

Growth Models—An Update on the Effectiveness of Determining Student Progress and School Accountability

A good accountability system gives educators appropriate data for making instructional and other educational decisions and should be based on multiple measures and methods of measuring both student learning and school quality. Student performance and school quality should be judged based on high-quality state assessments that measure 21st century skills, local and teacher-designed classroom assessments, computer adaptive tests, and portfolios. NEA and other education advocates have called for greater federal flexibility to allow states to use growth models, which measure the progress of students over time and give credit for improvement on all points of the achievement scale.

—NEA President Dennis Van Roekel

As the work of transforming America’s public schools continues, the issue of measuring students’ academic progress is more critical than ever. Students, teachers, parents, and administrators are making great strides in improving student learning and school accountability, and we need a more accurate way to document that growth. One way is through the use of growth models, which track individual student achievement over time, comparing actual and expected rates of growth or progress in relation to a defined target. Growth models provide schools with the opportunity to measure student progress and document achievement and learning over time.

Department of Education’s NCLB growth model project

In response to growing dissatisfaction from state legislators and national education groups over fair and reliable accountability systems,¹ the U.S. Department of Education announced a pilot program in November 2005 to allow up to 10 states to use growth models to measure Adequate Yearly Progress (AYP).

The department required the states to meet the following seven essential principles for high-quality growth models:²

1. Ensure that all students are proficient by 2014 and set annual state goals to ensure that the achievement gap is closing for all groups of students;

2. Set expectations for annual achievement based upon meeting grade-level proficiency and not student background or school characteristics;
3. Hold schools accountable for student achievement in reading/language arts and mathematics;
4. Ensure that all students in tested grades are included in the assessment and accountability system, hold schools and districts accountable for the performance of each student subgroup, and include all schools and districts;
5. Include assessments, in each of grades three through eight and high school, in both reading/language arts and mathematics that have been operational for more than one year and have received approval through the NCLB standards and assessment review process for the 2005–06 school year. The assessment system must also produce comparable results from grade to grade and year to year;
6. Track student progress as part of the state data system; and
7. Include student participation rates and student achievement as separate academic indicators in the state accountability system.

In May 2006, North Carolina and Tennessee received approval to implement their growth models for the 2005–2006 school year. Alaska, Arizona, Arkansas, Delaware, Florida, and Iowa received full approval to implement their growth models for the 2006–2007 school year.

Additionally, growth models for Ohio, Michigan, and Missouri were approved for the 2007–2008 school year.

In December 2007, the Department of Education opened up its growth model pilot program to all states, and eight additional states plus the District of Columbia submitted proposals: California, Michigan, Minnesota, Missouri, New Hampshire, New Mexico, Pennsylvania, and Utah. The department forwarded those proposals to peer reviewers, a group composed of researchers, national policymakers, and state practitioners. In June 2008, the department announced that two additional states—Michigan and Missouri—met the core criteria: an approved assessment system, the ability to track students over time, inclusion of all students in their accountability systems, and adherence to the 2014 proficiency deadline. While Michigan received immediate approval to use the growth model for the 2007–08 school year data, Missouri’s growth model was approved on the condition that the state adopt a uniform minimum group size for all subgroups in AYP determinations for the 2007–08 school year.

While some policymakers were initially concerned that the use of growth models would weaken accountability and allow too many schools to make AYP, that concern has not been born out. An *Education Week* article, “The ‘Growth Model’ Pilot Isn’t What You Think It Is,” notes that the pilot program models “don’t appear to be making a big difference in the proportion of schools meeting annual goals under the federal law.” The following information comes from state Web sites and state department of education press releases for the 2006–07 school year.

Alaska: Some 62 percent (202) of Alaska’s 326 schools made AYP, 19 more schools than in 2005–06 and 34 more than two years ago. However, the growth model had no impact on Alaska’s AYP results.

Arizona: About 72 percent of schools made AYP in Arizona: 1,325 of 1,851 schools. Two schools met AYP solely because of the application of the growth model. Growth helped one more school make the AMOs (annual measurable objectives) but due to participation rate, the school missed AYP.

Arkansas: Some 72 percent (960) of about 1,334 public schools made AYP. Approximately 60 schools (4.5 percent) met AYP solely because of the application of the growth model.

Delaware: While 70 percent (136) of Delaware’s 193 schools made AYP, 146 schools used the growth model for ratings to determine AYP calculations. Seven schools met AYP solely because of the application of the growth model.

Iowa: Of Iowa’s 1,491 public schools, 90.7 percent (1,352) made AYP in comparison to the 83 percent that made AYP in 2005–06. Approximately 128 schools (8 percent) met AYP solely because of the application of the growth model.

Florida: Almost 33 percent (1,061) of Florida’s 3,233 schools made AYP, in comparison to 916 schools (28 percent) that made AYP for 2005–06. Some 157 schools (5 percent) made AYP because of the application of the growth model.

North Carolina: Of North Carolina’s 2,407 schools, 44.6 percent (1,074) made AYP. The growth model helped 12 schools make AYP that would not have made it otherwise. Ten of the 12 schools also had access to safe harbor and/or the confidence interval for one or more subgroups or the school as a whole. In 2005–06, no schools made AYP via the growth model.

Ohio: Ohio was approved on the condition that the state adopt a uniform minimum group (n) size for all subgroups, including students with disabilities and limited English proficient students, in AYP determinations for the 2006–07 school year. During that time frame, however, the state did not adopt a uniform minimum group size, so AYP determinations were made without the growth model. Without the use of the growth model, 62 percent of Ohio’s approximately 3,500 schools made AYP.

Tennessee: Eighty-five percent (1,447) of Tennessee’s 1,714 schools made AYP. Approximately 19 schools made AYP because of the application of the growth model. Seven schools made AYP in 2005–06 via the growth model.

The states with the highest percentage of change in schools making AYP due to the use of the growth model

are: Arkansas (4.5 percent), Florida (5 percent), and Iowa (8 percent). Alaska had no changes in AYP ratings due to the use of the growth model.

NEA calls for revisions on NCLB model

NEA's priorities for the reauthorization of the Elementary and Secondary Education Act (ESEA) include revising NCLB's accountability model so that it acknowledges success and supports educators to help students learn. Toward that end, NEA has argued for an improved accountability system that includes a growth component. These recommendations were submitted by NEA's ESEA Advisory Committee and approved by the NEA Executive Committee in May 2006. The report, *ESEA: It's Time For A Change! NEA's Positive Agenda for the ESEA Reauthorization*, has been widely distributed throughout Congress and the larger education community.

In line with the *Positive Agenda*, NEA believes that the use of growth models to measure changes in student performance must be included in the next version of ESEA/NCLB. Some important considerations include:

- Recognizing the important components of an accountability system and understanding that use of a growth model is not a panacea but a more logical way to use results from assessments to inform teaching and learning.
- Allowing states to use multiple measures to assess student learning. Multiple measures could include traditional statewide tests as well as other assessments that are developed and used locally or statewide, such as writing samples, research projects, and science investigations, in addition to collections of student work over time, i.e., portfolios.
- Allowing states to implement a transparent growth model methodology that recognizes continual improvement for all students, thereby granting schools credit for improving student achievement at all points on the achievement scale (e.g., credit for schools that move students from below basic to basic or from proficient to advanced), and for improving student achievement over time. Such systems

could track individual student performance or cohort performance.

- Granting states the flexibility to develop growth models, subject to state peer review and review by an independent expert body, such as the National Council on Measurement in Education, the American Psychological Association, the American Educational Research Association, or the Joint Committee on Testing Practice.
- Providing assurances that each state developing a growth model has in place a rich data system capable of collecting the data, individual student identifiers, and professional development/training for educators and administrators in interpreting and using the data to modify instruction, curriculum offerings, and drive other school or student-based supports and interventions.
- Using data from growth models in an accountability system exclusively to improve instructional and curriculum decisions and professional development for educators, but not to label and punish schools or evaluate teacher performance.

Where do we go from here?

NEA believes accountability models should acknowledge success and support educators' efforts to improve student achievement. These models should include multiple measures of student learning and school success. NEA recognizes that growth models will not solve all of the problems the current AYP system creates, but most importantly, growth models will help ensure that all students receive credit for academic progress. States should have the flexibility to use growth models and other measures of progress that assess student achievement over time and recognize improvement on all points of the achievement scale.

There does appear to be a growing consensus that some form of a growth model will be included in the upcoming reauthorization of ESEA. NEA strongly recommends that states be given the flexibility to develop a growth model that most appropriately addresses their own needs.

NEA considers growth models to be only a step in the direction of improving assessment for accountability, not an end point. There are other models to be tried and tested. One example is multiple assessments given across the school year with a cumulative score that is used for accountability determinations. This would eliminate the snapshot character of current assessments and increase the reliability of the scores. There is also much to be done to improve the assessments themselves. If an assessment is too narrow or lacks validity, it is not improved by making it part of a growth model system. If current assessments are weak, especially in terms of tapping higher level cognitive skills that include 21st century learning goals, then better assessments are

needed. Consequently, NEA supports the current trend toward flexibility that is reflected in the acceptance of growth models but advocates continued efforts to improve accountability systems and assessments.

References

¹ National Governors Association issued its proposals for change, March 2006, www.nga.org/Files/pdf/0704NCLBSTATEMENT.PDF, and the National Conference of State Legislators issued its report to call on Congress to make substantial changes, February 2005, www.ncsl.org/programs/pubs/summaries/013153-sum.htm.

² U.S. Department Of Education, Growth Models: Peer Review and Application Approval Information, March 8, 2007, www.ed.gov/admins/lead/account/growthmodel/index.html.

Resources

ESEA: It's Time for a Change! NEA's Positive Agenda for the ESEA Reauthorization, NEA, May 2006.
www.nea.org/home/13193.htm

Council of Chief State School Officers offers resources on accountability systems under NCLB.
www.ccsso.org/federal_programs/NCLB/3348.cfm

Forum on Educational Accountability is a coalition of education groups formed to expand on and advance the ideas to improve federal education policy.
www.edaccountability.org