Essays in Education

Fall 9-1-2004

How Will No Child Left Behind Improve Student Achievement? The Necessity of Classroom-Based Research in Accountability Reform.

Stephanie W. Cawthon
University of Wisconsin, Madison

How Will No Child Left Behind Improve Student Achievement?
The Necessity of Classroom-Based Research in Accountability Reform.

Stephanie W. Cawthon

University of Wisconsin-Madison

Abstract

No Child Left Behind (2001) legislation emphasizes the use of large-scale assessments in evaluating student proficiency in core academic areas. Classroom-based measures of proficiency, such as research projects, classroom assessments, and homework assignments, also provide rich data regarding students' academic progress. This article articulates three areas where classroom-based measures can complement the large-scale assessment data used in NCLB reports of school, district and state progress: 1) Alignment of curriculum to state standards, 2) Assessment of student achievement, and 3) Identifying strategies for teaching in a diverse classroom. Making links between classroom instruction, student work, and large-scale assessment will be critical to understanding the mechanisms behind gains in proficiency. The article concludes with an example of possible methods for classroom-based research in the context of NCLB.

Introduction

The No Child Left Behind Act (NCLB) of 2001 is the biggest news to hit public education in recent years. From national headlines of its impact across the country, to concerns of parent advocacy groups, to findings from major research institutions – NCLB has touched the lives of hundreds of thousands of teachers, administrators, parents, and students. For individuals whose purpose it is to assess and evaluate student achievement, NCLB significantly shifts the educational landscape to a system of assessment and accountability. Schools and districts that fail to show regular progress on accountability measures face mandated consequences. Any educational researcher involved in current measures of educational policy, teacher quality, and student performance must therefore take into consideration the criteria and demands put forth by NCLB.

The purpose of this article is to explore what role classroom-based research may have in our evaluation of student performance and state compliance with NCLB. NCLB measures rely primarily on indicators of performance such as large-scale assessments and other objective measures of school success. This article will first give a brief summary of NCLB criteria and available data from the literature. Next, it will illustrate why classroom-based research is an essential complement to current research. The article will close with some central questions and methods that will yield meaningful data for evaluating the impact of NCLB.

Components of NCLB Reform

NCLB extends previous legislation emphasizing standards-based reform and goals for academic proficiency of all students. NCLB requires all states to have core academic standards, and furthermore dictates that states will need to bring all students to proficient levels in language arts and mathematics by 2014. In the meantime, states must show that districts are showing adequate yearly progress (AYP) towards those goals. The criteria for meeting AYP are as follows:

- Establish "annual measurable objectives" of achievement (i.e. state assessments)
- At least 95% of all students must be included in state assessments
- Assessment performance *and* participation data must be shown for all significant subgroups of students, including economically disadvantaged, racial and ethnic minority groups, limited English proficient, and students with disabilities
- Demonstrate yearly progress in student achievement
- Demonstrate yearly progress on an additional criterion, i.e. in high school graduation rates or student attendance

We are currently at the beginning of the second full calendar year since the implementation of NCLB. States spent the first year of NCLB developing proposals for how their assessments and criteria for AYP fit into this accountability model. The primary foci for this year are to establish a baseline of student achievement, identify schools that do not currently comply with NCLB criteria, and to develop plans to improve scores for next year's AYP report.

Current Evaluation of NCLB

Where are we? The goal of NCLB is for all students to reach proficiency in math and reading by 2014. It is perhaps little surprise that many schools do not currently meet proficiency standards. Much of our attention is therefore on student participation in and performance on state assessments. What kind of assessments do states use? Assessments usually include a commercially available standardized test such as the Stanford Achievement Test (9th edition), Iowa Tests of Basic Skills, or a similar test designed to assess knowledge outlined on the state standards. States are required to post AYP results for the past school year in fall of 2003. For example, Table 1 displays proficiency results for reading in Iowa in 2003. These figures are for the significant subgroups in Iowa and clearly demonstrate the need for improvement towards the NCLB goals of 100% proficiency. As these state reports become available, we will have a clearer understanding of how schools are meeting AYP and the factors behind their progress.

Table 1. Iowa Report of Student Proficiency in Reading for 2003

Grade	Student Category	Percent Proficient
4th	Migrant	43.6%
	With a Disability	29.1%
	English Language Learner	40.6%
8th	Migrant	30.4%
	With a Disability	22.9%
	English Language Learner	27.2%
11th	Migrant	26%
	With a Disability	27.5%
	English Language Learner	31.6%

Source: *The State Report Card for No Child Left Behind*, Iowa Department of Education, updated 8/15/03.

Daily headlines show that districts are often surprised to find that their top schools do not meet the AYP. The mismatch between previous "blue ribbon" performance and compliance under NCLB is due to a number of factors. Some schools have outstanding performance overall. However, student achievement must be proficient not just in an average across the school, but in *all significant subcategories* of students. Schools must demonstrate that all students, including those who are economically disadvantaged, who have disabilities disabilities, etc. are both a) participating in assessments and b) showing proficiency in language arts and mathematics. Inclusion in assessments for students with disabilities or limited English proficiency has progressed only slowly over the last decade. Student achievement for these groups has also lagged substantially behind the general population. Addressing the needs of these students is a formidable challenge. For the first time, under NCLB, it is the success of these students that distinguishes between schools that meet AYP and those that do not.

Teacher perspectives on NCLB have also received some attention in the research literature. Headlines from around the news range from optimistic to utterly frustrated: "Schools cite penalty for helping students", "Experience the success of No Child Left Behind", "The tyranny of the test", "It's working!" Some of these data are anecdotal, others involve case studies of teachers and their experiences in the first year of NCLB. Finally, a few papers have published results of surveys conducted in a number of schools and districts. In all, it's a mixed bag. Some report success in raising student achievement. Others feel pressure to improve test scores and work in an environment of fear and anxiety. Unfortunately, it is easy to support or dispute the success of any educational policy through anecdotes and early "exit polls" of teacher experience. As the implementation of NCLB continues, more comprehensive studies of teacher experiences with NCLB will assist our understanding of how these perspectives affect progress on AYP and, ultimately, student performance.

What do we need to know? NCLB has the potential to be a meaningful catalyst, a punitive testing program, and many shades of gray in between. Statistics and anecdotes are helpful in identifying areas for further investigation, but they cannot bring us closer to understanding the impact of NCLB on the process behind student learning. Here's what we *really* need to know about NCLB:

- Do the accountability mechanisms behind NCLB help student achievement?
- Where do these mechanisms work best? Where are they less helpful?
- What can teachers do to increase the likelihood of success under NCLB?

Need for Classroom-Based Research

We need classroom-based research to complement NCLB accountability data. Why? Measures of AYP are very helpful in giving schools a sense of where they stand in the NCLB framework and where there is room for improvement. However, annual testing, by itself, will not increase student achievement. Nor will it illustrate why some classrooms are improving whereas others or not. Standards and performance goals are *external* mechanisms for change: classroom instruction and the learning process are components of *internal* change. In other words, to know how and why students improve, we need to look at what teachers are teaching and what students are learning. An analysis of classroom activity is therefore essential to move towards NCLB's goals of high student achievement.

There are several key areas where classroom-based research can provide meaningful data about student achievement:

- Alignment of curriculum to state standards
- Curriculum-based assessment of student achievement
- Strategies for teaching in a diverse classroom

Alignment. Including standards-based content in classroom instruction will be essential if students are to show progress on state assessments. States conduct alignment analysis of *standards to assessments* to ensure that tests are measuring appropriate content. Similarly, alignment analysis of *curriculum to standards* also ensures that students are adequately prepared to participate in state assessments. Valid alignment measurements of curriculum can come only with meaningful input from teachers about their classroom instruction.

Alignment can be an important part of ensuring our students learn important academic content. However, it can also be perceived as prescriptive, restricting teachers to a few topics and limiting flexibility in instructional style and content. Issues of alignment cause many to fear that our teachers will "teach to the test." Yet alignment to standards does not necessarily result in cookie-cutter classroom instruction. The dynamic between individual teachers and students will impact any learning activity as both adjust to each other's strengths, weaknesses, and diverse perspectives. Classrooms can be

equally aligned to state standards while still maintaining individual differences. They may just reach their goals in different ways.

Curriculum-based assessment. NCLB requires states to maintain an annual measurable objective of achievement. Most states will use a standardized test to meet this criterion. As a result, there is a growing concern that we will overemphasize standardized testing at the expense of other valid indicators of student learning. We already have rich data about student achievement: class projects, report cards, teacher evaluations, or other classroom-based measures of student learning. Each of these components is potential "evidence" that students are proficient in core academic areas.

Classroom-based research, using information from daily experiences in the classroom, can *complement* objective measures of student achievement required by NCLB. What will be essential is to track student achievement on both classroom assignments and standardized tests. School-wide or classroom-wise averages of separate accountability mechanisms (such as a score on the Stanford -9) provide no real link between classroom instruction and performance on state assessments. Linking classroom-based and large-scale assessments for individual students will provide better information about student progress towards proficiency. Using multiple data sources, we can learn teaching strategies are successful, and those standards that need greater emphasis. An example:

> *Stan Student starts the school year a few steps behind the rest of his class. His state reading test scores from the previous year put him in the lower third of his grade. His reading skills need work, particularly in areas of reading comprehension and fluency. Tyler Teacher maintains a log of his progress, marking areas of improvement or difficulty on a bi-weekly basis. She also makes notes of areas where Stan has spent significant class time, how he reads in front of the class, and what kinds of words give him trouble. The state assessments are then given in mid-spring of that academic year. While his scores on the comprehension section illustrate how Stan is doing relative to his classmates, the tests are limited in how they can show improvement in fluency. Using the data gathered over the year, Tyler Teacher can give a more complete picture of Stan Student's progress in the different components of reading. Tyler Teacher thus can provide <u>complementary</u> data on areas of improvement, productive teaching strategies, and specific feedback for Stan and his family.*

Using multiple data sources also brings teachers into the accountability process. Data on teacher perspectives of NCLB converge on an important point: Teachers do not, on the whole, feel involved in the process of evaluating their own students. NCLB accountability measures focus on student performance on large-scale state assessments. Classroom-based research holds the potential to involve teachers in their own understanding of their teaching and its role in NCLB. It is important to encourage teachers to be reflective practitioners, for them to educate the community about <u>how</u> students are gaining proficiency on standards-based content. Data from classroom-based research, especially when taken in conjunction with large-scale assessment data, provide a rich and informative area of research.

Diversity. The third area addressed by classroom-based research, teaching in diverse classrooms, directly addresses concerns over rigid alignment to standards. Individual differences in classroom instruction can enrich our understanding of how standards can be taught in a variety of ways. We don't just want to know what students learn – we want to know *how* they learned it! The difficulty is, all students need to show proficiency, including economically disadvantaged, minority groups, limited English proficient, and students with disabilities. This wide range of students is often a part of a single classroom environment! Teachers must work with students who have a variety of needs by integrating activities that address different learning styles and backgrounds. Examples of effective strategies from different perspectives help the educational community understand how we can meet the challenge of NCLB. Classroom-based research, particularly in classrooms with a diverse population *and* high levels of student achievement, can help identify strategies for using standards-based instruction in innovative and meaningful ways.

Classroom-Based Methods

We have discussed three areas where classroom-based research could be used to evaluate the success of NCLB: alignment of curriculum to standards, curriculum-based assessments, and strategies for teaching in a diverse classroom. What classroom-based methods might be appropriate for teachers and researchers to use in their analysis? High-tech and time-intensive methods are not feasible for most teachers. Invasive methods with extensive video taping and analysis of classroom discourse are not appropriate either.

One possible method is "enacted curriculum" research, pioneered by Andrew Porter and his colleagues at the Wisconsin Center for Education Research. Enacted curriculum research has been used to study alignment of standards, curriculum and assessments on a national, state, and classroom level. This method captures many of the goals outlined above in a relatively simple procedure. Teachers are asked to complete a survey of their classroom instruction for a set period of time, perhaps a semester. Survey items include those listed on state standards as well as other items commonly taught in their grade level. Using their lesson plans, classroom-based assessments and teaching materials, teachers designate approximate "time on task" for items listed in the survey. An excerpt from a similar survey is found in the Appendix.

Data points from these surveys are entered into a database spreadsheet. Using the standards-based content as the target, teacher responses are analyzed for their relative similarity or difference with the standards. This analysis generates a measure of alignment, or relative similarity between the classroom instruction and standards-based content. For example, the degree of similarity between curriculum and standards can range from on slightly aligned (0.20) to highly aligned (0.80). Although one would not advocate for perfect alignment – this would mean the teacher focuses solely on standards-based content – adequate alignment ensures coverage of items students will find on state assessments. Teachers can thus use this tool to obtain feedback about where students may be more or less prepared for testing.

Survey results go beyond a simple alignment estimate. Results are also represented with a content map, an illustration similar to a topographical map of rugged terrain. These maps have "peaks" and "valleys" that represent relative "highs" and "lows" of instructional time. The example in Figure 1 shows a portion of a reading curriculum survey at the early elementary grade level. One can see that the teachers spent a larger amount of time in the darker areas, memorizing word spelling, than in the lighter areas, extending/integrating concepts such as lexical and context cues in reading.

This tool provides a "big picture" perspective, both for individual teachers and, when averaged together, for groups of teachers working in the same grade level. Besides giving an illustration of time spent on topics, teachers are also able to look at the types of classroom activities they are using with their students. This example shows a range of tasks from Memorization (low cognitive load) to Extend/Integrate material (high cognitive load). These categories help show the differences between time spent on drill items (such as spelling) and those spent on conceptual knowledge (such as applying ideas to current events). Furthermore, classroom-based assessments can be explicitly included in the list of topics or types of teaching goals addressed on the survey. Teachers can see where they spend their time, what standards they are focusing on, and what types of teaching strategies they are using for those standards.

When taken together across classrooms, teachers at similar grade levels or with similar student populations can compare their teaching strategies. For example, curriculum in classrooms with students with disabilities can be compared with those without. (The content map example is taken from a study comparing classrooms with deaf and hearing students.) Using these tools, teachers can identify how their strategies reflect individual differences in their teaching styles and the diversity in their classrooms. Not only does the data provide a measure of alignment, it contributes to an ongoing dialog about how teachers are working to use standards-based curriculum in their classrooms.

Figure 1. Sample Content Map of Instructional Time
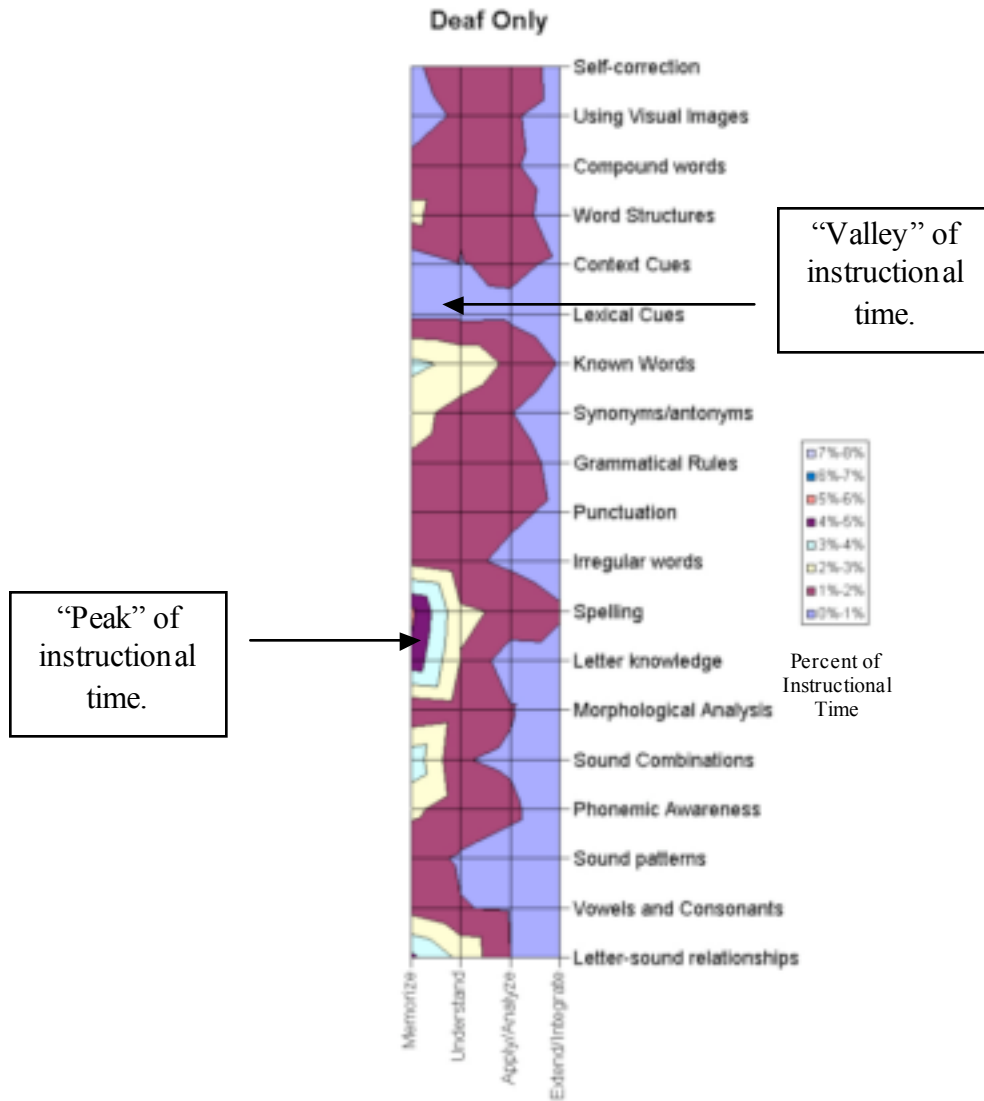
Conclusion

This article illustrates how classroom-based research can be integrated into the study of NCLB reform. Classroom-based research will help the educational community move from compliance with NCLB criteria to developing strategies for success within accountability reform. This article proposes using an enacted curriculum measure to gather data on classroom instruction. This tool meets all three of our goals for investigating the impact of NCLB on student achievement: a) alignment of curriculum to state standards, b) curriculum-based assessment of student achievement and c) strategies for teaching in a diverse classroom. By using standards-based content as the target, teachers can obtain two important pieces of data: an alignment measure and a content-map of their classroom instruction. The alignment measure gives an understanding of exposure to standards-based content. The content maps encourage identification of teaching strategies and comparison of differences across diverse classroom settings. In this era of accountability, it is important to demonstrate how classroom instruction results in academic achievement for all students.

References

Bolt, S., Krentz, J., & Thurlow, M. (2002). *Are we there yet? Accountability for the performance of students with disabilities* (Technical report 33). Minneapolis, MN: The University of Minnesota, National Center on Educational Outcomes.

Cawthon, S. (2002). *Opportunity to learn: Deafness and literacy during an age of standards-based reform*. Unpublished doctoral dissertation, University of Wisconsin – Madison, Madison, WI.

Hinde, E. (2003). *The tyranny of the test: Elementary teachers' conceptualizations of the effects of state standards and mandated tests on their practice*. Current Issues in Education [On-line], 6 (10). Available: http://cie.ed.asu.edu/volume6/number10/

Porter, A. & Smithson, J. (2001). Are content standards being implemented in the classroom? A methodology and some tentative answers. In S. H. Fuhrman (Ed.), *From the capitol to the classroom: Standards-based reform in the states - One hundredth yearbook of the yearbook of the National Society of the Study of Education, Part ii (pp. 60-80)*. Chicago, IL: University of Chicago Press.

United States Department of Education (2002). *No Child Left Behind.* Washington DC: Author.

NCLB Research Web Resources

Data on the impact of NCLB are available from a number of different agencies. Each state publishes available data on their Department of Education websites. The government provides their own daily updates of popular news articles at their NCLB Extra Credit site, and the Educational Commission of the States compiles articles from sources around the country. Current papers on state statistics and compliance on a

national level are available from the National Center for Educational Accountability. The National Center on Educational Outcomes focuses on issues surrounding students with disabilities and limited English proficiency.

No Child Left Behind - Extra Credit (www.nclb.gov)
National Center for Educational Accountability
Educational Commission of the States E-Clips (http://www.ecs.org/ecs/e-clips)
National Center on Educational Outcomes
State Departments of Education Websites

Appendix
Excerpt from Enacted Curriculum Research Tool

Coverage Codes
0 = None, not covered
1 = Less than one class or lesson
2 = One to five classes or lessons
3 = Five to ten classes or lessons
4 = More than ten classes or lessons

Teaching Goal Codes
0 = Not emphasized
1 = Less than 25% of time spent on this topic
2 = Between 25-49% of time spent on this topic
3 = Between 50-74% of time spent on this topic
4 = More than 75% of time spent on this topic

Coverage	Sample Topics	Teaching Goal			
		Memorize	**Understand**	**Apply/Analyze**	**Extend/Integrate**
0 1 2 3 4	Current Events	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
0 1 2 3 4	Poetry	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
0 1 2 3 4	Consonants	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4

Note the amount of coverage you devoted to each topic by marking the appropriate number in the "Coverage" and "Teaching Goal" columns using the appropriate codes. For each topic taught, please first indicate the amount of time you spent on each topic over the course of the semester. Next, estimate how much instructional time you spent on the four Teaching Goals across your lessons for that topic. Some topics will have more than one Teaching Goal, but total time should add to no more than 100% for each topic. In the Poetry example above, the teacher estimated she spent approximately 1 – 5 class lessons on Poetry. The teacher estimated that roughly 30% (a "2") of her lesson time was spent having students Memorize poetry, about 60% (a "3") of her time focused on Understanding, and about 10% (a "1") writing new poetry (Extend). She did not indicate spending any time on applications or analysis of Poetry. Remember that this is an approximation, so do what you can!