey, Assistant Vice President for Applied Research for ACT.

³ SAT data were collected from the College Board website at <http://www.collegeboard.com>

⁴ Advanced Placement (AP) Exam data were collected from the College Board website at <http://www.collegeboard.com>

⁵ U.S. Department of Education. (1983). *A nation at risk: The imperative for educational reform*. Retrieved from <http://www.ed.gov/pubs/NatAtRisk/index.html>

⁶ Ibid. The states in which low-scores may be used to dismiss teachers are Alabama, Colorado, Delaware, Louisiana, Maryland, Massachusetts, Michigan, Missouri, Nevada, New Mexico, New York, North Carolina, Oklahoma, South Carolina, Texas, and West Virginia.

⁷ The stakes listed in this table include only those stakes that are written into state policy. In many of the states, districts and schools are given the right to employ such accountability measures but such decisions are made at the local level. Only state policies are listed herein.

⁸ Information included has been pooled from each state department web site, multiple telephone interviews and email exchanges with state testing personnel and testing directors, and Quality Counts. (2001). *Education Week*. Retrieved from <http://www.edweek.org/sreports/qc01>. A state department testing official in each state verified the information included in this description.

⁹ Whether states were classified as more or less centralized followed Elazar's classification of state's governmental traditions of centralism and localism. Elazar, D. J. (1984). *American federalism: A view from the states* (3rd ed.). New York, NY: Harper and Row, Publishers. Hawaii and Alaska were not included in his analyses.

¹⁰ 1997 data were downloaded from the National Center for Education Statistics website at <http://nces.ed.gov> Numbers were adjusted for cost of living.

¹¹ 2000 data were downloaded from the Census Bureau website at <http://www.census.gov>

¹² Ibid.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ The rates by which students participate or are exempted from a test affect year-to-year test scores. Usual is the case if scores increase from one year to the next, the reason for the increase is because a significantly smaller percentage of students participated in the test the following year. Likewise, if scores decrease from one year to the next usual is the case scores decreased because a significantly larger percentage of students participated in the test the following year. The inverse holds true for exemption rates. If more students are exempted from a test one year, usual is the case that because the students who are exempted are usually LEP or special education students—students who traditionally perform poorly on tests—scores will increase and vice versa. For a further discussion see Amrein, A. L. & Berliner, D. C. (2002, March 28).

High-stakes testing, uncertainty, and student learning. *Education Policy Analysis Archives*, 10(18). Retrieved from <http://epaa.asu.edu/epaa/v10n18/>

¹⁶ For a discussion of control groups see Glass, G.V. (1988). Quasi-experiments: The case of interrupted time series. In R. M. Jaeger (Ed.), *Complementary methods for research in education*. Washington, D.C.: American Educational Research Association.

¹⁷ Again, we define high-stakes as consequences that are attached to tests beyond the accountability measures that have been in place for years, for example, publishing school and district test scores in the newspaper. The year in which a state is defined as a high-stakes state depends upon the point at which more extreme, or tighter, stakes were attached to test performance. For example, a high-stake would be defined as giving a student the right to transfer to another school if the school in which the student was situated performed poorly for a period of years. Information included has been pooled from each state department web site, multiple telephone interviews and email exchanges with state testing personnel and testing directors, and Quality Counts. (2001). *Education Week*. Retrieved from <http://www.edweek.org/sreports/qc01>. A state department testing official in each state verified the information included in this description.

¹⁸ Amrein, A. L. & Berliner, D. C. (2002, March 28). High-stakes testing, uncertainty, and student learning. *Education Policy Analysis Archives*, 10(18). Retrieved from <http://epaa.asu.edu/epaa/v10n18/>