



**Growth Models**  
For Principal, Teacher, and Program Evaluation

What all superintendents need to know.

John Gatta, Ph.D.  
President



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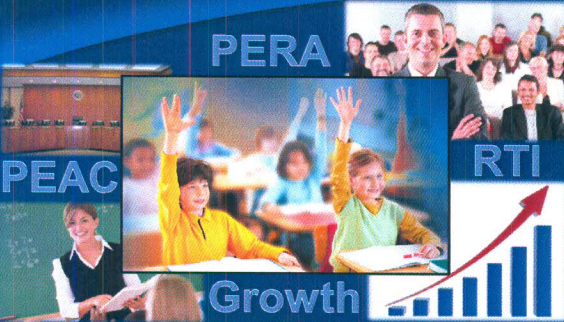
The Challenge

PERA

PEAC

RTI

Growth



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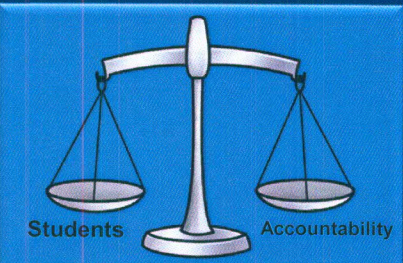
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Balancing Equity



Students

Accountability



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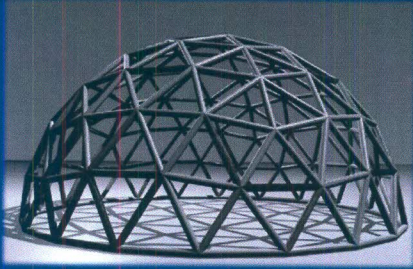
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### The Importance of Structure



Geodesic Dome



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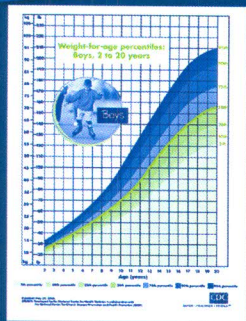
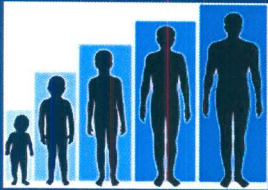
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### Growth: An Example from Pediatrics



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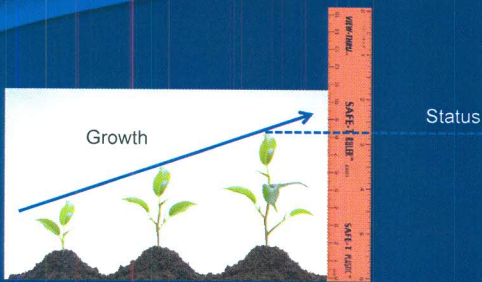
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### Growth versus Status



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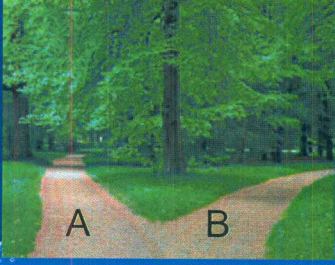
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### Asking the Right Question

How do we know if a student grew more in School A than they would have in School B?



A

B



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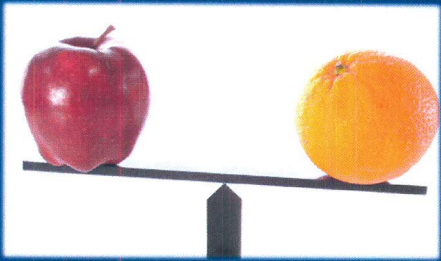
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### Making Appropriate Comparisons



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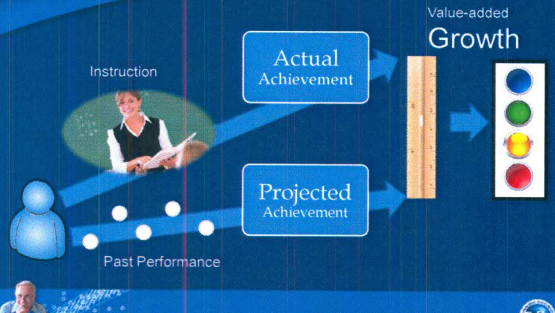
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### The Logic of Growth Models




Instruction

Actual Achievement

Projected Achievement

Past Performance

Value-added Growth



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## Important Issues



- Pretest – Posttest Gain Scores
- Growth Models versus Value-added Models
- Student and Teacher Equity (Demographics)
- Growth Thresholds



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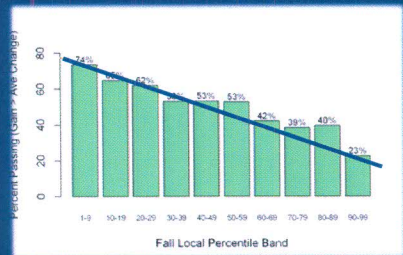
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## Pretest-Posttest Gain Scores

Pretest-Posttest Gain Scores are Unreliable and Biased



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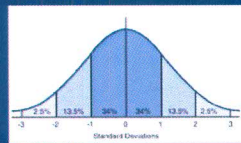
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## Value-added Models

Value-added models often put schools and teachers in competition.



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## Growth Models

Growth models compare performance against fixed growth standards.



Time	Category
0.00-5.00	Excellent
5.01-8.00	Proficient
8.01-12.00	Needs Improvement
> 12.00	Unsatisfactory



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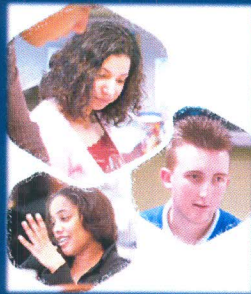
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## Demographics

Inclusion of student-level demographics sets differential standards for students.



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

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## Growth Thresholds

Value-added  
Growth



Growth  
Thresholds

-  Higher Than Expected
-  Expected Growth
-  Lower Than Expected
-  Unsatisfactory Growth



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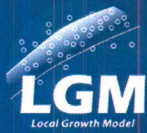
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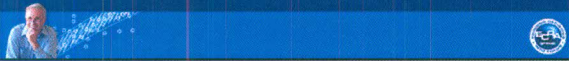
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### Local Growth Models (LGMs)



- Local
- Simple
- Reusable
- Student-centered
- Equitable



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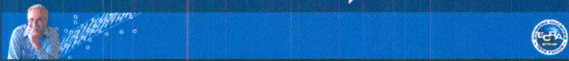
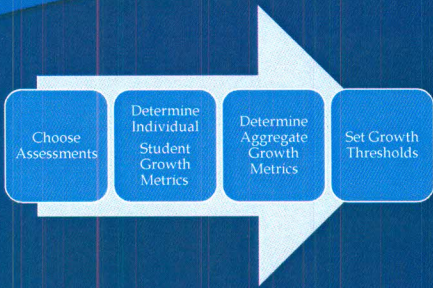
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### Building a Growth Model



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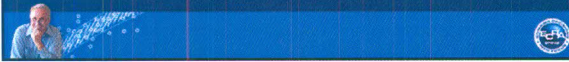
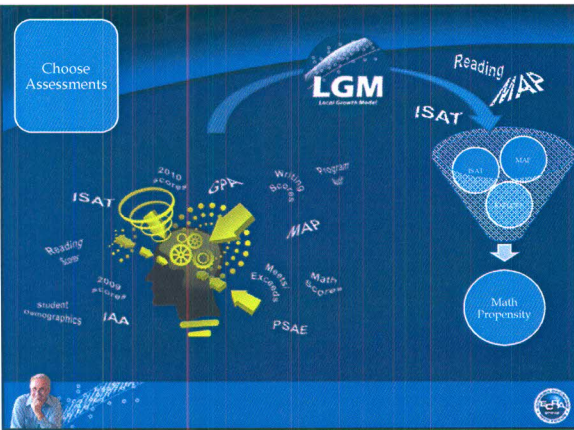
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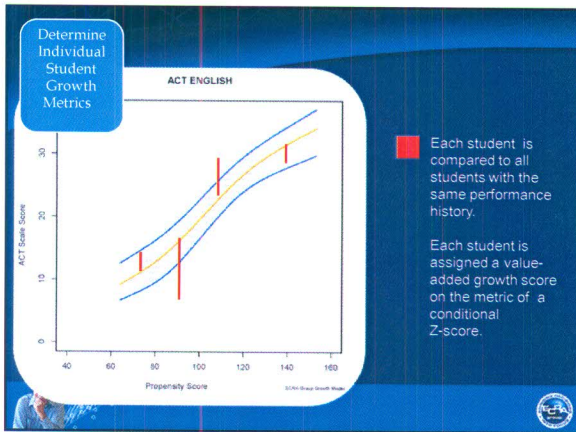
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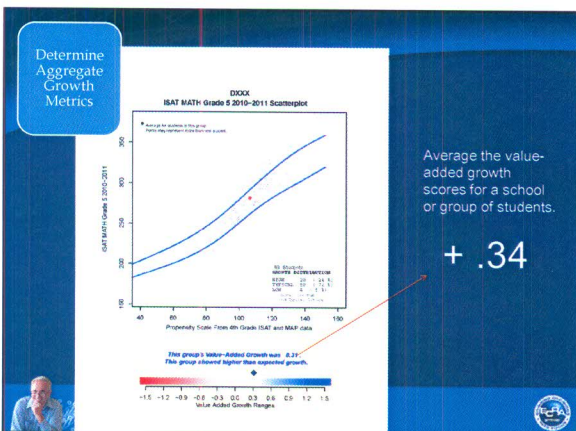
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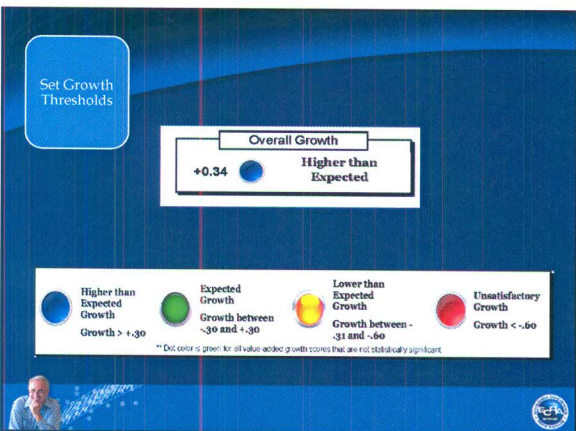
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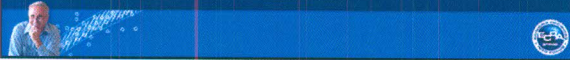
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## Reusable Applications

- Individual student growth monitoring
- Program evaluation
- Faculty and administrator development and appraisal
- Governance and return on investment




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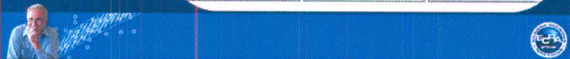
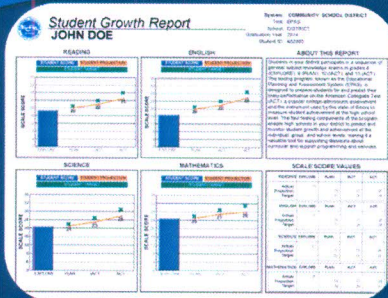
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## Individual Student Growth Monitoring




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## Principal, Teacher, and Program Evaluation

Overall Growth  
**+0.34** Higher than Expected

Student Growth by Grade						
Grade	Test	Number of Students	% Low Growth	% Typical Growth	% High Growth	Value-Added Growth
3	ISAT	107	14%	61%	35%	+0.58
3	MAPS	107	11%	62%	36%	+0.54
4	ISAT	91	16%	64%	19%	-0.03
4	MAPS	91	9%	57%	34%	+0.57
5	ISAT	83	5%	71%	24%	+0.31
5	MAPS	83	17%	69%	18%	+0.02
ALL		282	13%	66%	26%	+0.34
TYPICAL			16%	68%	16%	.00

Higher than Expected Growth > +.30  
Expected Growth Growth between -.30 and +.30  
Lower than Expected Growth Growth between -.31 and -.60  
Unsatisfactory Growth < -.60




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## Governance and Return on Investment

Example

Program	# Students Served	Financial Allocation	Achievement Return (value added ACT points)
Reading Support	112	\$250,000	0.8
21 <sup>st</sup> Century Learning	248	\$780,000	0.1
Summer Academy	58	\$112,000	1.5
...			




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## Governance and Return on Investment

Aggregate Report Card Projections Grade 6 Reading  
Example: % Meets/Exceeds

Year	Reading
2014*	88%
2013*	84%
2012*	86%
2011	89%
2010	87%
2009	85%

\* Indicates projected not actual performance




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