Research Brief:

The Impact of the No Child Left Behind Act on Student Achievement and Growth: 2005 Edition

Northwest Evaluation Association

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One of the cornerstones of the federal education act called No Child Left Behind is the phrase "Scientifically-Based Research". This type of research is required to justify spending federal dollars on classroom materials and educational programs. The simple idea behind scientifically-based research is that one needs to show that a program improves student learning before it can be purchased for the classroom.

This study applies the idea of scientifically-based research to the impact of the law itself. NCLB is a very complex law with aspects as diverse as content standards and school choice. While many aspects of NCLB have been validated in some settings, this law is the first of its kind on a national scale. This study is a scientifically-based investigation of the impact of NCLB on student achievement and growth. It is the first in an annual series that will investigate the effects of the legislation as they emerge over time. Results from the study of any one year will give us a single snapshot of the law as it is implemented, while the series of studies will identify trends as they occur.

The Northwest Evaluation Association is a not-for-profit agency that works with school districts and educational agencies throughout the United States. As part of its mission to help all kids learn, NWEA often performs research to extend our knowledge of education. This series of studies flows naturally from that mission, and should help students learn more as we learn more about education.

This first study compares student achievement and student growth in achievement prior to the implementation of NCLB (school year 2001-2002) and following implementation (school year 2003-2004). It also examines the impact of NCLB on the performance and growth of students in several ethnic groups to investigate the promise of equity implicit in NCLB.

In this study, we distinguish between **achievement level** (the score that a student has at one point in time) and **achievement growth** (the difference in scores for a single student from one point in time to another). These two ways of looking at achievement are useful because we want to ask cross-sectional questions (How does the achievement level of this year's fourth grade class compare to last year's fourth grade class?) and we also want to ask longitudinal questions (How much achievement growth have this year's fourth grade students made since they were in third grade last year?).

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Four specific questions concerning NCLB are asked in this study:

- Are student achievement levels higher than when NCLB first went into effect?
- Is student achievement growth higher than it was when NCLB first went into effect?
- Are achievement levels and achievement growth gaps among ethnic groups shrinking under NCLB?
- Given current rates of change in achievement level, are schools likely to meet the requirements of NCLB?

Methodology

This study uses the Growth Research Database from the Northwest Evaluation Association to provide achievement information about hundreds of thousands of students in school districts across the country. Since the database was founded several years ago it has provided one of the largest archives of individual student growth available in the country today. The database allows the comparison of student achievement and student growth on a common, stable scale. This simple fact provides a tool that enables researchers to investigate educational change more completely than ever before.

The dataset included reading assessment data from more than 320,000 third through eighth grade students in more than 200 school districts located in 23 states. The dataset included mathematics assessment data from more than 334,000 third through eighth grade students in more than 200 school districts located in 22 states. All assessment information came from NWEA tests, which put all scores onto a single, stable measurement scale (the RIT scale). This enables meaningful comparisons across time and allows the calculation of growth scores for individual students.

Student achievement scores and growth scores were calculated using data from the 2001-2002 school year and the 2003-2004 school year. These years were selected because 2001-2002 was the last school year in which NCLB wasn't being implemented, and 2003-2004 the most recent full school year available. The study compared achievement and growth both before and after NCLB was implemented, to allow a first, large-scale look at the impact of the law.

It is useful to identify three limitations of the study:

- First, NCLB is now in its implementation phase. This means that many aspects of the law are just starting to have an impact. Later studies will capture the law's impact as it moves forward.
- Second, we compared achievement level and achievement growth prior to and following the implementation of NCLB. Conclusions from these analyses are limited because the passage of time contains many more elements than just the implementation of the federal law.
- Third, achievement growth can only be calculated for students with test scores in two consecutive seasons. These students tend to be slightly more stable than their peers for whom growth scores can't be calculated.

Outcome

The primary findings of the study include the following:

- Mathematics and reading scores have improved over the past two years under NCLB.
- Student growth scores have decreased since NCLB was implemented.
- Students in grades with state tests have higher achievement and growth than students who are not.

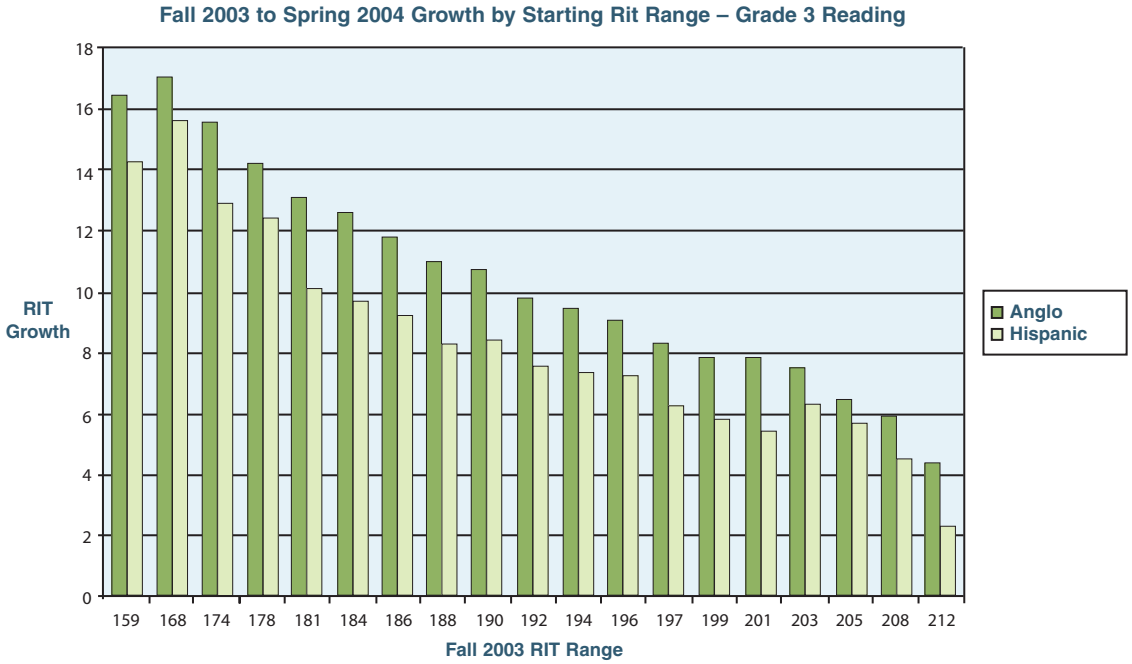
- Changes in performance in mathematics are greater than those in reading since NCLB was implemented.
- Studies in this area that use lower-stakes assessments to measure improvements in learning may have a greater percentage of unmotivated students.
- Student growth in every ethnic group has decreased slightly since NCLB was implemented.
- Growth of Hispanic students in every grade and subject area tends to be lower than the growth of Anglo students with exactly the same initial score.

Impact

As implementation of NCLB continues, we need to use information to determine whether or not it is working. There is no country on the planet that currently meets the NCLB goal of having all of its children meeting a challenging proficiency level. In addition, no country has tried the amalgamation of funding and sanctions and standards that we see in NCLB. It is clear that close scrutiny is warranted to determine whether this good political idea becomes good educational practice.

The findings in this study are only a snapshot along the way to implementation. They indicate that NCLB may have a positive impact on student achievement, but they also indicate that this impact currently falls far short of meeting the goal that all students be identified as proficient.

The most troubling finding in the study concerns the growth of students in different ethnic groups. In a comparison of Hispanic and Anglo students under NCLB, students with different ethnicities who had the same initial test score grew differently, with the Hispanic students growing noticeably less. This was observed consistently across grades and subject areas. Similar findings were seen when comparing growth of African-American students and Native-American students to growth of Anglo students. This finding begins to raise equity concerns that need to be addressed as NCLB moves forward. An example of this problem is shown in the figure below.



The figure on the previous page shows that as third graders move from fall to spring, Hispanic students grow less in reading than Anglo students who start with the same score in the fall. This is the case for students across the range of student achievement on the RIT scale. The figure also shows a common trend for all students to grow less if they start with higher scores in the fall. While it might be reasonable for lower performing students to grow more (since they are just learning about reading) it is not reasonable for one ethnic group to consistently grow less than another, particularly when they are young and just learning their reading skills.

Discussion

Two of the positive trends identified in the study are the following:

- State-level tests tend to improve observed achievement on an independent measure, and therefore, increasing the number of grades in which state tests are given may improve achievement more.
- There is evidence that NCLB has improved student achievement since its adoption (although this effect is much smaller than the testing effect).

Two of the worrisome elements at this point are:

- If change in achievement of the magnitude seen so far continues, it won't bring schools close to the requirement of 100 percent proficiency by 2014.
- Students in ethnic groups that have shown achievement gaps in the past grow less under NCLB, and may grow less than comparable Anglo students.

It is interesting to look at the implementation of a law as it progresses. The trends identified will be followed across the next few years. Additional trends will be identified as the pattern of the law's effects becomes clearer. The close scrutiny that this law receives should benefit students for years to come.

The full report is available at http://www.nwea.org/research/nclbstudy.asp

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The Northwest Evaluation Association is a national non-profit organization dedicated to helping all children learn. NWEA provides research-based educational growth measures, professional training, and consulting services to improve teaching and learning. Partnering with school districts, states, and other education organizations, NWEA serves nearly 1,500 education agencies and four million students. Additionally, its Growth Research Database, the most extensive collection of student growth data in the country, provides a rich opportunity for the study of academic achievement.

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