



The Center *for*
Public Education

Growth Models: A guide to informed decision making

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Which school is more
effective?

School A

- 90 percent of their 4th grade students scored at or above proficient on their state test.
- This years 4th graders made less than a years worth of gains from last year in 3rd grade.

School B

- 45 percent of their 4th graders scored at or above proficiency on their state assessment.
- This year's 4th graders made a year and a half worth of gains from last year in 3rd grade.

Questions we'll be answering

- Why are policymakers talking about growth models?
- What are the different types of growth models?
- What is needed to implement a growth model?
- What are the limitations of growth models?
- How can growth models be used effectively?



Why are policymakers talking about growth models?

- Federal level
- State level
- Local level

What are the different types of growth models?

- Improvement models
- Performance Index models
- Simple Growth models
- Growth to Proficiency models
- Value-Added models

Status Model

Achievement levels	This year's 4 th graders	Percent making AYP
At or above Proficiency	55%	55%

Improvement Model

Achievement level	Last year's 4 th graders	This year's 4 th graders	Change
At or above proficiency	55%	60%	+ 5 points

Performance Index Model

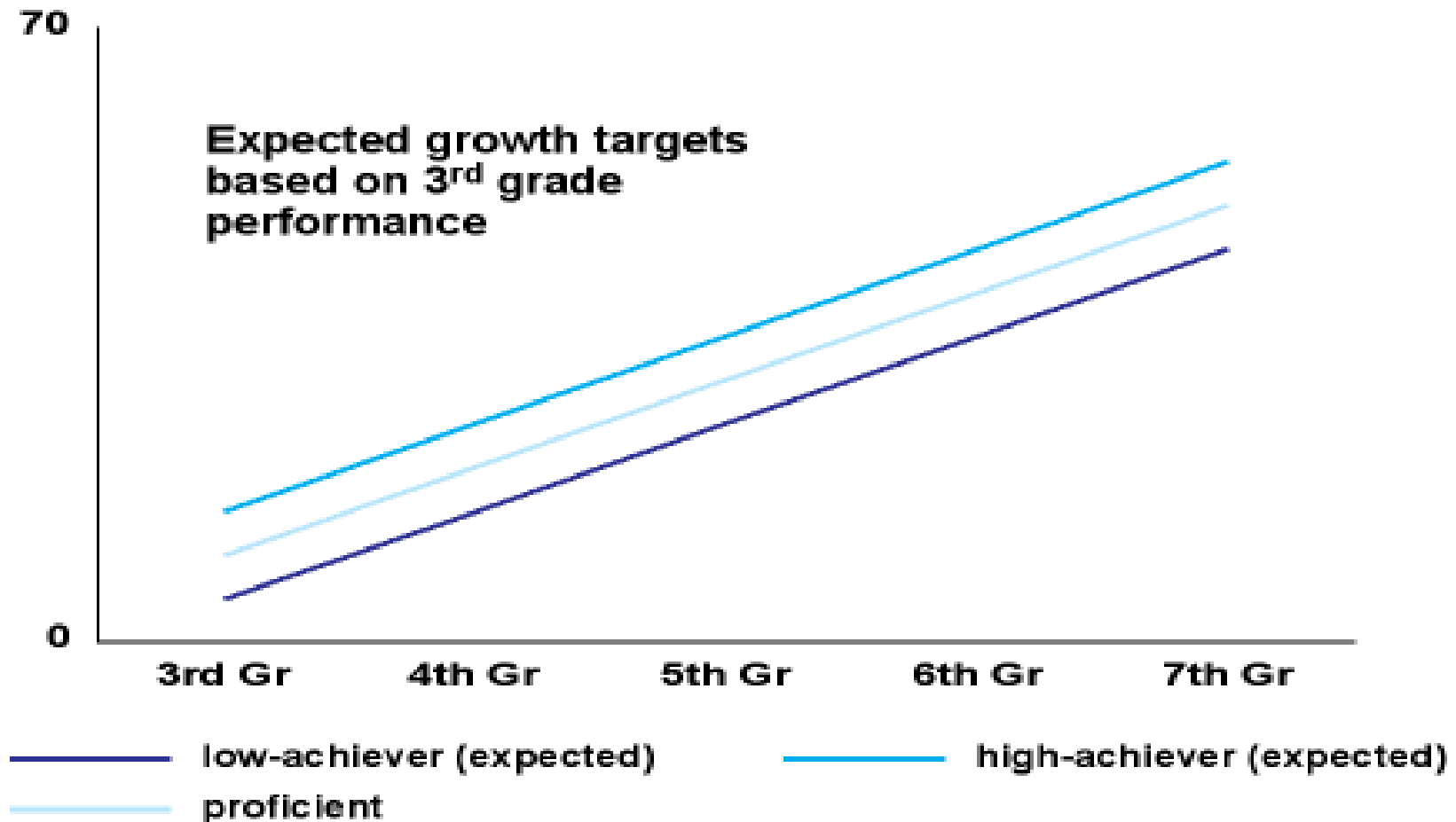
Achievement level	This year's 4 th graders	Computation	Points awarded
Proficient +	55%	.55 x 100 pts	55 pts
Basic	25%	.25 x 50 pts	13 pts
Below Basic	20%	.20 x 0 pts	0 pts
Index score			68 pts

Simple Growth Model

Student	Last year's 4 th grade score	This year's 5 th grade score	Change in scale scores
Student A	350	400	+ 50
Student B	370	415	+ 45
Student C	380	415	+ 35
Student D	325	390	+ 65
Student E	310	370	+ 60
School average	347	398	+ 51

Simple Growth Model

Growth targets based on simple growth models expect all students to make one year's growth, but they will not close achievement gaps or move low-achievers to proficient.

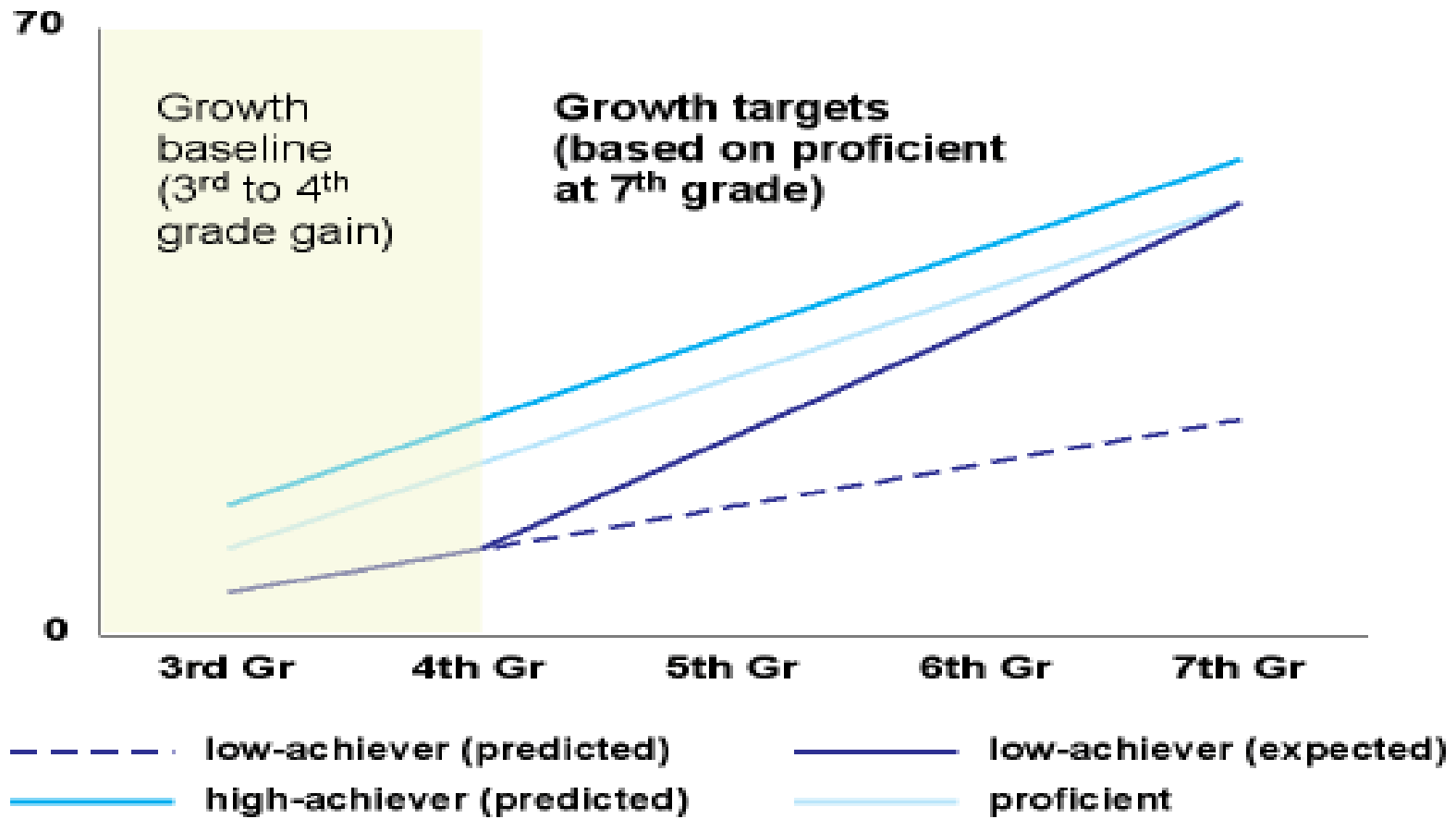


Growth to Proficiency Model

Student	Last year's 4 th grade score	This year's 5 th grade score	Change	Student score proficient?	Student's growth target?	Did student make AYP?
Student A	350	400	+ 50	Yes	--	Yes
Student B	370	415	+ 45	Yes	--	Yes
Student C	380	415	+ 35	Yes	--	Yes
Student D	325	390	+ 65	No	59	Yes
Student E	310	370	+ 60	No	64	No

Growth to Proficiency Model

A **growth to proficiency** model sets yearly targets that will put low-achievers on pace to meet proficient and narrow achievement gaps.

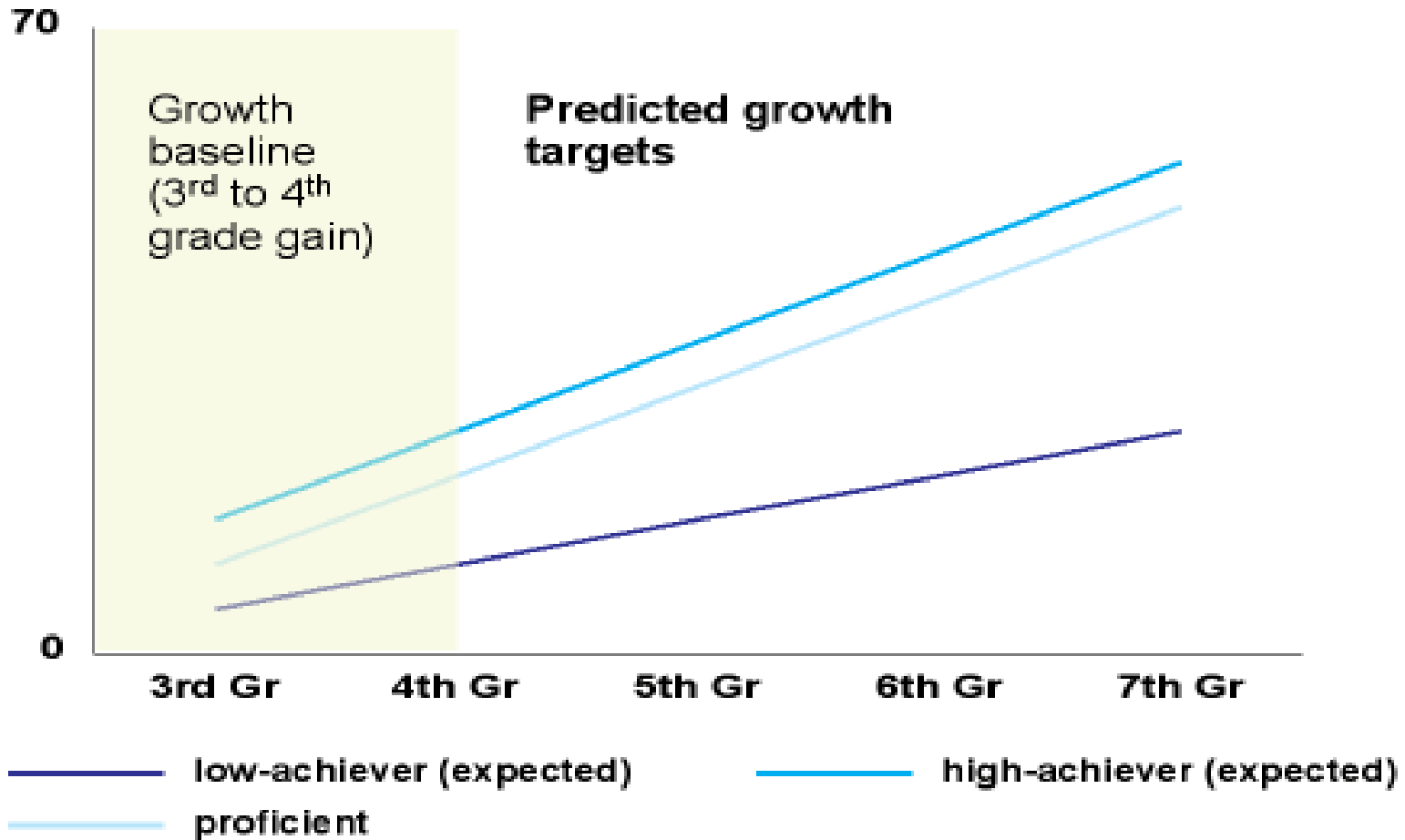


Value-Added Model

Student	Last year's 4 th grade score	This year's 5 th grade score	Change	Expected Growth	Growth effect
Student A	350	400	+ 50	+ 50	Expected
Student B	370	415	+ 45	+ 50	Negative
Student C	380	415	+ 35	+ 55	Negative
Student D	325	390	+ 65	+50	Positive
Student E	310	370	+ 60	+ 50	Positive
School effect	347	398	+ 51	+ 51	Expected

Value-Added Model

A **value-added model** sets yearly targets that can predict smaller future growth from low-achievers and widen achievement gaps.



What is needed to implement a growth model?

- A statement of policy intent
- Properly designed, annual tests
- Data systems to collect, store, and analyze the data
- Statistical expertise
- Professional development
- Transparency and good communication
- Funding



What are the limitations of growth models?

- Imperfect measures of student achievement
- No data for untested subjects
- There can be missing or incomplete student data
- Experts dispute how completely “Value-Added” models isolate the teacher’s effect
- A single growth model does not serve all purposes
- Measuring growth in high school is difficult



What's going on at the district level?

Districts using growth data

- Districts throughout Pennsylvania, Tennessee, & Ohio.
- Dallas, Houston, Milwaukee, New York City, Seattle and hundreds of other districts across 21 states.
- 3000 districts nationwide use growth data from the Northwest Evaluation Association (NWEA).



How is growth data being used at the district level?

- School accountability
- To recognize low performing schools making significant progress
- Program and policy evaluation
- Inform curriculum and instruction
- Teacher assignment
- Target teacher and student supports
- Teacher evaluation



Oak Hill LSD Ohio

- Type of model
 - Value-Added
- How the data is used
 - Identify good instruction and programs
- Result
 - District went from a low performing district to a high performing district



Rochester New Hampshire

- **Type of model**
 - Value-Added model
 - Simple growth model from formative assessments (NWEA)
- **How the data is used**
 - Used Value-Added data to assign teachers who worked best with the district's highest performing students
 - To adapt curriculum and instruction to individual student needs.
- **Result**
 - Improved the growth rate of their high performers

Denver

- Type of Model
 - Value-Added
- How is the data used
 - Teacher evaluation
- Results
 - Effective teachers are rewarded with extra pay.
 - Ineffective teachers are provided additional support

New York City

- Type of model
 - Incorporates simple growth model
 - Value-Added
- How the data is used
 - School accountability
 - Teacher evaluation
- Results
 - Initial outcry by some



Questions you should be asking

- What is the purpose for using growth data and who will be affected?
- What additional resources will be needed to implement and maintain a growth model?
- How will teachers, administrators, and other stakeholders be trained?
- How will the information from the growth models be disseminated schools and the community at-large?



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- The Reading Achievement of Non-native Language Speaking Students: How the U.S. compares internationally



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