CCSSO
Council of Chief State School Officers

State Growth Models for School Accountability:

Progress on Development and Reporting Measures of Student Growth

Produced by:
Rolf K. Blank
The Council of Chief School Officers

THE COUNCIL OF CHIEF STATE SCHOOL OFFICERS

The Council of Chief State School Officers (CCSSO) is a nonpartisan, nationwide, nonprofit organization of public officials who head departments of elementary and secondary education in the states, the District of Columbia, the Department of Defense Education Activity, and five U.S. extra-state jurisdictions. CCSSO provides leadership, advocacy, and technical assistance on major educational issues. The Council seeks member consensus on major educational issues and expresses their views to civic and professional organizations, federal agencies, Congress, and the public.

State Growth Models for School Accountability: Progress on Developing and Reporting Measures of Student Growth

Rolf K. Blank

The Accountability Systems and Reporting State (ASR SCASS) Collaborative provided support for this paper.

Council of Chief State School Officers
One Massachusetts Avenue, NW, Suite 700
Washington, DC 20001-1431
Phone (202) 336-7000
Fax (202) 408-8072
www.ccsso.org

State Growth Models for School Accountability: Progress on Developing and Reporting Measures of Student Growth

Rolf K. Blank
Council of Chief State School Officers

June 2010

An earlier version of this paper was presented at the American Educational Research Association's 2010 annual conference. Lauren Stillman of CCSSO conducted the research for this paper.

Council of Chief State School Officers,
One Massachusetts Avenue, NW, Washington, DC 20001
www.ccsso.org

Table of Contents

State Growth Models for School Accountability:
Progress on Developing and Reporting Measures of Student Growth

The Council of Chief State School Officers (CCSSO) is working to respond to increased interest in the use of growth models for school accountability. Growth models are based on tracking change in individual student achievement scores over multiple years. While growth models have been used for decades in academic research and program evaluation, a wide cross section of policymakers at local, state, and national levels are now using different types of growth models. A total of 12 states are utilizing growth models that provide estimates of whether student achievement will meet Adequate Yearly Progress (AYP) state proficiency targets within three years. These models were designed to meet the requirements of the No Child Left Behind (NCLB) Act. In addition, 13 states have developed and implemented growth models as required by state policy; these models use different formulas to measure growth for students and schools. Finally, five states are reporting on growth under both NCLB and state policies. This paper is an overview and description of current state activities with growth models.

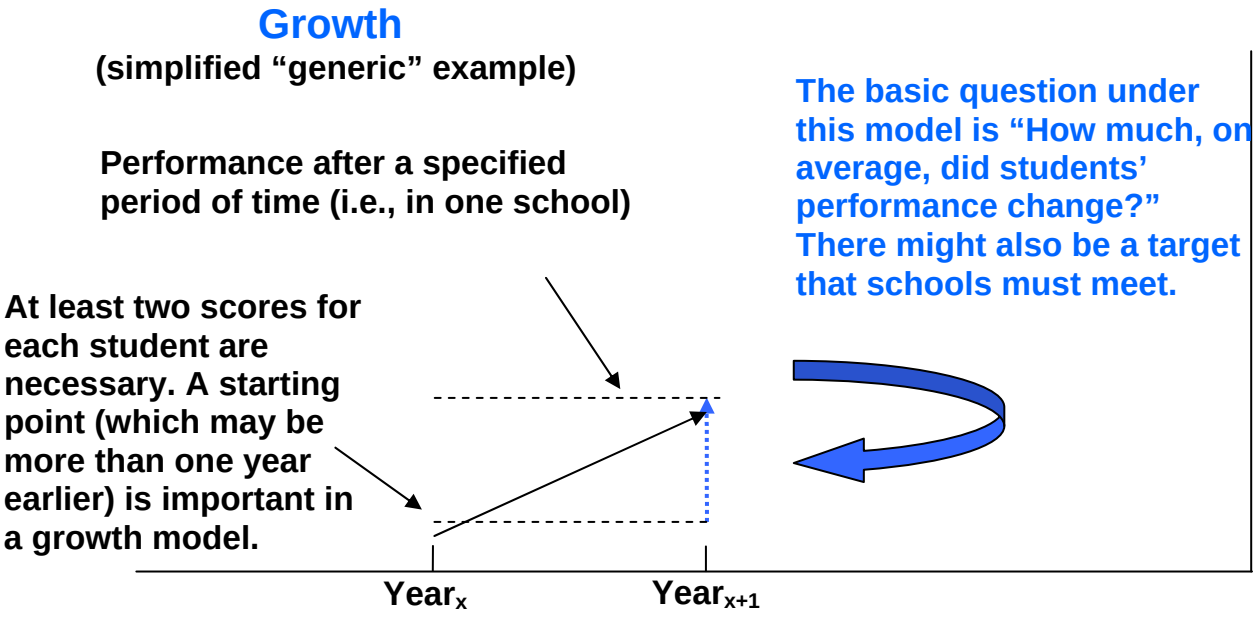
Policymakers and educational leaders are also seeking more information on basic differences between various types of growth models and the assessments, data, and reporting systems necessary to implement them. CCSSO has developed an annual report and webpage focused on state accountability systems, and this paper provides a current snapshot of differences and similarities in growth models used by state education agencies. The present paper is one of CCSSO's recent efforts to provide information on this topic. (See http://www.ccsso.org/.) The Accountability Systems and Reporting (ASR) State Collaborative commissioned this paper, which was prepared with the support of the Collaborative and of the state directors of education accountability.

Growth Models for School Accountability

The term ***growth model*** generally refers to models of education accountability that measure progress by tracking the achievement scores of the same students from one year to the next, with the intent of determining whether the students in a given group are making progress (Goldschmidt, et al., 2005). For example, learning growth can be measured by comparing the performance of this year's fourth graders with the performance of the same students the previous year in third grade. School-level achievement growth is then the aggregate of each individual student's growth, allowing us to account for each student's background and prior achievement. By tracking students over time, policymakers can define progress as the degree to which each student's estimated improvement compares to a state or district level target.

Growth models assume that student performance--and by extension school performance--are not simply a matter of where the school is at any single point in time. Rather, a school's efforts to facilitate academic progress is a better indicator of its performance than simply the average student achievement in a school (i.e., as measured by a status model). Growth models can vary in design, but, two key advantages in using growth models for school accountability are, first, a growth model controls for mobility of

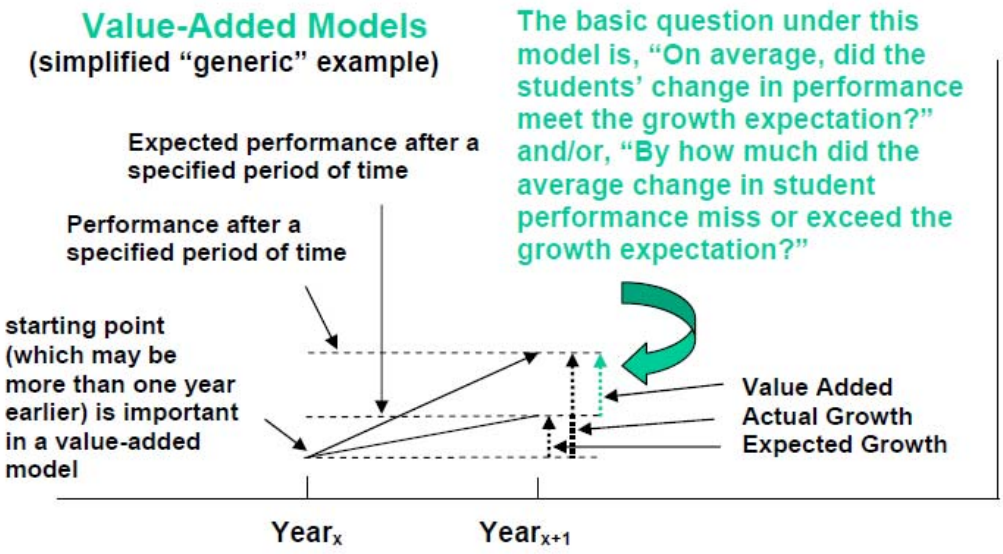
students between schools from year to year, and second, growth model use accounts for students prior achievement and effects of their family background.



The value-added model is a type of a growth model in which states or districts use student background characteristics, prior achievement, and other data as statistical controls in order to isolate the specific effects of a particular school, program, or teacher on student progress (Auty, et al, *Implementers Guide to Growth Models, CCSSO, 2008).* A value-added estimate for a school is basically the difference between its actual growth and its expected growth. It is important to note that schools can demonstrate positive achievement growth, but still have a value-added estimate that is negative. (In other words, the school demonstrated growth, just not as much as would have been predicted given the student inputs.)

In 2010, the US Department of Education called for Race to the Top state proposals that included a measure of student achievement in evaluating teachers. As a result, states began expressing a strong policy interest in value-added models. Several researchers have written and reviewed these models (Harris, D.N., "The Policy Uses and Policy Validity of Value-Added and Other Teacher Quality Measures," 2008); Braun, H. 2005, *Using Student Progress to Evaluate Teachers: A Primer on Value-Added Models*). CCSSO and other organizations have begun to track the efforts of states to use value-added growth models in evaluating teacher performance.

Value-Added Models
(simplified "generic" example)



The basic question under this model is, "On average, did the students' change in performance meet the growth expectation?" and/or, "By how much did the average change in student performance miss or exceed the growth expectation?"

Tracking States' Development of Growth Models: 2010

Three factors have caused state education departments to prioritize the development and use of growth models. First, NCLB requirements for determining AYP created an interest in how growth could be effected as required by law; the ED first encouraged the use of the growth model in 2005. Second, educators and leaders have asked that growth models not only determine AYP but also include all students as well as other subjects in addition to math and language arts. Third, for several years states have been developing longitudinal student data systems that track student scores over multiple years, and the federal grants provided under NCLB accelerated this push for such data systems. States have responded to calls from policymakers to provide access to longitudinal data systems for use in growth-based accountability reporting as well for purposes of program evaluation or school-based analysis of student performance. .

In this report, CCSSO worked with the state ASR SCASS members to plan two methods of tracking and analyzing development and use of growth models in all states. First, CCSSO conducted a survey of all 50 states' accountability directors in January 2010 to ask them to identify if they had a growth model in place or planned to use one. In addition, we asked several questions about the purposes and characteristics of current growth models, the methods of reporting growth data, and any issues or problems in model development. Other 50-state projects, such as the Data Quality Campaign have reported information on the status of state data systems, which provide the core ingredients for development of a growth model (DQC, 2010 http://www.dataqualitycampaign.org/). This study was aimed at identifying the key state decisions for organization, analysis, and use of longitudinal data to measure growth. Each state makes specific decisions for their growth model computation and states set rules governing determination of growth. For example, states decide how many years of data will be used to analyze growth and how targets are set for expected student performance by a specific point in time.

In addition to the survey, a second method for data collection was analysis of state education agency websites that report on growth models, including NCLB-specific models as well as models developed in accordance with state policies. CCSSO conducted the analysis of the growth model reporting websites, asking questions about how and what is reported by states. The core objectives were to

- identify the types of growth models and characteristics of their measurement models, including the assessments and data used;
- understand the statistics and metrics used by states in reporting student achievement; and,
- provide information on how growth results are organized and accessed by educators and the public.

The review of state growth reporting websites was conducted in January through March 2010. To develop analysis categories, we drew on a recent ASR-commissioned paper

which describes the development of state models as proposed under the ED's Growth Model Pilot Program, 2005-2008 (O'Malley, et al, 2009).

Table 1: Results of a 50-State Survey of Accountability Directors (January 2010)

What is Your Current State Growth Model?

	2010	2009
No plans	2	3
Considering	11	17
Developing	13	7
Implemented	17	12
	43	39

What is the Defined Purpose of the Growth Model in Your State?

Information on School and Student Achievement	37
Accountability	27
Identifying Successful School Improvement Strategies	20
Instructional Support	18
Program Evaluation	17
Recognition of Schools	14
Teacher Effectiveness (link to Students)	13
Financial Incentives	4

What Issues or Problems Have You Encountered with Your Growth Model?

Communication/Understanding of Stakeholders	23
Validity/Technical Considerations	17
Change in Assessment System or Tests	17
Limited Resources – Fiscal	14
Limited Resources – Human	14
Overall Capacity (e.g., adequate/inadequate data system)	8
Other (e.g.,research on what is "adequate" growth)	2

Is Your State Reporting Growth Data? If So, for Whom is it Designed?

Administrators	16
Teachers	14
Parents	12
Public (via website)	14

Other 50-State Survey Results

How Does State Growth Reporting Purpose Differ from NCLB-AYP Purpose?

- AK state model includes all students and uses seven proficiency levels;
- NC state model applies to all students and is compensatory;
- MN state model is "norm-based" (i.e., based on student distribution);
- TN state model includes value-added teacher/student association analysis and additional subjects
- WA model compares schools to other schools with similar characteristics and looks at improvement over time

What are Your State's Plans for Using Growth Models in Evaluating Teacher Effectiveness?

- 23 states out of 43 reported that they plan to use student growth in analyzing teacher effectiveness;
- Tennessee reported that it already does so;
- Four states specifically referenced RTTT;
- Most states reported that details are still to be determined;
- Of nine states that reported additional details
  --Six reported specific start dates: 2010 (3), 2011 (1), 2012 (2);
  --Three reported at least 50% of teachers' ratings will be based on student growth;
  --Two reported that they will control for prior student performance; and,
  --Three reported that growth will be measured only for math and reading teachers, grades 3 or 4 to grade 8.

State Reporting of Growth Results

The CCSSO review and analysis of state web-based reporting on growth models covered 22 states. The characteristics of the state growth models we analyzed and categorized are identified in Table 2. Following are several summary findings:

- Type of Growth Model: growth-to-proficiency, linear growth, projection, transition table, value-added (see below);
- NCLB or State Model: currently, 12 states have a growth model matching NCLB requirements, and 13 states have a growth model based on state policy.
- Metric for School Reporting: Varies by state. Rating determined by number or percentage of students meeting growth target; also determined by median percentile growth, or improved level;
- Grades for Reporting Growth: Mostly grades 3-8 or 4-8;
- Years of Data Included in Calculations: Two or three years of data;
- Reporting Format, Use of Graphics: Formats are widely varied, with a trend toward use of graphics and web interface;
- Disaggregation by Subgroups: Most states report growth for school and for subgroups by demographics;
- Multiple Years of Growth Reported: Most states report growth for one year, while several track trends over time; and,
- Access to Student Data: A few states provide a description of how parents, educators, and others can use growth data. A majority of states have web links to district data, and one state allows parents access to their children's data.

Following are several summary observations on how growth data are reported:

- Across the states reviewed, growth model reporting methods have just begun to focus on uses of the information for different audiences;
- States are starting to use graphics, including bar charts and trend displays, in order to show patterns of growth by school or subgroup;
- Colorado developed an interface that provides users with several options for how results can be viewed; additionally, the user can tailor analyses and reports, according to individual needs;
- Some states use the term *growth model*, while others have created their own names for the models that they have developed; and,
- States should consider showing how educators can use data to identify problem areas and, by extension, improve instruction and learning.

State	Type of Growth Model	NCLB or State Model	Metric for Reporting	Grades for which Growth Calculated	Number of Years of Growth Data Used in Calculation	Reporting Format, Use of Graphics	Disaggregation by Subgroups	Multi-year Growth or Trends	Use of Growth Data/ Parents
Alaska	Growth to Proficiency	NCLB	Number of students proficient based on growth	Grades 4-9	up to 4 years to Grade 10	School AYP Table	Yes	Multiple years on separate pages	Used for AYP
Arizona	Growth to Proficiency	NCLB	Percent proficient 3 years growth	Grades 4-7	3 years or by Grade 8	NA	Yes	NA	Used for AYP
Arkansas	Growth to proficiency (NCLB) Linear growth(state)	NCLB + State	Percent proficient (AYP), Growth percentiles (state)	Grades 4-8	up to 3 years to Grade 8	Interactive graphical page	Yes	First year 08-09	Compare Growth to achievement score
Colorado	Linear growth	State	Median school growth percentiles; % students at multi-progress targets	Grades 4-10	Projections 2 years; 3 years/ to Gr. 10 progress targets	Interactive graphical page and tables	Yes	Trends in growth over time	Options for public, Registration for ind. Data
Connecticut	Vertical Scale	State	Total Average gains on vertical scale using multi-levels	Grades 3-8	2 years	Graphical display per school/district	Yes	Multiple years on one report	Districts register ind.stud. data; Parent webpage
Delaware	Value/ Transition Table	NCLB	Value table levels progress	Grades 3-10	2 years	(registered user pages)	Yes	Growth report multiple years	Separate web site for schools
Florida	Linear growth	NCLB + State	Percentages of students making gains	Grades 4-10	3 years	Excel table page by school/district	No	Multiple years on separate pages	School grade on report card
Indiana	Linear growth	State	Growth percentiles	Grades 4-8	2-4 years	School high/low growth by high/low achievement	Yes	NA	Compare Growth to achievement
Iowa	Value/ Transition Table	NCLB	Number and percentage of students meeting growth	Grades 3-8	2 years	Summary tables by subject for all schools	Yes	Multiple years on one report	Used for AYP
Massachusetts	Linear growth	State	Median school growth percentiles	Grades 4-8, 10	at least 2 years	Growth summary page per school/dist	Yes	Multiple years on separate pages	Separate secure portal for district administrators
Michigan	Value/ Transition Table	NCLB	Number of students proficient based on growth (after status applied)	Grades 4-8	3 years	Table number of students proficient by status and growth	Yes	Multiple years on separate pages	Used for AYP, Schools have private login page
Minnesota	Value/ Transition Table	State	Proficient and non-proficient students with low, medium, high growth	Grades 4-8, 11	2 years	Growth summary page per school/dist	Yes	One year only	Page designed for broad use
Mississippi	Projection Model	State	School growth target "met" or "not met"	Grades 4-9	2 years	Summary table of indicators	No	Multiple years on separate pages	Designate whether status & growth met
Missouri	Growth to Proficiency	NCLB	Percentage of students proficient based on status and growth combined	Grades 3-8	up to 4 years to Grade 8	School AYP Table	Yes	Mulitple years on one report	Used for AYP
New Hampshire	Growth to Proficiency	State	Students met growth target based on stand. dev.	Grades 2-8	up to 3 years	Table reporting growth by school	Yes	Multiple years on separate pages	Growth met by group by target
North Carolina	Growth to Proficiency (NCLB) Value-added (State)	NCLB + State	Percent proficient and whether school met expected or high growth	Grades 3-8	2-3 years	Summary table of indicators by school	No	Multiple years on separate pages	AYP; School rewards
Ohio	Projection (NCLB); Value-added (State)	NCLB + State	Value-added gain, standard deviation, and whether meets expectations	Grades 4-8	2-3 years	Multiple indicators per school or district	No	Multiple years on one report	State indicators; Register for "power users"
Oregon	Growth to Proficiency	State	Percentage of students meeting growth target	Grades 3-8, 10	2 years	Table with percentage of students meeting growth target	Yes	Report shows change from prior year	Explanation of growth data for public
Pennsylvania	Projection Model	NCLB	Mean NCE gains, individual student percentiles, school met growth target relative to state	Grades 3-8	3 years	Summary tables by district, able to drill down to student level	Yes	Multiple years on one report	Used for AYP; specific registration page; demo page also available
Tennessee	Projection (NCLB); Value-added Model (State)	NCLB + State	Mean NCE gain compared to proficient in 3 years; compared to state growth standard	Grades 3-8	at least 2 years	Table with gains per grade	Yes	Multiple years on one report	Teachers have student data
Texas	Projection Model	NCLB	Number and percentage of students who met growth target (regardless of status)	Grades 3-10	2 years	Summary pages for all students by grade	Yes	Multiple years on separate pages	Used for AYP
Utah	Value/ Transition Table	State	Value table levels progress	Grades 3-8, HS	2 years	Summary table by state, district, or school	Yes	Multiple years on separate pages	Decision Tree state performance level

Prominent Questions and Issues with Growth Models

Currently, educators and leaders are asking several types of questions about the development and use of growth models. As CCSSO reviewed state growth models, report format, web pages, and explanations of the rationale behind the models used, we identified several key issues across states.

• *Vertical Scale and Vertical Alignment*: Almost all states that developed growth models submitted to the US Department of Education for approval under the NCLB Growth Model Pilot Program use state student assessments that report scores using a vertical scale. For example, the scores for grades 3-5 are all reported on the same assessment scale; thus, results for students in one grade can be directly compared to their results from a prior or a succeeding grade. One state's model, Delaware's, does not have a vertical scale for its assessments. Delaware instead uses a transition value table method to measure growth. All states reported that they have included in their growth models vertically aligned standards for grades and subjects. The states also reported on their individual alignment processes. Colorado developed and reported a state growth model based on median percentile, which does not rely on vertically scaled assessment. Indiana and Massachusetts have implemented a similar model.

• *Reporting Growth Model Results*: The CCSSO analysis of growth highlights several features of state reporting methods. The key question for state growth models is whether or not a school meets AYP within three years; thus, many states simply show on the school report card if the computed growth for math and language arts scores by subgroup allows the school to meet the proficient target within three years. Some states have developed their growth models for several other purposes, including state accountability for a broader range of students; indicators of change over time within schools; or school improvement planning. For these purposes, school and district reports need other kinds of measures and statistics. States are now including growth statistics as part of broader web-based school indicators report, such as those used in Colorado, Delaware, Indiana, North Carolina, Minnesota, Mississippi, Ohio, and Utah.

• *Individual Student Growth Data*: Only one state—Colorado—currently has individual student growth data accessible to parents through the state webpage. Other states reported to CCSSO that individual student growth data from state assessment results can be accessed by educators through school districts or a private website linked to a data warehouse. These states include Connecticut, Delaware, Massachusetts, and Tennessee. Educators in many school districts, among them Boston, Dallas, Chattanooga, New York, and Chicago, use individual student growth data in order to assess needs, diagnose problems, and plan initiatives. State growth models and accountability systems are now working to provide this kind of data access.

Types of Growth Models Used for School Accountability

• *Growth-to-proficiency models*, also called growth to standards models or trajectory models, evaluate whether students are on track to meeting the state proficiency standard at some specified point in the future. These models work backwards from a proficient score in some future grade and then divide required student gains into annual pieces.

• *Value tables* and transition models are growth models that evaluate student transitions across performance levels or subdivisions of performance levels. These models give credit to schools for moving students into higher levels or sublevels during the school year. The focus of these models tends to be on student changes over a period of two years.

• *Projection models* predict student performance in the future. Credit is given to schools for currently non-proficient students who are nevertheless projected to reach proficiency in three or four years. These models project student performance based on two factors: a) past performance and b) prior cohorts' performance in the target grades. The difference between a growth-to-proficiency model and a projection model is that the former determines growth by using only a student's current status and the future grade-level proficiency score, whereas the latter assesses growth by comparing a student's current status to the past typical average growth of a previous cohort that already has reached the target grade (O'Malley et al., 2009).

• *Linear models.* In 2009-10, several states implemented linear growth models, primarily following the example of Colorado. These models report a school's median percentile annual growth across all students, as based on a three-year analysis of individual student data.

State Growth Models – Brief Definitions and Descriptions

Alaska
Alaska's growth model was designed to meet the NCLB-AYP requirements based on setting growth to proficiency. The district and school reports identify the contribution of status and/or growth to AYP. Growth targets are calculated for all students scoring below 300 on math or ELA assessments in grades 3-10. Target scores are identified for each student to become proficient within four years or by grade 10, and school or student subgroup growth is measured by the percentage of students meeting their target. The growth model is explained in a separate document that is accessible on the web.

Colorado
The Colorado state growth model focuses on growth rates of students, schools, and districts over time and pinpoints which schools and student groups are making the strongest gains. Growth is measured against expected state standards, and median growth percentile is the common metric reported. An interface allows users to change parameters of time and targets and shift from the state model to the NCLB model. The

interface provides for a Google Maps view or a three-dimensional grid. The growth model webpage provides options for public access, educator access, and individual student access through a password registration. The reporting page helps the public and educators identify the state's most effective schools and districts, as based on the highest sustained student growth rates. The website also provides the public with a video tutorial and aggregated data displays.

Connecticut
Growth is documented in a vertical scale analysis report as part of the state assessment reporting. The reporting method shows achievement gains across multiple years using scale scores for multiple grades. The use of graphics clearly illustrates student growth. Educators can access individual student reports through a registration page.

Delaware
The Delaware accountability system was designed to merge the existing state accountability processes with the NCLB-AYP requirements. The system allows Delaware educators to monitor the progress of student subgroups at the school, district, and state levels. Through a separate password-protected website, educators can also review individual student progress over multiple years. Using the school-level transition table, School Ratings are assigned as follows: 5 stars (Superior), 4 stars (Commendable), 3 stars (Academic Review), 2 stars (Academic Progress), 1 star (Academic Watch). Districts must meet a state progress target. This district-wide calculation is a scaled composite score consisting of the percentage of students in each performance level for reading, math, science, and social studies. The district must achieve a certain composite score AND show specified amounts of progress over last year's composite score to be rated Above Target, Meets Target, or Below Target.

Florida
Annual growth in Florida student achievement is reported for reading and math in grades 3-10. The focus of the school report is the annual school grade. To calculate the grade, points are awarded for each 10 percent of students moving up by one achievement level (state sets five levels); the maintenance of already existing high achievement; or students making one grade achievement growth within any given achievement level. Webpage spread sheets for each school are available and break down how individual points contributed to the annual grade. Detail of reporting and a fairly simple design makes growth understandable. Users can access individual school grades from the Florida Department of Education webpage. Multiple years of growth trends or each school and subgroup are also available. Florida reports the same data for the NCLB-AYP model using a growth-to-proficiency calculation based on three years of data.

Minnesota
The state growth model is based on a transition table that averages individual student gains from one year to the next and identifies the percentage of students per school with low, medium, and high growth. Each year is reported separately with a simple and clear matrix chart for each school. Definitions of categories and cut points are reported, and some description of data uses is provided.

Mississippi
Calculated by a state-developed regression model, school and district growth is determined by the proportion of students who meet a predicted achievement score based on the prior year's composite assessment results (e.g., 2009 grade 9 Algebra I and Language Arts scores as predicted based on 2008 scores in the same subject matters). Growth results as compared to expected growth are reported for school and district in a summary table, together with other achievement outcome measures, including composite scores. Multiple years of growth measures can be reviewed in separate reporting pages. A technical paper explains research and analysis models and the data analysis process.

Missouri
To assess AYP for schools and districts, the Missouri growth model uses three years of data to establish a trajectory of expected growth to proficiency. The state reports district and school progress by using five years of data to determine the extent of improvement. Reported each year in order to identify patterns over time, school and district AYP data includes status and growth. The reporting webpage shows static tables that are easy to read for users, and the state provides detailed descriptions of computations. For each school, the state also reports a range of other indicators as part of the school accreditation process.

New Hampshire
New Hampshire's "Follow the Child Growth Model" calculates expected growth targets for every student and tallies the number of students meeting their own individual targets. The targets encourage schools to focus on each student's achievement and growth. Annual growth in math and reading is based on students scoring within one standard deviation from the state's proficiency target

North Carolina
A school's rating is based on a composite score, in which each student's annual assessment score is compared with the averaged score of the prior two years. Change on assessments in math, ELA, science, and history is measured against the expectation target. Schools receive state recognition based on their ratings. A growth-to-proficiency measure is also reported for each school and group under the NCLB-AYP " to determine which schools will meet their proficiency targets within three years.

Ohio
The Ohio value-added growth model provides one of four sets of indicators of annual school and district performance on the state's report card. Growth is computed for students grades four through eight, and schools are rated as either being above or below average on one-year growth. Report cards provide state ratings for each school based on all indicators, including AYP. An interactive feature of the web page allows users to download data or create custom-made reports and benchmark comparisons. Ohio uses a separate projection growth model to determine school growth to AYP, with projections based on prior performance in four core subjects. Students must be on a path to proficiency within two years.

Oregon
The new state growth model, which began in 2008-09, sets "target" scores for below-standard students. The targets will be based on a) each individual student's prior testing history and b) realistic and attainable achievement goals for all students. Students and teachers are also made aware of individual targets ahead of time. In contrast to NCLB-AYP that disaggregates data into specific subgroups, the new school report card rating system uses a holistic rating and factors in the performance of *all* subgroups with an historic achievement gap. Growth is a key feature of the new report card. The new model provides full credit to schools in which students are showing sufficient growth. By focusing on growth for low-achieving students, the state is placing emphasis on closing the achievement gap and can provide recognition to schools successful in this area.

Tennessee
Under the TVAAS model for measuring and reporting growth, the Tennessee Department of Education sets the growth standard for each district and school to reflect the state's present student progress. Each year's gain is reported in comparison to prior-year gains based on individual student growth and compared to the state minimal expectation for districts and schools. Also, Tennessee reports growth to proficiency for AYP with a projection model for grades 4-8. Assessment scores are converted to normal curve equivalents in order to compare growth.

Utah
The U-PASS state accountability transition table growth model reports annually on proficiency and progress for each school, both of which are determined by composite scores based on math, language arts, and science assessment results. Annual state ratings are determined by sub-group and school progress; proficiency; attendance; and graduation rate. Progress is based on value table gains from one year to the next, as based on six levels of proficiency. The value table for each school provides transparency of reporting on student and school progress.

Summary

Policymakers and educational leaders are seeking more information concerning core differences between several types of growth models and the assessments, data, and reporting systems needed to implement them. CCSSO has reported on the development of state accountability systems for the past decade, and this paper adds to our work by providing an overview of the differences and similarities in growth models used by states.

While growth models have been used for decades in academic research and program evaluation, now a wide cross section of policymakers at local, state, and national levels are moving forward with the use of different growth models. Currently, 12 states are using school accountability growth models which provide estimates that student achievement will meet NCLB AYP state proficiency targets within three years. In this study we found that 13 states have designed and implemented growth models based on state policy; these models use different formulas to measure growth, both for students and schools. Many states are now using various growth models and longitudinal data, with the intent not just of reporting on accountability but also of using these data to help schools and teachers in even broader ways.

References

Accountability Systems and Reporting (ASR) State Collaborative. http://www.ccsso.org/projects/Accountability_Systems/.

Auty, W. et al (2008). *Implementers' Guide to Growth Models,* ASR-SCASS paper. Washington, DC: CCSSO. http://www.ccsso.org.

Braun, H. (2005). *Using Student Progress to Evaluate Teachers: A Primer on Value-Added Models*. Princeton: ETS.

Data Quality Campaign (2010). http://www.dataqualitycampaign.org/.

Goldschmidt, P. et al. (2005). *Policymakers' Guide to Growth Models,* ASR-SCASS Paper. Washington, DC: CCSSO. http://www.ccsso.org.

Harris, D.N. (2008). The policy uses and policy validity of value-added and other teacher quality measures. In D. H. Gitomer (Ed.), *Measurement Issues and Assessment for Teacher Quality* (pp. 99-130). Thousand Oaks, CA: SAGE Publications.

O'Malley, K. et al. (2009). *Review of States Growth Models Developed under US ED Growth Model Pilot Program, 2005-2008.* ASR-SCASS paper, Washington, DC: CCSSO. http://programs.ccsso.org/Accountability_Systems/.


CCSSO
Council of Chief State School Officers