

## Measuring Annual Improvement in Student Achievement: Pilot Study Results

## USDE Growth-Based Accountability

### Alignment Elements

1. All students are proficient by 2013-14 and close achievement gap for all groups of students
2. Expectations not based on student background and school characteristics
3. Reading/language arts and mathematics

## USDE Growth-Based Accountability

### Foundational Elements

4. Must include all students, schools, and districts and held accountable for student group performance
5. Must have state assessment system approved through peer review process
6. Must track student progress
7. Must include student participation rates and student achievement on additional indicator

## Additional Guidance

### States *should*

- incorporate available years of existing achievement data
- align growth time frame with school grade configuration and district enrollment
- make growth projections for all students, not just those below proficient
- hold schools accountable for same student groups as they did under status model

## Additional Guidance

### States *should not*

- use wide confidence intervals
- reset growth targets each year
- average scores between proficient and non-proficient students
- combine growth model and index system

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## Background

- House Bill 1, Senate Bill 1031, and NCLB
- Growth pilot study
  - Comparison of two types designed to meet state and federal requirements
    - Proportional growth type—Reaching the Standard (RTS) Model
    - Regression-based type—EVAAS Models

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## Reaching the Standard

- Compares students' actual performance to growth targets to determine if students have academically progressed over the school year
- Growth targets defined individually for students using baseline student scores
- Growth targets
  - For students below Met Standard, sufficient score improvement to pass by grade 8 and by grade 11
  - For students in Met Standard, expectation is continued score improvement
  - For students in Commended Performance, expectation is maintaining a Commended Performance score

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## EVAAS Models

- Projection Model
  - Provides estimates of individual students' likelihood to pass in subsequent grades
  - Uses scores from all content areas in all years
  - Projections made for students with at least 3 scores
  - Pilot analysis projections
    - Grade 8 based on grades 3-7
    - Grade 11 based on grades 8-10

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## Growth in Accountability

- RTS
  - Provides the numbers of students in classes, schools, and districts in one year and over several years that are on track to pass
- EVAAS Value-Added Model
  - Provides measures of the influence of educational entities on the academic progress of students using multiple years of data

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## Pilot Study

- Comparison of
  - Practical features
  - Psychometric features
  - Empirical features

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## Empirical Comparison

- Evaluation of data on approximately 2.4 million students testing in English or Spanish in reading, mathematics, science, and social studies
- Data were 2007 operational data with history data from 2004-2006
- Compared methods on
  - % of students with sufficient growth data
  - % of students who met 2007 growth expectations
- Classification and projection accuracy

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## Reading and Math Results

Group	READING	
	Percent Students Meeting RTS Growth Expectations	Percent Students Meeting EVAAS Growth Expectations
All Students	51	70
Students Who Did Not Meet Standard in 2007	8	49
Students Who Met Standard in 2007	40	72
Students Who Scored Commended Performance in 2007	94	76
Group	MATHEMATICS	
All Students	46	60
Students Who Did Not Meet Standard in 2007	9	30
Students Who Met Standard in 2007	42	70
Students Who Scored Commended Performance in 2007	93	72

## Science and Social Studies Results

Group	SCIENCE	
	Percent Students Meeting RTS Growth Expectations*	Percent Students Meeting EVAAS Growth Expectations
All Students	12	64
Students Who Did Not Meet Standard in 2007	0	39
Students Who Met Standard in 2007	19	71
Students Who Scored Commended Performance in 2007	13	85
Group	SOCIAL STUDIES	
All Students	38	68
Students Who Did Not Meet Standard in 2007	3	64
Students Who Met Standard in 2007	33	68
Students Who Scored Commended Performance in 2007	59	69

\*Science results based only on grade 11, since grade 8 science first given in 2008.

## Accuracy of Growth Decisions and Projections

- Different models, different concept of accuracy
  - RTS model—accuracy in the decision about whether a student met or did not meet the growth target in 2007
  - EVAAS projection model—accuracy in the decision about whether students' actual performance level in 2008 matches their projected level based on data through 2007

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## Accuracy of Growth Decisions and Projections

Cohort/Subject	RTS % Accurate Classifications	EVAAS % Accurate Projections
Grade 7-8 Math	88.6%	86.9%
Grade 7-8 Reading	88.0%	96.0%
Grade 10-11 Math	91.0%	89.1%
Grade 10-11 English Language Arts	95.6%	94.6%

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## Five Distinguishing Features

1. Replication
  - RTS model calculations can be replicated
  - EVAAS calculations not likely replicated; some regression-based models similar to EVAAS can be replicated
2. Precision
  - RTS model classification accuracy 85%-96%, with errors for students below Met Standard at 2% or less
  - EVAAS projection accuracy 85%-96%

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## Five Distinguishing Features

3. Responsiveness to Content Area Instruction
  - RTS model will reflect content-area instruction resulting in content-area score changes for students
  - EVAAS model provides reliable estimates of the influence of educational entities on growth
4. EOC Assessments
  - EVAAS models can better handle lower amounts of content overlap across courses and different course sequences than RTS

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## Five Distinguishing Features

5. Timing of Reports
  - RTS results can be reported at the same time as results are currently reported
  - EVAAS results reported after regular reports
  - Some regression-based models similar to the EVAAS models could be reported at the same time as results are currently reported

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## Next Steps

Activity	Time
Publish report	August 2008
Conduct review of TEA growth model pilot study	September 5, 2008
Determine growth model (advisory groups, technical advisory committee, public comment)	November 2008
Apply to USDE for growth model inclusion in 2009 AYP calculations	December 2008
Report student growth	Spring 2009
Plan use in state accountability system and federal AYP	Spring - Summer 2009

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