

# Mixed Messages: American Indian Achievement Before and Since the Implementation of No Child Left Behind

---

David R. Garcia

This article uses state-level achievement data to examine the academic progress of Arizona American Indian elementary public school students before and since the implementation of the No Child Left Behind (NCLB) Act. In most subjects and grades, American Indian students are making greater progress since the implementation of NCLB. Generally, American Indian students outpace all other major racial/ethnic groups. Compared to their White counterparts, however, American Indian students are most often either falling further behind or are not making sufficient progress to close the achievement gap. Most of the progress since NCLB coincides with changes to Arizona's state assessments and once data from a one-time test score spike are omitted, the achievement rates of American Indian students drop precipitously. The volatility of these results raises concerns about the integrity of state assessments in high-stakes accountability systems. Finally, recommendations are made to improve the NCLB large-scale assessment and evaluation provisions.

## Introduction

**T**he federal No Child Left Behind (NCLB) Act of 2001 ushered in unprecedented levels of assessment aimed at enhancing "accountability" in American public schools. NCLB requires all states to implement a statewide, criterion-referenced test (CRT) and the law includes the challenging expectation that all students reach proficiency on their respective state CRT by 2013-2014. This comprehensive goal necessitates that schools, districts, and states disaggregate test scores by racial/ethnic subgroups in order to track the performance of the students within these groups.

The disaggregation of test scores by racial/ethnic subgroups is intended to make closing the achievement gap a "national priority" (U.S. Department of Education [USDOE], 2005). According to federal officials, "measuring progress by subgroups will demonstrate not just that overall student performance is

improving, but also that achievement gaps are closing between disadvantaged students and other students” (USDOE, 2004b). NCLB is intended to bring to light the languishing academic achievement levels of underrepresented students. In addition, the law is described as having “punch” due to corrective action provisions that establish consequences for inadequate school performance and the ability of parents to transfer their students out of low-performing schools at school district expense (USDOE, 2004b).

This article does not debate the merits of NCLB; arguments for and against high-stakes assessments and accountability systems have been made elsewhere (Amrein & Berliner, 2002; Carnoy & Loeb, 2002; Nichols & Berliner, 2007; Raymond & Hanushek, 2003). Certainly, NCLB stands in contrast to critics who argue against the use of a single, standardized test in high-stakes decisions (American Educational Research Association, 1999). Researchers fear that an over-reliance on testing could result in deleterious unintended consequences such as narrowing of the curriculum and teaching to the test (Jones, Jones, & Hargrove, 2003; Orfield & Kornhaber, 2001). Furthermore, ethnic minority students and the schools they attend face additional challenges in a high-stakes testing environment because such students commonly score lower on standardized tests than their White peers. Many ethnic minority students exhibit low standardized test scores due to language difficulties associated with learning English as a second language, insufficient exposure to academic English, and test items that are developed for the majority population that do not reflect the cultural experiences of ethnic minority students (Albus, Thurlow, & Liu, 2002; Brescia & Fortune, 1988; Young, Rudes, Shaycoft, & Hopstock, 1988). Finally, some have questioned the psychometric validity of testing ethnic minority students, including American Indian students (Bolo & Varrati, 1983; McDiarmid, 1971; McInerney, 1992).

Despite the chorus of criticism and admonitions against the use of high-stakes standardized tests as the sole measure of American public schools, the reality of the legislation is that policymakers will focus on test score data to make decisions about individual schools and the future direction of federal education policy. Now, with reauthorization on the horizon, this special issue comes at an opportune time to examine academic progress since the passage of NCLB.

The purpose of this article is to evaluate the achievement rates of Arizona American Indian students before and since the implementation of NCLB. The study examines three academic achievement rates before and since NCLB; (1) the achievement rates of American Indian students as a group; (2) the achievement rates of American Indian students relative to White students; and, in order to put American Indian achievement rates in better perspective, (3) the achievement rates of Black and Hispanic students relative to White students. Academic achievement is measured by scoring at or above the proficiency level on Arizona’s CRT.

The achievement rates of American Indian students in Arizona since the implementation of NCLB indicate that they are making greater progress in most

subjects and grades. In addition, American Indian achievement rates generally outpace all other racial/ethnic groups except White students. Compared to their White counterparts, American Indian students are most often either falling further behind or are not making sufficient progress to close the achievement gap. Most of the progress since NCLB, however, coincides with changes in Arizona's state assessments and once data from a test score spike in 2005 are omitted, the achievement rates of American Indian students drop precipitously. The volatility of these results raises concerns about the integrity of state assessments in high-stakes accountability systems. The findings have implications for how researchers and policymakers assess the impact of NCLB in the future and for the academic assistance provided to individual students at the classroom level.

### **Literature Review**

This section opens with a brief introduction to the NCLB assessment and accountability provisions. The existing literature on the academic achievement of American Indian/Alaska Native students under NCLB is then discussed before contextualizing this study in Arizona.

#### Assessment and Accountability under NCLB

NCLB introduced two primary policy shifts in the areas of assessment and accountability: extensive testing and comprehensive accountability. Beginning with the 2005-06 school year, NCLB required all states to administer annual CRTs aligned with state standards. The tests are to be administered in reading/language arts and mathematics in grades 3 through 8 and at least once in grades 10 through 12. Schools are held to strict requirements to test all students; the expectation is that 95 percent of students participate in state assessments (USDOE, 2004a).

The legislation also has had a far-reaching impact on how schools and districts are held accountable for student performance. Accountability is conceptualized as measuring academic outcomes and applying consequences for schools that fail to meet expectations. Under NCLB, schools, districts, and states are required to make adequate yearly progress (AYP) toward the goal of 100 percent proficiency on state academic standards by the 2013-14 school year. In order to make AYP, schools are required to meet annual objectives in reading/language arts and mathematics for each student subgroup as well as for the whole school. This article focuses on the racial/ethnic student subgroups but schools are also held accountable for other subgroups such as English language learners and students with disabilities. NCLB reinforces the accountability benchmarks with a progressive set of corrective actions for schools that fail to make AYP, ranging from providing supplemental education services to replacing school staff.

#### Academic Achievement of American Indian Students since NCLB

In April 2004, President George W. Bush mandated a multi-year study of the academic achievement of American Indian/Alaska Native students under NCLB.

The National Indian Education Study (NIES) was initiated for the purpose of improving the ability of American Indian/Alaska Native students to meet the academic requirements set forth by NCLB (Executive Order 13336, 2004). The NIES provides baseline data for the multi-year study. The NIES is a snapshot of the academic achievement of American Indian/Alaska Native students in 2005 based on National Assessment of Education Progress (NAEP) test scores. In nearly all grades and subjects, American Indian/Alaska Native students score either the lowest or among the lowest of all student racial/ethnic subgroups. Arizona is mentioned often as a state with lower levels of academic achievement than other states with substantial American Indian and Alaska Native student populations (USDOE, 2006b).

The lack of pre-NCLB data is the major drawback of the NIES as the means for tracking the academic achievement of American Indian/Alaska Native students over time. The absence of pre-NCLB data limit the conclusions that can be drawn from the study because the research began *after* NCLB was passed. Without pre-NCLB data, one cannot fully assess how achievement rates have changed since NCLB.

Lee (2006) examined trend data from the NAEP both before and since NCLB. The results indicate that national reading achievement has remained flat and that mathematics scores are growing at the same pace after NCLB as before the law was passed. Since the implementation of NCLB, the achievement gaps between Hispanic and Black and White students are not closing. The study did not include American Indian/Alaska Native students.

Thus, the research is still lacking on the achievement of American Indian/Alaska Native students under NCLB. I turn to Arizona state-level CRT data as a relevant data source to establish comparable, longitudinal academic achievement rates for American Indian students before and since NCLB.

#### Setting the Context: Arizona

This study examines the academic achievement rates of Arizona public elementary school students from 2000 to 2006. Arizona is an ideal backdrop for this inquiry because the state has a substantial American Indian student population and has administered a CRT before and after the passage of NCLB. In Arizona, the 41,861 American Indian students enrolled in public elementary schools in fall 2006 represent 6 percent of the statewide elementary student population (Arizona Department of Education [ADE], 2007b). Nationally, 11 percent of all American Indian elementary students are enrolled in Arizona public schools (USDOE, 2006a). I focus on Arizona public elementary schools because these schools are represented consistently in the public release data for the years under study.

At the passage of NCLB, many states had neither standards nor the appropriate assessments to meet the federal law. Arizona, on the other hand, has administered a statewide CRT, the Arizona Instrument to Measure Standards (AIMS), in elementary grades 3, 5, 8, and 10 in mathematics and reading since 2000.

In 2005, policy makers restructured Arizona's CRT. First, to comply fully with the NCLB requirements, grades 4, 6, and 7 were added to expand the testing to all grades 3-8 and the tests were aligned across grades. Second, the state altered the minimum passing score on many of the existing assessments in third, fifth, and eighth grades (Kossan, Ryman, & Konig, 2005).

## Method

### Data

The analysis is based on the state-level public release data from Arizona's CRT. The data represent the percentage of students who have demonstrated proficiency on the Arizona academic standards by scoring at either the *meets* or *exceeds* level on the Arizona CRT. If an Arizona student scores at the *meets* or *exceeds* level, s/he is regarded as having demonstrated proficiency on Arizona's academic standards. For ease of presentation, these students are henceforth described as *proficient* on Arizona's academic standards.

Previous studies have used NAEP data to investigate similar achievement rates but it is important to note that currently NAEP data play only a confirmatory role under NCLB (National Assessment Governing Board, 2002). Schools are not held accountable for NAEP results. State CRT results are what matter most under NCLB. Arizona and federal officials utilize the percentage of proficient students on Arizona's CRT to track the academic progress of Arizona students.

The Arizona CRT data include grades 3, 5, and 8 for the years 2000-2006. The time period 2000-2002 is defined as before NCLB and the time period since the implementation of NCLB includes the years 2003-2006. The 2003 test results (2002-2003 academic year) mark the starting point for the implementation of the AYP requirements for Arizona schools. The data are disaggregated by student racial/ethnic group and the results for each student racial/ethnic group are presented separately. The study focuses on the largest student racial/ethnic subgroups in Arizona, specifically White, Black, Hispanic, and American Indian students.

### Analysis

Ordinary Least Squares (OLS) regression is used to calculate the annual percentage point change in proficient students by grade and subject. OLS regression yields standard slopes that can be used to compare the achievement trends before and since NCLB. Standard slopes are economical for trend analysis because they average across year-to-year fluctuations to represent achievement trends via a single metric that is comparable over time.<sup>1</sup> The achievement trends before and since NCLB were calculated separately to allow the slopes to vary according to the differential rates of progress in each time period. In the following tables, positive values (or slopes) indicate that on average the statewide percentage of proficient students increased from year to year. Negative values indicate that on average the statewide percentage of proficient students decreased from year to year. For ease of interpretation, the trends are referred to as *rates* of progress and decline.

One final comment about the presentation and discussion of test score data. I am careful not to attribute the test scores since the implementation NCLB to the NCLB legislation.<sup>2</sup> The logical chain of reasoning is insufficient to conclude that any of the following data are the direct result of NCLB (Shavelson & Towne, 2002). Certainly, policymakers intended NCLB to initiate a flurry of assessment and accountability activities at the state level and schools are adjusting to the new realities brought forth by these changes. I contend, however, that the achievement rates are the result of a complex melding of actions ranging from changes in state testing policies to teaching and learning within schools, and this article is not intended to untangle this web of interactions. The following test score data have been reported to the public as the primary measure of student academic proficiency and the data are presented accordingly. After the findings section, I discuss the achievement rates since NCLB in light of the broader political context and take a more critical stance on their role as the key indicator in public education.

## Findings

### Initial Achievement Levels and Gaps

Arizona Indian students have historically had the lowest achievement levels of any student subgroup in every grade and subject area. In 2000, a year prior to the passage of NCLB and three years prior to the initial implementation of NCLB in Arizona, only 10 percent of fifth-grade American Indian students and 4 percent of American Indian eighth-grade students tested as proficient in mathematics. In reading, no more than 41 percent of American Indian students tested as proficient in any grade and subject. The achievement gap between American Indian and White students ranged from 22 percent in eighth-grade reading to 45 percent in third-grade mathematics and fifth-grade reading (Table 1).

Table 1 Percent of Proficient Students and Achievement Gap, American Indian and White Students by Subject and Grade, Before NCLB (2000)						
	Mathematics			Reading		
	3	5	8	3	5	8
American Indian	21	10	4	41	34	26
White	66	47	26	81	79	66
Gap	-45	-37	-22	-40	-45	-40

### American Indian Achievement Rates Before and Since the Implementation of NCLB

In fifth and eighth grade, Arizona Indian students made greater rates of progress since the implementation of NCLB in both mathematics and reading compared to the rates before NCLB. In grade 3, however, the achievement rates of American Indian students declined in both subject areas since NCLB.

Mathematics. The most dramatic shifts in the achievement rates of American Indian students since NCLB have occurred in eighth grade. In the years prior to NCLB, the percentage of proficient American Indian students increased by less than one point annually on average.<sup>3</sup> To present the achievement results another way, the percentage of proficient eighth-grade students increased from 4 percent in 2000 to only 5 percent in 2002, an average annual increase of 0.5 percentage points. Since the implementation of NCLB, the percent of proficient American Indian students increased by 14.4 points annually, an increase of 13.9 percentage points compared to the pre-NCLB achievement rate.

Table 2  
Average Annual Percentage Point Change in Proficient American Indian Students by Subject and Grade, Before and Since NCLB

	Mathematics			Reading		
	3	5	8	3	5	8
Before NCLB	7.5	5.5	0.5	5.5	-0.5	1.5
Since NCLB	7.3	11.0	14.4	0.8	7.7	8.0
Difference	-0.2	5.5	13.9	-4.7	8.2	6.5

To put the achievement rates since NCLB in perspective, 7 percent of eighth-grade American Indian students were proficient in 2000 and that figure increased to 44 percent by 2006. In fifth-grade mathematics, the annual increase in the percent of American Indian proficient students doubled since NCLB. In third-grade mathematics, the achievement rate for American Indian students since NCLB was marginally lower compared to the achievement rates before NCLB.

Reading. Since the implementation of NCLB, the average annual percentage of proficient fifth-grade American Indian students increased by 8.2 points compared to the achievement rate before NCLB (Table 2). In eighth grade, the

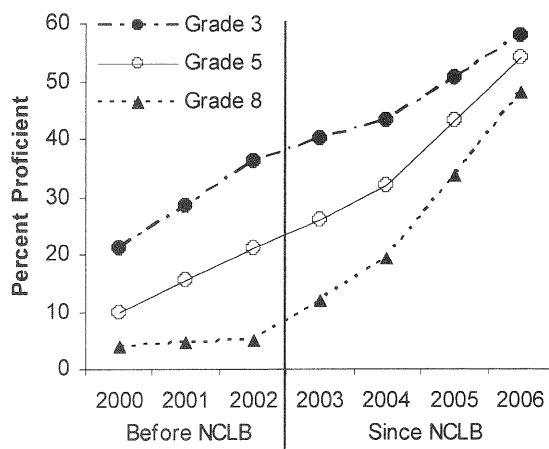


Figure 1. Achievement Rates for American Indian Students in Grades 3, 5, and 8 Mathematics Before and Since NCLB.

average annual rate since NCLB is 6.5 percentage points higher than before NCLB. On the other hand, the third-grade achievement rate since NCLB is negative, meaning that the annual percentage of American Indian students meeting the Arizona standards has declined 4.7 points on average compared to the rates before NCLB.

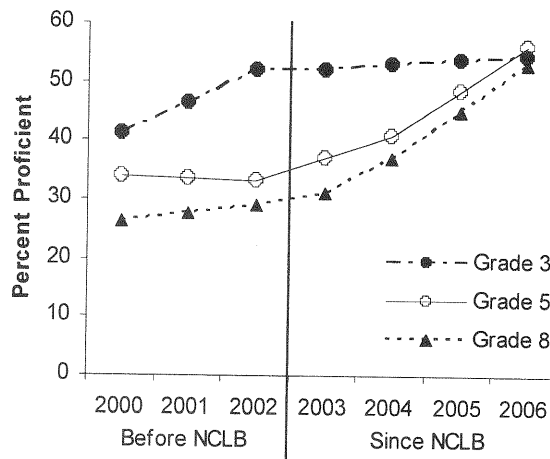


Figure 2. Achievement Rates for American Indian Students in Grades 3, 5, and 8 Reading Before and Since NCLB.

#### How Well are American Indian Students Closing the Achievement Gap?

The following analysis addresses the key policy question of whether the achievement rates of Arizona's American Indian students are steep enough to close the achievement gap with their White counterparts. The analysis compares two independent achievement rates, American Indian and White students. In order for American Indian students to close the achievement gap they must make greater rates of progress relative to their White peers. For example, if the White student achievement rates are positive, the academic progress of American Indian students must be both positive and outpace the rate of White students. Alternatively, if White student achievement rates are negative, American Indian students can close the gap by exhibiting neutral or positive progress rates or less severe declines relative to White students.

Overall, despite the achievement gains presented in the previous section, American Indian students in most subjects and grades have either fallen further behind their White counterparts since the implementation of NCLB or are not closing the achievement gap.

Mathematics. Before NCLB, fifth- and eighth-grade American Indian students were falling behind their White counterparts. On average, the annual percentage point change in proficient American Indian students was -0.5 and -1.0 points lower than the comparable rates for White students (Table 3).



Table 3 Average Annual Percentage Point Change in Proficient Students, Difference between American Indian and White Students, Before and Since NCLB						
	Mathematics			Reading		
	3	5	8	3	5	8
Before NCLB	3.0	-0.5	-1.0	3.0	3.0	-0.5
Since NCLB	3.6	3.2	-3.3	1.3	2.7	3.1
Difference	0.6	3.7	-2.3	-2.7	-0.3	3.6

Note: Positive values indicate higher rates of progress for American Indian students relative to White students. Negative values indicate lower rates of progress for American Indian students relative to White students.

Since NCLB, American Indian fifth-grade students are making greater rates of progress than their White peers. On average, the annual change in the percentage of proficient American Indian students scoring proficient is 3.2 points higher than White students, a net increase of 3.7 percentage points from the rates before NCLB (Figure 3). In eighth grade, however, American Indian students are falling even further behind their White peers in the years since NCLB. On average, the annual change in the percentage of American Indian proficient students is 3.3 points lower than their White peers (Figure 4).

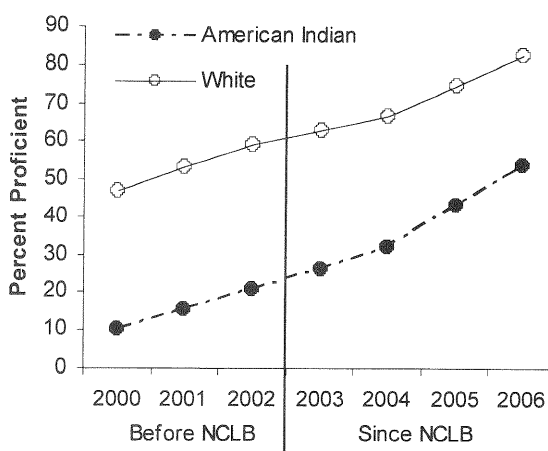


Figure 3. Achievement Rates for American Indian and White Students in Grade 5 Mathematics Before and Since NCLB.

Reading. The reading achievement rates since the implementation of NCLB are mixed. In third grade, American Indian students are progressing at lower rates than their White peers. The average change in the percentage of proficient third-grade American Indian students since NCLB is 2.7 points lower than the achievement rates of White students (Figure 5).

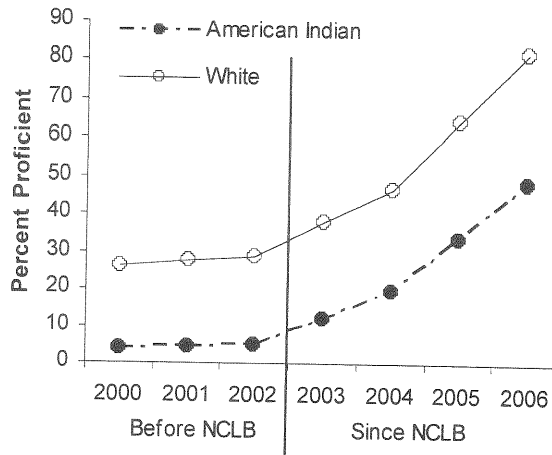


Figure 4. Achievement Rates for American Indian and White Students in Grade 8 Mathematics Before and Since NCLB.

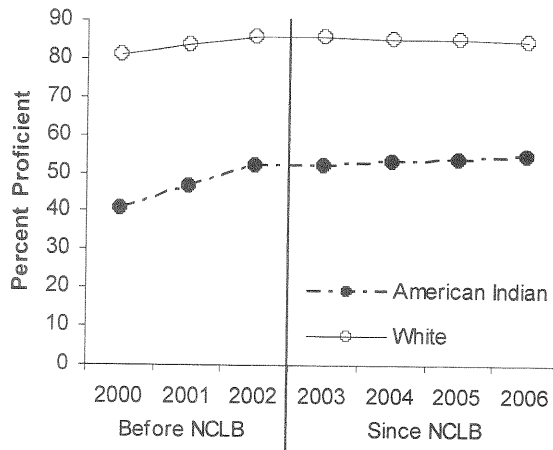
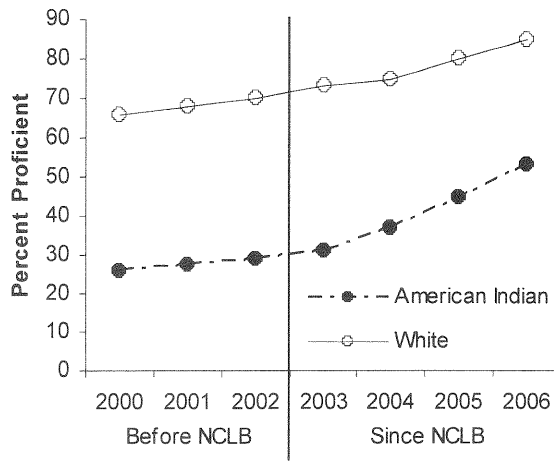


Figure 5. Achievement Rates for American Indian and White Students in Grade 3 Reading Before and Since NCLB.

In eighth-grade reading, American Indian students are making greater rates of progress since NCLB relative to White students. On average, the annual change in the percentage of American Indian students scoring proficient on the standards is 3.6 points higher than the rate for White students (Figure 6).



**Figure 6.** Achievement Rates for American Indian and White Students in Grade 8 Reading Before and Since NCLB.

#### How do the Achievement Rates of American Indian Students Compare to Other Racial/Ethnic Groups?

Since the implementation of NCLB, all of Arizona's major racial/ethnic subgroups are gaining ground on their White peers and American Indian students outpace other racial/ethnic student subgroups in most subject areas and grades. For example, in fifth-grade mathematics and reading, the percentage point increase in proficient American Indian students relative to White students is over twice the rate of Hispanic students, the next highest racial/ethnic group (Table 4). In the few cases where American Indian rates are not the highest, the achievement rates of proficient Hispanic students are only marginally higher than American Indian students.

**Table 4**  
**Average Annual Percentage Point Change in Proficient Students Relative to White Students by Major Racial/Ethnic Subgroups, Before and Since NCLB**

	Mathematics			Reading		
	3	5	8	3	5	8
Black	1.3	1.5	-3.0	-0.9	1.2	2.6
Hispanic	2.7	1.3	-0.9	0.6	0.5	3.2
American Indian	3.6	3.2	-3.3	1.3	2.7	3.1

#### Are American Indian Students Projected to Meet the 2014 Achievement Goal of 100 Percent Proficiency?

At the achievement rates since the implementation of NCLB, American Indian students are projected to meet the 2014 achievement goal of 100 percent

proficiency. This extrapolation assumes that American Indian students will sustain linear growth, on average, at the rates since NCLB. In practice, this rate of consistent growth would be unprecedented in Arizona and is highly unlikely. Yet, many state projections, including Arizona's own statements to the U.S. Department of Education, assume that the student groups will continue to make consistent linear growth from 2010 to 2014 (ADE, 2007a).

A more detailed examination of the Arizona results, however, reveals the limitations of the state projections and the simplistic assumptions upon which they are based. As discussed in the opening sections, Arizona policymakers made significant changes to the CRT and testing policies prior to the 2005 test administration. Following these changes, the percent of students scoring proficient on Arizona's CRT experienced a one-time increase that upwardly biases the achievement rates since NCLB. From 2004 to 2005, the percentage of proficient students across all grades and subject areas increased by 19 points on average. For example, in eighth-grade mathematics, the percentage of proficient students increased from 26 percent in 2004 to 63 percent in 2005, a single-year increase of 37 percentage points. In fifth-grade reading, the percentage of proficient students jumped from 52 percent to 71 percent from 2004 to 2005, a single-year increase of 19 percentage points. Achievement gains of this magnitude did not occur in any other year before or since the implementation of NCLB.

If the 2005 test score spike is omitted from the analysis and the rates since NCLB are calculated from the remaining data points (2003-2004 and 2005-2006), the achievement rates of American Indian students decline precipitously. In the most extreme cases, the average annual percentage point change in proficient students declines by 10.0 points or more. For example, with the 2005 test score results omitted, the average annual percentage increase in eighth-grade mathematics declines from 14.4 points to 2.0 points (Table 5; Figure 7).

Table 5  
**Average Annual Percentage Point Change in Proficient American Indian Students by Subject and Grade Since the Implementation of NCLB, 2004-2005, Test Data Omitted and Included**

	Mathematics			Reading		
	3	5	8	3	5	8
Omitted	-0.5	1.0	2.0	0.0	-0.5	-2.0
Included	7.3	11.0	14.4	0.8	7.7	8.0
Difference	-7.8	-10.0	-12.4	-0.8	-8.2	-10.0

The results are similar in eighth-grade reading where, once the 2005 test score data are omitted, the annual percentage change since NCLB is 2.0 points; the percentage of American Indian students scoring proficient in reading declined on average (Table 5; Figure 8).

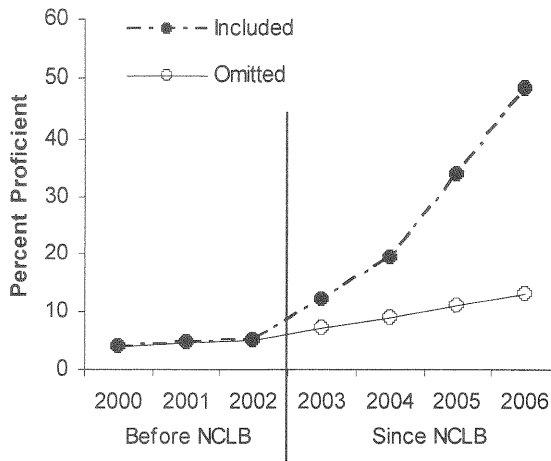


Figure 7. Achievement Rates with 2005 Test Data Included and Omitted, Grade 8 Mathematics Before and Since NCLB.

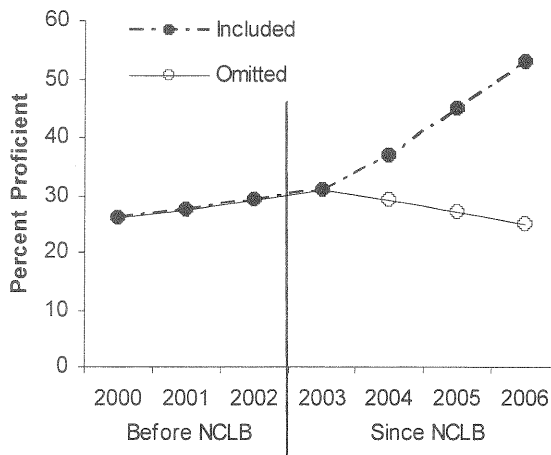


Figure 8. Achievement Rates with 2005 Test Data Included and Omitted, Grade 8 Reading Before and Since NCLB.

### Discussion

Federal education officials have claimed that NCLB is working and that achievement gaps are closing, particularly for Hispanic and African-American students (Spellings, 2007). This study tests this claim using state-level longitudinal data to compare achievement rates before and since the implementation of NCLB. On face value, the achievement rates since NCLB are positive but a closer examination of the data not only tempers any optimism but raises skepticism

about the unchecked use of state-derived tests as the sole measure of student academic proficiency in high-stakes accountability systems.

According to the NIES and Arizona CRT data, American Indian students score among the lowest of all student racial/ethnic subgroups. A higher percentage of Arizona students are scoring as proficient on the academic standards each year and the achievement rates since NCLB are higher than before the federal law was passed in nearly all subject areas and elementary grades. In some cases, these rates have surpassed the achievement rates of White students, meaning that American Indian students are closing the achievement gap. In other subjects and grades, such as eighth-grade mathematics and third-grade reading, American Indian students not only started out behind their White peers but are being left further behind their White peers since NCLB.

The bulk of the achievement gains since NCLB, however, occurred in the same year as policy makers made substantial changes to Arizona's CRTs, including lowering the passing scores. Without the one-time spike in 2005, the achievement rates return to more pedestrian levels. The rates since NCLB, minus the 2005 test score spike, are insufficient to close the achievement gap or reach the NCLB goal of 100 percent proficiency by 2014. It should be noted that Arizona's expectations to meet the NCLB goals require future achievement gains at nearly the rates since the implementation of NCLB with the 2005 test score data included (ADE, 2007a).

Arizona policy makers have explained away the 2005 test score spike as "a new pattern" in test results and the byproduct of adjustments to the test (ADE, 2005). The meteoric rise in test scores raised little public skepticism about the test results. For example, the lead line in the newspaper coverage of the 2005 test data reads, "Arizona's efforts to get more kids to pass the 2005 AIMS test paid off" (Kossan, Ryman, & Konig, 2005). Later in the article state officials acknowledge that the state CRT results are not comparable across years due to changes in the tests, but officials continue to use the test data from before and after 2005 to demonstrate progress on NCLB requirements.

### **Implications for the Reauthorization of NCLB**

The dramatic test score increases in 2005 should be of concern to anyone invested in student learning for American Indian/Alaska Native students and beyond. The results call into question the accuracy of the messages that the public receives about student academic proficiency under NCLB. Researchers have identified reasons to explain artificial test score gains such as the "Lake Wobegon Effect," which is due to the repeated use of the same test form over time and the comparison of students to static norms (Koretz, 1988; Linn, Graue, & Sanders, 1990). Others have looked within the schoolhouse to warn that teachers in high-stakes environments are likely to engage in practices that may ultimately corrupt test scores (Nichols & Berliner, 2005, 2007).

The Arizona results point to the state as another potential source of test score inflation. The test score inflation witnessed in Arizona is an indication that

the pressures of high-stakes accountability exist at all levels of the educational system. Passing scores are established by teacher committees that are fully aware of the stakes involved in their decisions and the scores are ratified by politicians with an investment in the public's reaction. In addition, many states object to the rigidity of the NCLB assessment and accountability systems and the unwelcome political pressures of labeling their schools pejoratively based on an inflexible accountability model, and states are seeking additional flexibility via reauthorization (Council of Chief State School Officers, 2004; Tucker & Toch, 2004).

The adjustment of passing scores may work as a short-term strategy so that more schools make AYP, but the consequences are most serious at the student level. If the underlying purpose of accountability systems is to provide assistance to students who are not meeting state standards, then the manipulation of passing scores could deny American Indian/Alaska Native students the very academic assistance that NCLB is intended to provide (see also Patrick, this issue). By design, NCLB forces schools to focus on students who have not demonstrated academic proficiency and schools put most attention toward those "bubble kids" (Booher-Jennings, 2005). What happened to the thousands of "bubble kids," American Indian/Alaska Native and otherwise, who "suddenly" passed the standards in 2005? If their teachers and schools took their test results at face value, then services that had previously been dedicated to support these students academically may have been weaned or discontinued altogether. Further research is necessary to understand what happened with such students but this research should go beyond macro-indicators of academic proficiency to observe teaching and learning within American Indian/Alaska Native schools and classrooms to authenticate the extent to which the test score gains are "real."

In addition to Arizona, the scores from other state CRTs have been found to be inflated when compared to an external assessment such as the NAEP. State test scores often exhibit the same jagged trend lines as witnessed in Arizona, leading some to question the reliability of state CRTs and advocate for national examinations (Fuller, Wright, Gesicki, & Kang, 2007). For example, federal officials have called for external measures, particularly NAEP, to verify state test results (USDOE, 2007). Effectively, these recommendations use a standardized test to verify another standardized test. Such recommendations fail to address the more fundamental credibility issues that arise from the extreme volatility observed in the Arizona test scores. Furthermore, greater reliance on national assessments draws important educational decisions further away from local communities. A national test begets national curricula and more centralization will further limit local voice in decisions about teaching and learning.

The single-minded quest to reach arbitrary passing scores and the many threats to credible test scores that come from all levels of the public education system — from the classroom to the state department — have given way to increased skepticism about assessment-driven reforms. The chinks in NCLB's armor are becoming increasingly apparent (Krol, 2006) and the NCLB reauthorization presents an opportunity to expand the prevailing notions of student

learning and school performance that undergird accountability policy. I offer the following recommendations in the areas of large-scale assessment and evaluation in the spirit of improving NCLB to promote educational equity for American Indian/Alaska Native students and other minority groups while staying within the general principles of the current law:

1. Allow states to measure (and count) student academic growth and progress toward achieving academic proficiency. Growth measures would alleviate some of the state-level pressures and incentives to set low passing scores. States are more likely to set and keep challenging, meaningful proficiency benchmarks if their schools are credited for the progress students make toward such benchmarks. At the classroom level, academic progress encourages the development of all students rather than placing a premium on “bubble kids.”
2. Monitor efforts at all levels of the public school system to increase the capacity of schools to achieve the academic benchmarks. The policy discussion of school outcomes is largely void of any consideration for the capacity of schools to meet the new academic expectations. Furthermore, some schools and students were further behind their peers and will require additional resources to gain ground. The monitoring of capacity building at all levels will bring forth a public discussion of whether or not the necessary resources are available to be successful.
3. Create a meaningful place for locally-developed indicators in the accountability system. Currently, states can include additional indicators above and beyond those prescribed by NCLB to evaluate school performance. Additional indicators, however, can only be used to label a school as underperforming and cannot be used to remove a school from underperforming status. This caveat is a clear disincentive for states to include additional indicators of school performance in accountability systems. New provisions should allow locally-developed indicators to override assessment-based decisions in cases where schools are otherwise showing improvement on test scores. These provisions will support diversity by allowing local communities a voice in establishing the operational definition of a quality school.

Future research on NCLB must take into consideration the profound impact that changes in state assessment policies have on student achievement scores. The jagged trend lines exhibited by the achievement scores in some states will present a challenge to the tracking of student subgroup performance over time. These fluctuations have to be taken into account, however, in order to get an accurate assessment of NCLB’s legacy.



**David R. Garcia** is an assistant professor in the Mary Lou Fulton College of Education at Arizona State University. His research interests include school choice, school accountability, and the study of policy implementation across levels of the education system.

### Endnotes

<sup>1</sup>The Arizona test scores were not standardized for two reasons. First, the original metric, percentage of proficient students, was maintained for ease of interpretation. Second, Arizona's CRT was given continuously over all years of the study and the test results are comparable over time. Other studies have standardized the test results to create a consistent metric over time (Newman, Smith, Allensworth, & Bryk, 2001; Yin & Schmidt, 2006).

<sup>2</sup>The term "outcomes" or "results" could also be used to describe the achievement rates after the implementation of NCLB. These terms, however, denote a causal or associative relationship between NCLB and the test score data that is unsupported without appropriate controls and the elimination of alternative explanations for the findings.

<sup>3</sup>Percentage point changes are often confused with percentage change. The former metric, which is used in this article, compares the absolute value difference between two values that are expressed as percentages. The latter metric is a measure of relative difference where, in trend analyses, the earlier value is subtracted from the later value then the difference is divided by the initial value and multiplied by 100 (Miller, 2005).

### References

- Albus, D., Thurlow, M., & Liu, K. (2002). *Participation and performance of English language learners* (Publication no. ED472203). Retrieved August 13, 2007 from [http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content\\_storage\\_01/0000019b/80/1a/b1/24.pdf](http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1a/b1/24.pdf)
- American Educational Research Association (1999). *Standards for educational and psychological testing*. Washington, DC: Author.
- Amrein, A. L., & Berliner, D. C. (2002, March 28). High-stakes testing, uncertainty, and student learning. *Education Policy Analysis Archives*, 10(18). Retrieved April 20, 2007 from <http://epaa.asu.edu/epaa/v10n18>
- Arizona Department of Education (2005, July 13). *Arizona students score above national average in reading, language and math* (Press Release). Retrieved January 14, 2008 from <http://ade.az.gov/pio/Press-Releases/2005/pr07-12-05.pdf>
- Arizona Department of Education (2007a). *2005-2006 Consolidated state application accountability workbook*. Retrieved April 10, 2007 from <http://ade.az.gov/azlearns/workbook.asp>
- Arizona Department of Education (2007b). *Arizona October 1st enrollment figures*. Retrieved April 20, 2007 from <http://ade.az.gov/researchpolicy/AZEnroll/2006-2007/Default.asp>
- Boloz, S. A., & Varrati, R. (1983). Apologize or analyze: Measuring academic achievement in the reservation school. *Journal of American Indian Education*, 23(1), 23-28.
- Booher-Jennings, J. (2005) Below the bubble: "Educational triage" and the Texas accountability system. *American Educational Research Journal* 42(2), 231-268.
- Brescia, W., & Fortune, J. C. (1988). *Standardized testing of American Indian students* (Publication no. ED296813). Retrieved August 13, 2007 from <http://www.ericdigests.org/pre-929/testing.htm>
- Carnoy, M., & Loeb, S. (Winter, 2002). Does external accountability affect student outcomes? A cross-state analysis. *Educational Evaluation and Policy Analysis*, 24(4), 305-331.

- Council of Chief State School Officers (2004). *NCLB implementation issues and opportunities for action*. Retrieved April 10, 2007 from <http://www.ccsso.org/content/pdfs/IssuesAndOpportunities.pdf>
- Executive Order No. 13336 (2004). Retrieved April 10, 2007 from <http://www.whitehouse.gov/news/releases/2004/04/20040430-10.html>
- Fuller, B., Wright, J., Gesicki, K., & Kang, E. (2007). Gauging growth: How to judge No Child Left Behind? *Educational Researcher*, 36(5), 268-278.
- Jones, M. G., Jones, B. D., & Hargrove, T. (2003). *The unintended consequences of high-stakes testing*. Lanham, MD: Rowan & Littlefield.
- Kossan, P., Ryman, A., & Konig, R. (2005, July 13). More kids pass '05 AIMS: Questions raised of easiness of test vs. real gains. *The Arizona Republic*, p. A1.
- Koretz, D. (1988). Arriving at Lake Wobegon: Are standardized tests exaggerating achievement and distorting instruction? *American Educator*, 12(2), 8-15, 46-52.
- Krol, D. U. (2006). Promise unfulfilled; Federal education law leaves Indian schools behind. *American Indian Report*, XXII(8), 10-13.
- Lee, J. (2006). *Tracking achievement gaps and assessing the impact of NCLB on the gaps: An in-depth look into national and state reading and math outcome trends*. Cambridge, MA: The Civil Rights Project at Harvard University.
- Linn, R. L., Graue, M. E., & Sanders, N. M. (1990). Comparing state and district results to national norms: The validity of the claims that "everyone is above average." *Educational Measurement: Issues and Practice*, 9(3), 5-14.
- McDiarmid, G. L. (1971). *The hazards of testing Indian children*. ERIC Document Reproduction Service No. ED055692.
- McInerney, D. (1992, November). *Indigenous educational research: Can it be psychometric?* Paper presented at the AARE/NSARE Conference on Educational Research: Discipline and Diversity, Geelong, Victoria, Australia.
- Miller, J. (2005). *The Chicago guide to writing about multivariate analysis*. Chicago, IL: University of Chicago Press.
- National Assessment Governing Board (2002, March 1). Using the National Assessment of Educational Progress to confirm state test results. Retrieved April 20, 2007 from [http://nagb.org/pubs/color\\_document.pdf](http://nagb.org/pubs/color_document.pdf)
- Nichols, S., & Berliner, D. C. (2005, March). *The inevitable corruption of indicators and educators through high-stakes testing* (EPSL-0503-101-EPRU). Retrieved April 16, 2007 from <http://www.greatlakescenter.org/pdf/EPSL-0503-101-EPRU.pdf>
- Nichols, S., & Berliner, D. (2007). *Collateral damage: How high-stakes testing corrupts America's schools*. Cambridge, MA: Harvard Education Press.
- Orfield, G., & Kornhaber, M. L. (2001) (Eds). *Raising standards or raising barriers? Inequality and high states testing in public education*. New York: The Century Foundation Press.
- Raymond, M. E., & Hanushek, E. A. (2003). High-stakes research. Accountability works after all. *Education Next*, 3. Retrieved April 10, 2007 from <http://www.hoover.org/publications/ednext/3347781.html>
- Shavelson, R. J., & Towne, L. (2002) (Eds.). *Scientific research in education*. Washington, DC: National Academy Press.
- Spellings, M., U.S. Secretary of Education (2007, March 31). Fact sheets, OP-EDS: The benefits of NCLB [Letter to the editor]. *Washington Times*. Retrieved April 20, 2007 from <http://www.ed.gov/news/opeds/edit/2007/03312007.html>
- Tucker, M. S., & Toch, T. (2004, March). Hire ed: The secret to making Bush's school reform law work? More bureaucrats. *Washington Monthly*. Retrieved January 15, 2008 from <http://www.washingtonmonthly.com/features/2004/0403.toch.html>

- U.S. Department of Education (2004a). Secretary Paige issues new policy for calculating participation rates under No Child Left Behind (Press Release). Retrieved April 18, 2007 from <http://www.ed.gov/news/pressreleases/2004/03/03292004.html>
- U.S. Department of Education (2004b). *The facts about ... Making gains every year*. Retrieved April 20, 2007 from <http://www.ed.gov/nclb/accountability/ayp/yearly.html>
- U.S. Department of Education (2005, November 3). *How NCLB is benefiting American Indian students*. Retrieved April 20, 2007 from <http://www.ed.gov/nclb/accountability/achieve/nclb-amind.html>
- U.S. Department of Education (2006a). *Public elementary and secondary students, staff, schools, and school districts: School year 2003-04* (Report No. NCES 2006-307). Retrieved April 20, 2007 from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2006307>
- U.S. Department of Education (2006b). *National Indian Education Study. Part I: The performance of American Indian and Alaska Native fourth- and eighth-grade students on NAEP 2005 reading and mathematics assessments* (Report No. NCES 2006-463). Retrieved April 20, 2007 from <http://nces.ed.gov/nationsreportcard/pubs/studies/2006463.asp>
- U.S. Department of Education (2007). *Building on results: A blueprint for strengthening the No Child Left Behind Act*. Retrieved April 18, 2007 from <http://www.ed.gov/policy/elsec/leg/nclb/buildingonresults.html>
- Yin, R. K., & Schmidt, R. J. (2006). Aggregating student achievement trends across states with different tests: Using standardized slopes as effect sizes. *Peabody Journal of Education*, 81(2), 47-61.
- Young, M. B., Rudes, B. A., Shaycoft, M. F., & Hopstock, P. J. (1988). *Academic performance of limited-English-proficient Indian elementary students in reservation schools: Year two report of the national evaluation of services for limited-English-proficient Native American students* (Publication no. ED297927). Retrieved August 13, 2007 from [http://www.eric.ed.gov/ERICDocs/data/eric\\_docs2sql/content\\_storage\\_01/0000019b/80/1c/c1/eb.pdf](http://www.eric.ed.gov/ERICDocs/data/eric_docs2sql/content_storage_01/0000019b/80/1c/c1/eb.pdf)