

WELCOME

Lifting Student Achievement - Scaled Score Growth

[Click here to view the
interactive presentation online](#)

Tim W Hand
Chief of Staff
Las Cruces Public Schools



Growth Mindset



Mindset is a simple idea discovered by world-renowned Stanford University psychologist Carol Dweck in decades of research on achievement and success—a simple idea that makes all the difference.

In a fixed mindset, people believe their basic qualities, like their intelligence or talent, are simply fixed traits. They spend their time documenting their intelligence or talent instead of developing them. They also believe that talent alone creates success—without effort. They're wrong.

In a growth mindset, people believe that their most basic abilities can be developed through dedication and hard work—brains and talent are just the starting point. This view creates a love of learning and a resilience that is essential for great accomplishment. Virtually all great people have had these qualities.



Research on the Growth Mindset

Neuroplasticity - The brain works like a muscle.
 Building Neural Pathways: Repeat, reorganization

Learning and practice will be readily to a certain level of accomplishment but "practice" is essential and the product of deliberate practice. The goal is to better understand how to produce better practice.

Building Neural Pathways - Effort is the form of a reward, achievement after failure

Human Motivation and Achievement - Human beings are motivated by: Competence, feedback, relatedness, Autonomy, mastery, purpose



Assessment in a Growth Mindset

Assessment, in its intended form, is designed to inform instruction by demonstrating learning (competence) and therein, more importantly, what they yet to be learned (feedback)



Research on the Growth Mindset

Neuroplasticity - The brain works like a muscle

Existing Neural Pathways- Recall, memorization

Building Neural Pathways -

Effort in the face of difficulty, adjustment after failure

Neuroplasticity, also known as brain plasticity, is an umbrella term that encompasses both synaptic plasticity and non-synaptic plasticity—it refers to changes in neural pathways and synapses due to changes in behavior, environment, neural processes, thinking, emotions

Human Motivation and Achievement

Human beings are motivated by:

Competence, feedback, relatedness

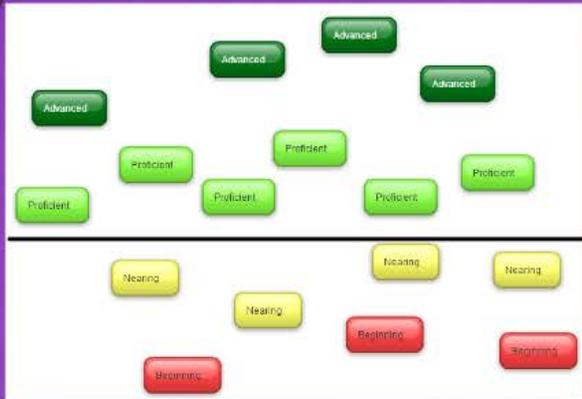
Autonomy, mastery, purpose



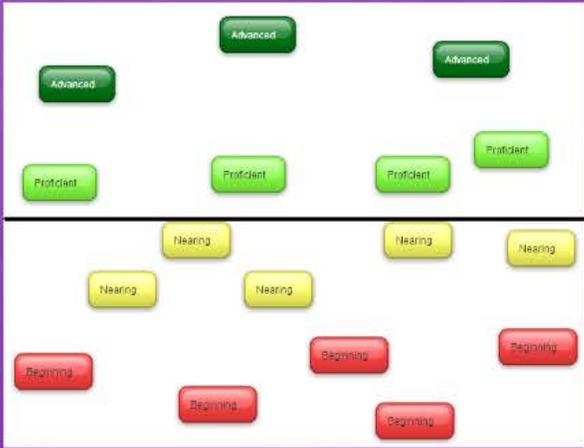
Assessment in a Growth Mindset

Assessment, in its intended form, is designed to inform instruction by demonstrating learning (competence) and therein, more importantly, what has yet to be learned (feedback)

No Child Left Behind



Fixed Mindset?



27
of 30 slides

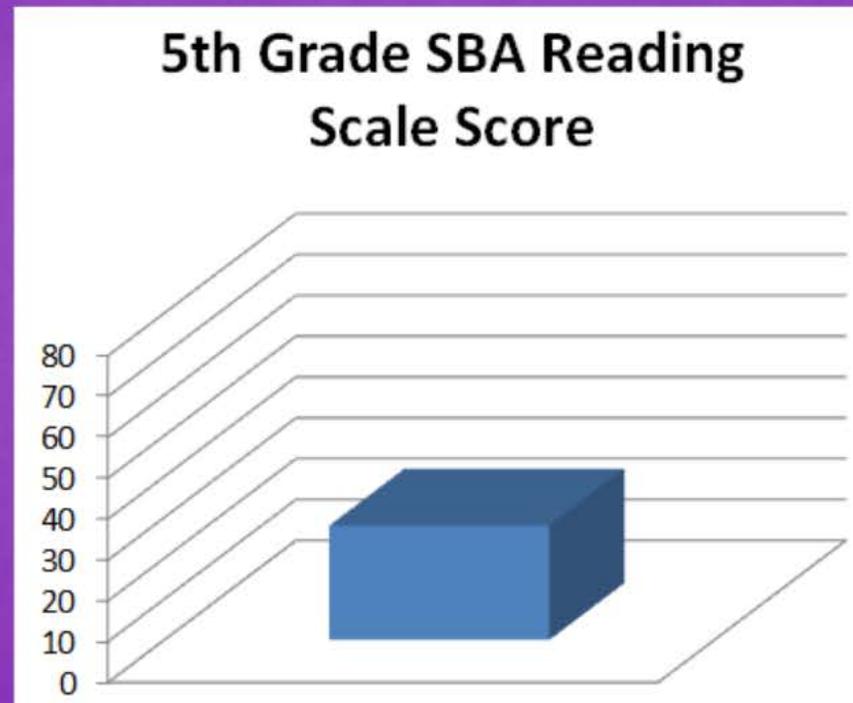


27

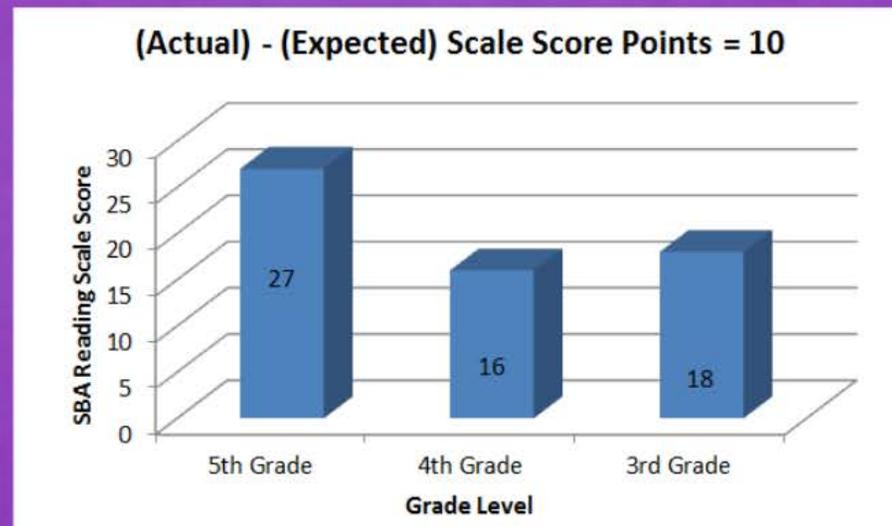
Is this a good score ?



Context



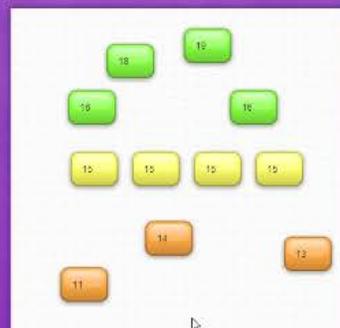
Unique Information About One Student



Academic Peer Group



Scaled Score Growth





Scaled

Score Growth Model

lcps.k12.nm.us/growth

SSG Philosophy

Identify a student's growth relative to their peers

Focus on scaled score growth as opposed to % Proficient



Growth

Why

Growth models provide a sound method to measure student scaled score growth by effectively using each student's individual prior performance to form expected achievement that is compared to actual achievement

The Mathematics

Value Added Score =
Actual Scale Score - Expected Scale
Score

Expected Scale Score =
AVG (Previous Two
Years Scale Scores)

Growth and Equity

Proficiency is related to many outside of school factors (Student Background)

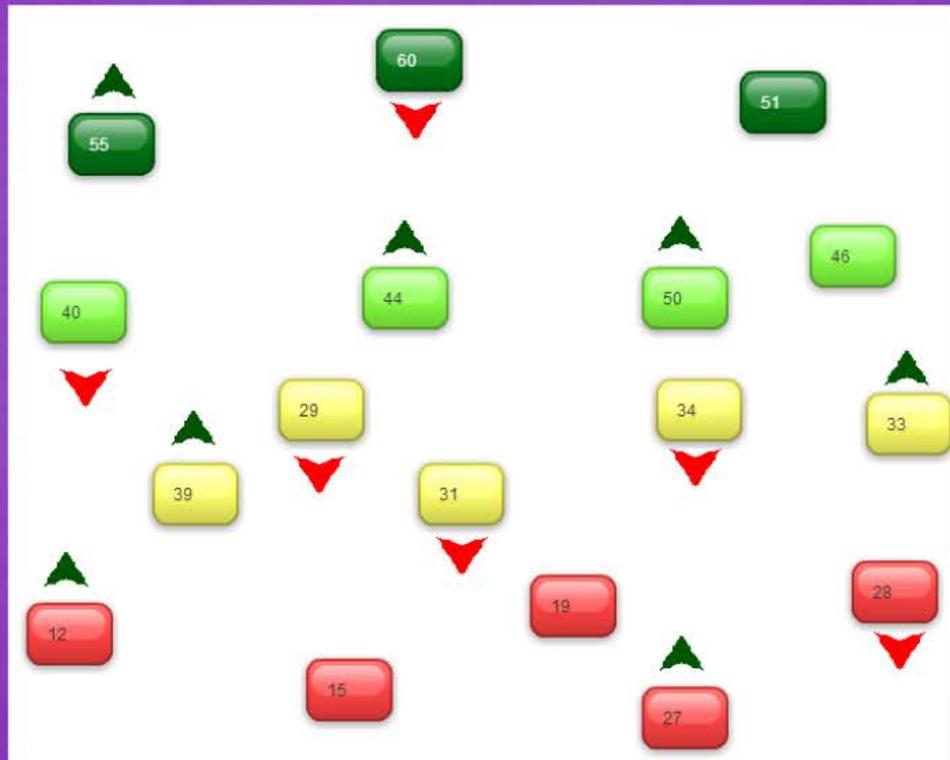
Using only prior performance accounts for differences in student background

Current year growth is unrelated to past performance

Classroom Growth



Classroom Growth



Growth and Equity

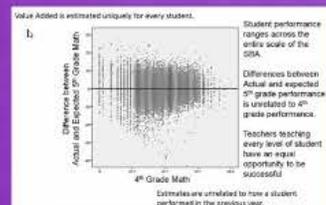
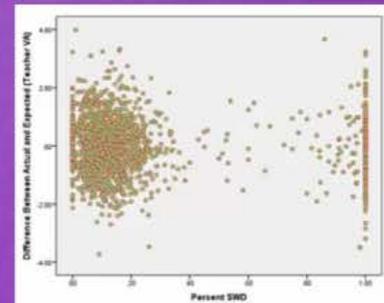
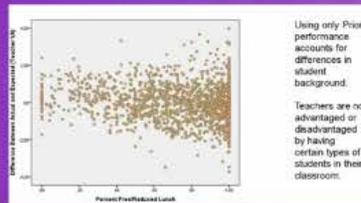
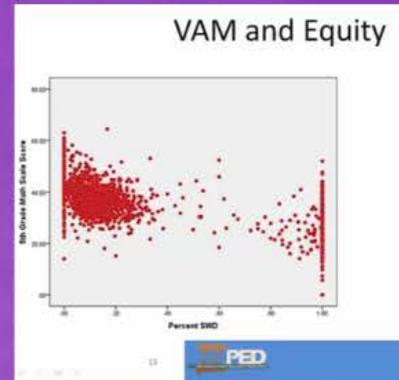
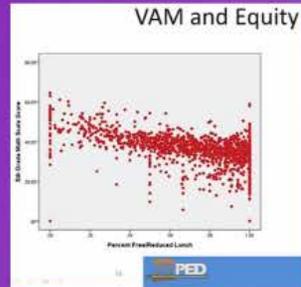
Proficiency is related to many outside of school factors (Student Background)

Using only prior performance accounts for differences in student background

Current year growth is unrelated to past performance



Growth and Equity



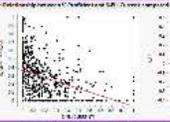


Case 1

Do EACH Value Added
at Level confirm the
at the State Level?

Teachers calculated
improvement from State
District calculations,
as the trustworthiness of
Model.

Value Added Models



Confirmation Metrics



Dr. Suchint Sarangarm, Hobbs
Tim Hand, LCPS
Matt Goodlaw, PED

Purpose for Collaboration

Exhorted by Secretary Skandera, Superintendent Rounds and Superintendent Parks to determine if we can develop a confirmation metric around the Value Added Model for Educator Effectiveness

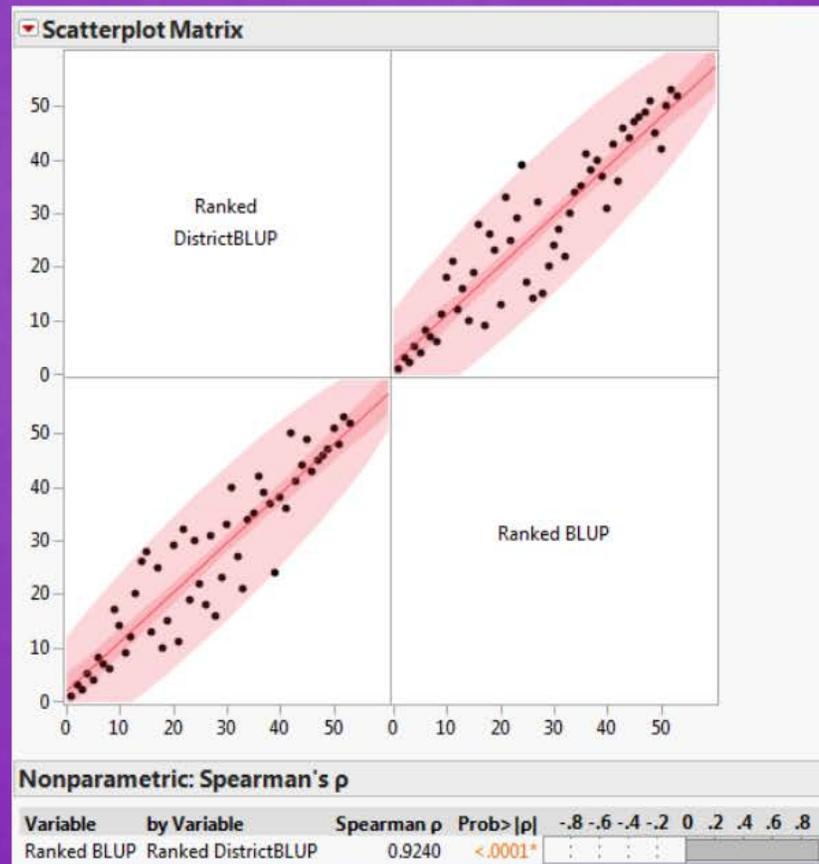
To outline a form and function for a State Wide Data Analytical Working Group

Questions for Purpose 1

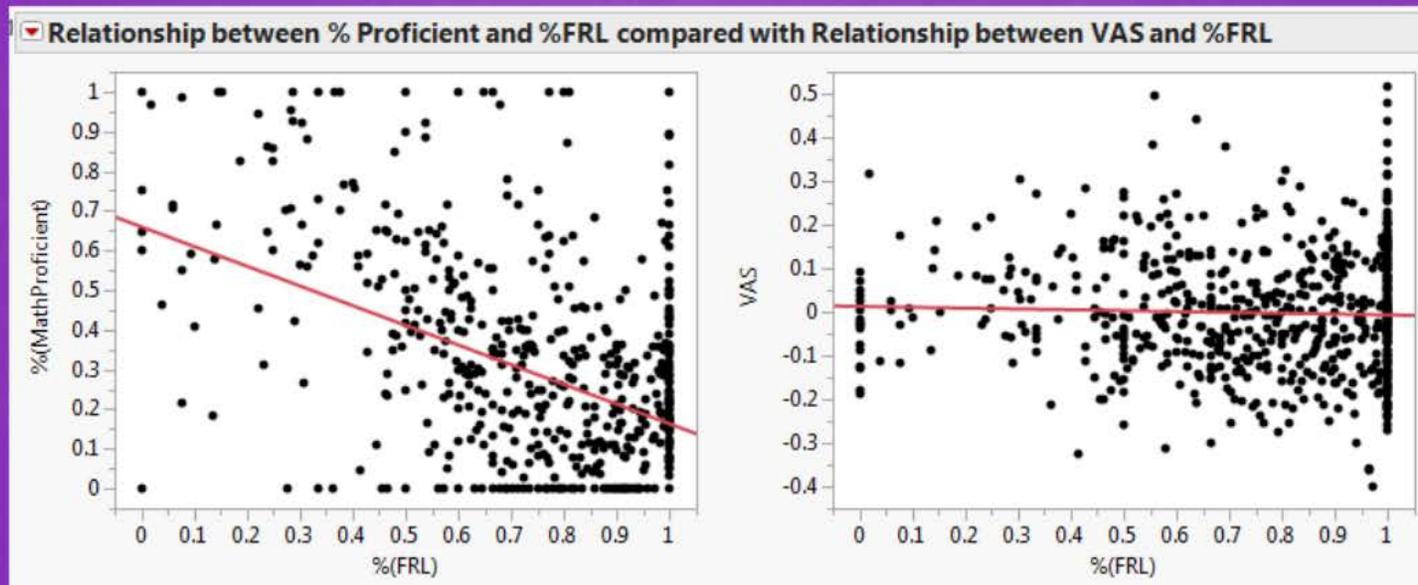
To what extent does the NMTEACH Value Added Model calculated at the District Level confirm the NMTEACH VAM calculated at the State Level?

If the rank order in which the teachers calculated effect on improved student achievement from State calculations is preserved in the District calculations, then this transparency confirms the trustworthiness of the NMTEACH Value Added Model.

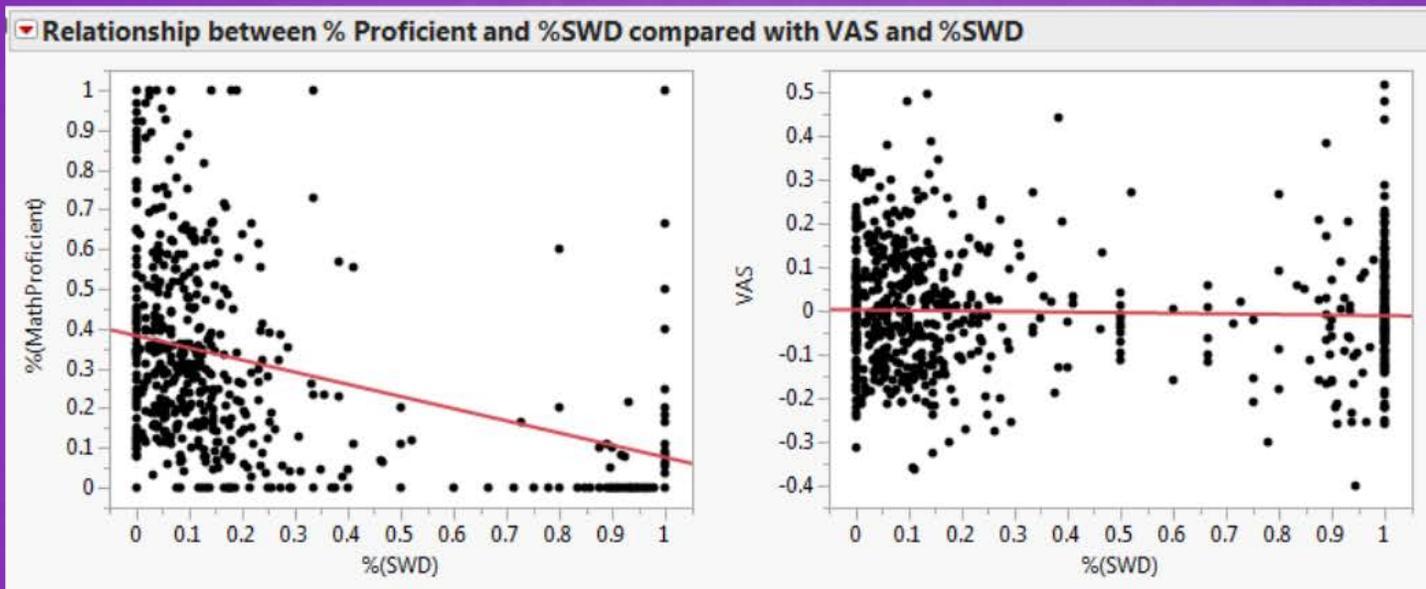
Rank Order



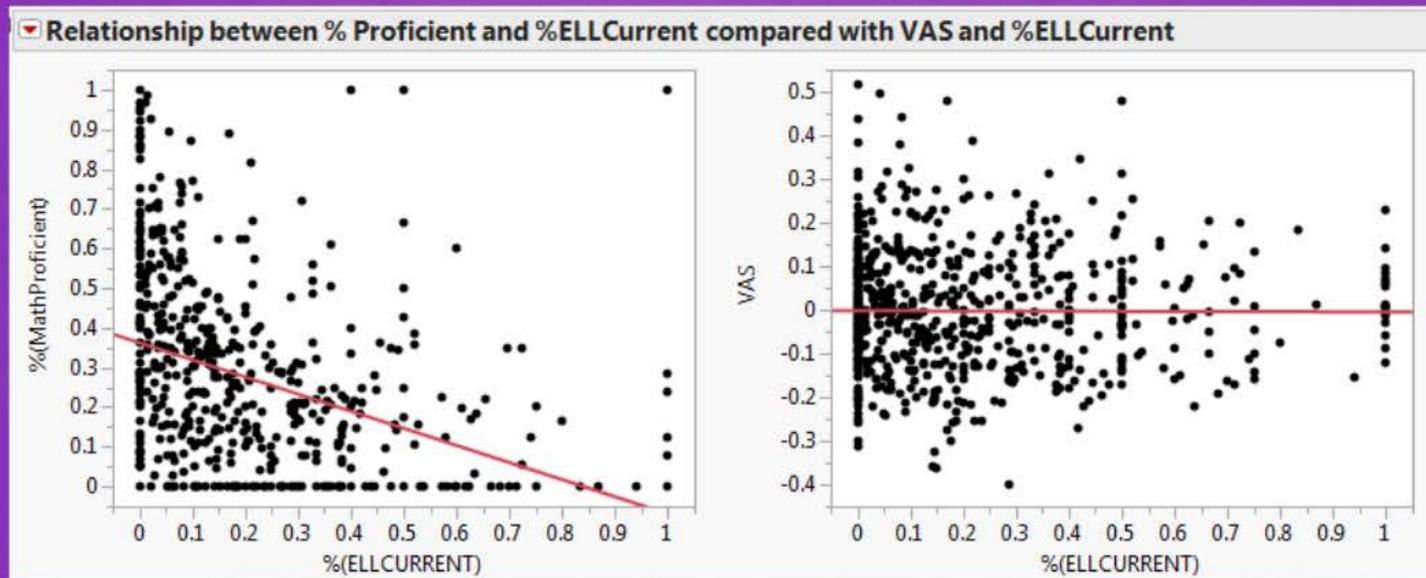
Value Added Models and Fairness



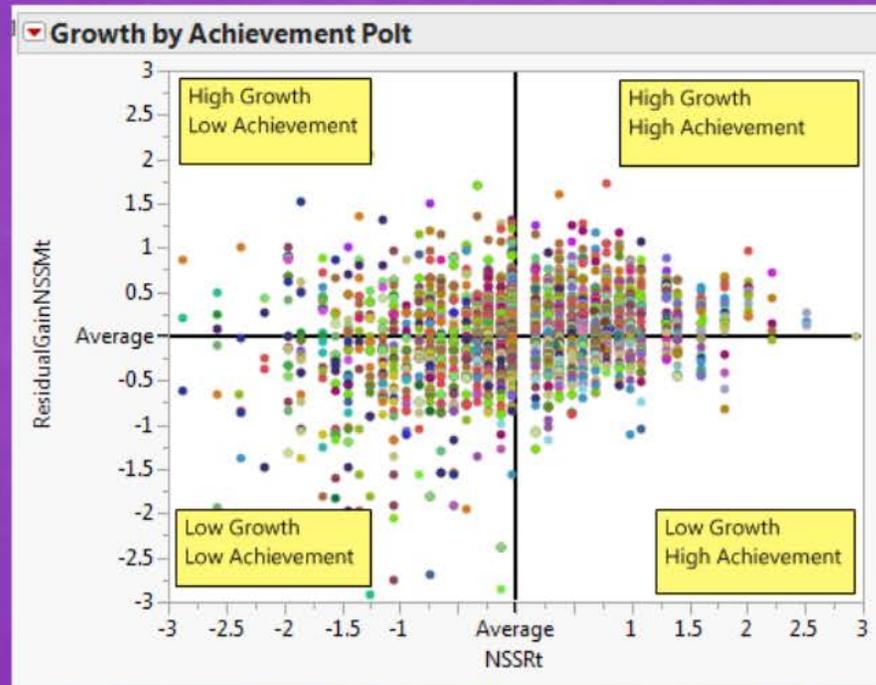
Value Added Models and Fairness



Value Added Models and Fairness

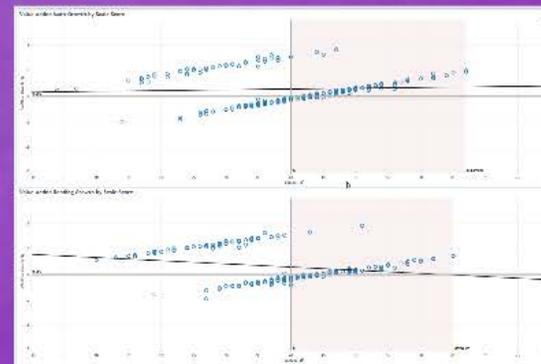
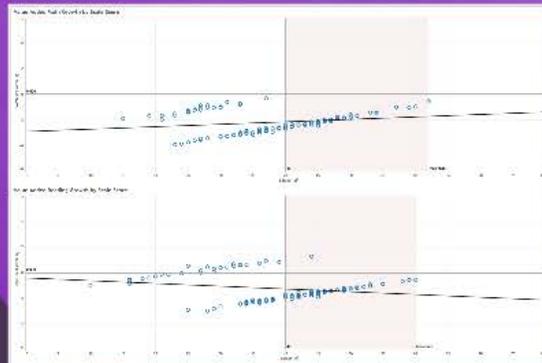


Growth by Achievement: Putting Data to Work



LCPS Resources

Gender	Eth/Race	PARSUS	LEP	Primary School Ed	Test Grade Lvl	Test Version	2012-13			2013-14			Growth		
							Proficiency Level	Scale Score	Test Grade Lvl	Test Version	Proficiency Level	Scale Score	Proficiency Movement	Scale Growth (+)	% Growth
F	Caucasian	Not Provided	Unknown	*	06	NA	4-Advanced	57	07	NA	4-Advanced	52	No Change	0	-1%
F	Caucasian	Not Provided	Unknown	*	06	NA	3-Developing Proficiency	38	07	NA	3-Developing	48	Improved	8	+17%
M	Caucasian	Not Provided	Unknown	Q1	06	NA	3-Proficient	47	07	NA	3-Advanced	36	Improved	9	+2%
M	Hispanic	Free	Unknown	Q1	06	NA	3-Proficient	45	07	NA	3-Proficient	43	No Change	-2	-4%
F	Caucasian	Not Provided	Unknown	*	06	NA	3-Proficient	43	07	NA	3-Proficient	53	No Change	10	+2%
M	Caucasian	Not Provided	Unknown	Q1	06	NA	3-Proficient	47	07	NA	3-Proficient	48	No Change	2	+%
M	Hispanic	Not Provided	Unknown	*	06	NA	3-Proficient	47	07	NA	3-Proficient	42	No Change	-5	-1%
F	Hispanic	Not Provided	Unknown	*	06	NA	3-Proficient	39	07	NA	3-Proficient	48	No Change	9	+%
F	Hispanic	Not Provided	Unknown	Q1	06	NA	3-Proficient	51	07	NA	3-Proficient	52	No Change	1	+%
M	Hispanic	Reduced	Unknown	*	06	NA	4-Advanced	57	07	NA	3-Proficient	39	Declined	-8	-14%
M	Hispanic	Not Provided	Unknown	*	06	NA	3-Proficient	46	07	NA	3-Proficient	47	No Change	1	+%
F	Hispanic	Free	Unknown	Q1	06	NA	3-Proficient	50	07	NA	3-Proficient	41	No Change	-9	-18%
F	Asian	Not Provided	Unknown	*	06	NA	3-Proficient	50	07	NA	3-Proficient	50	No Change	0	0%
M	Caucasian	Not Provided	Unknown	Q1	06	NA	3-Proficient	50	07	NA	3-Proficient	52	No Change	2	+%
M	Hispanic	Not Provided	Unknown	Q1	06	NA	3-Proficient	44	07	NA	3-Proficient	52	No Change	8	+1%
M	Caucasian	Not Provided	Unknown	Q1	06	NA	-	-	-	-	-	-	No Change	-	-



Next Steps

Development of Scope and Sequence for Data Analytics Working Group

Potential Topics: Value Added Communication and Analytical Tools to make use of data (for School Grading and EES) ;

Introduction to Data Analysis and Software Packages;

Development of consultation services;

Measures of Effective Teaching Project

First large scale study to demonstrate, using random assignment, that it is possible to identify great teaching

* 3,000 teachers

Educator Effectiveness measured with student surveys, classroom observations, and student achievement gains

Randomly assigned to different classrooms of students in the second year

The teachers whose students performed better on average during the first year also had students who performed better on average following random assignment

Moreover, the magnitude of achievement gains they generated aligned with predictions



Ineffective Value Added Models for Measuring Growth

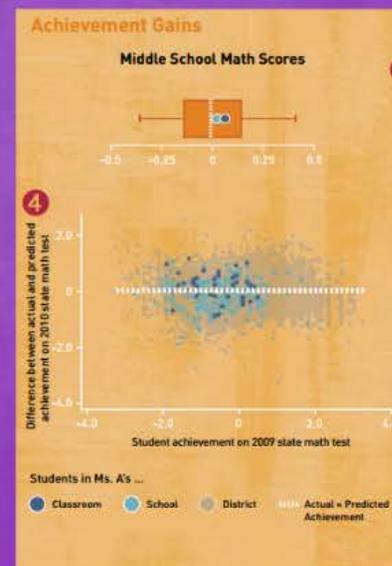
Using student background for predicting achievement accounts for much less variation than prior performance and incorrectly assumes that all human beings with the same background and labels (swd, ell, white) have the same educational capacity and ability

Using only one year's worth of teacher or student data leaves too much room for variation and evaluation categories become statistically less meaningful.

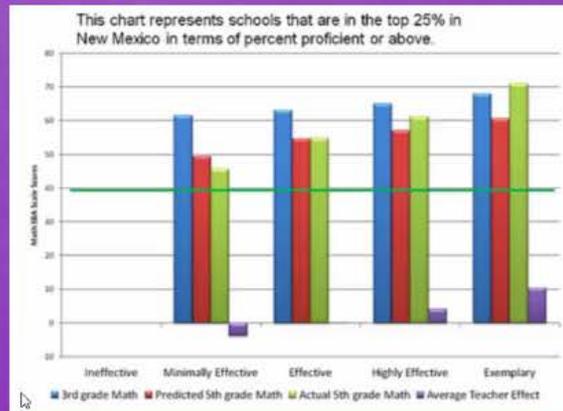
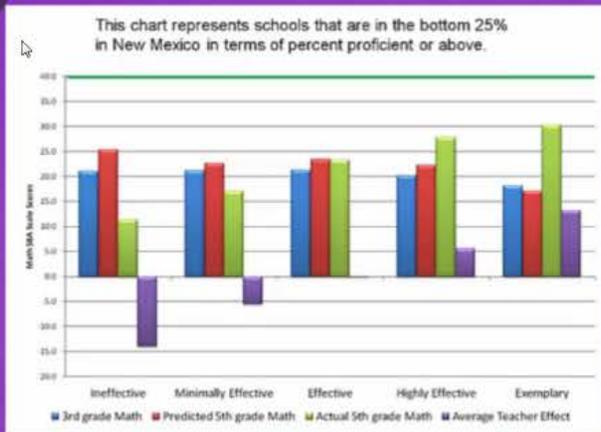
VAM scores using three years worth of student data and three years worth of educator data strongly correlate with a 4th year VAM score (.94 correlation coefficient).

Why VAM

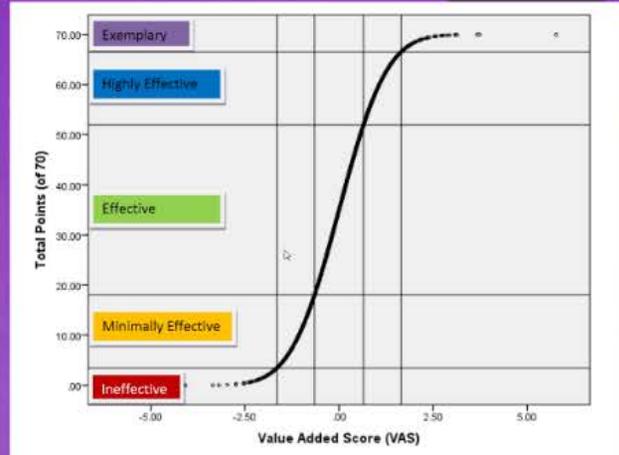
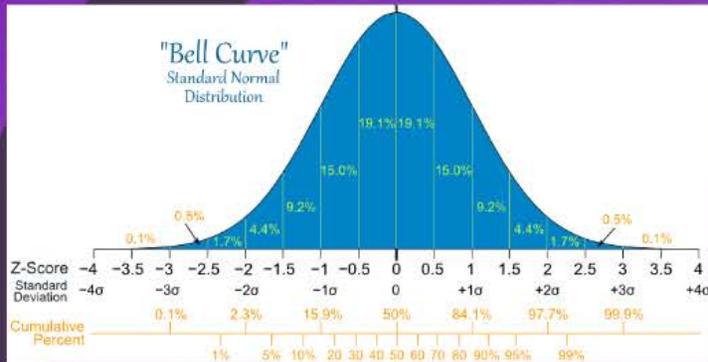
"If we want students to learn more, teachers must become students of their own teaching. They need to see their own teaching in a new light. Public school systems across the country have been re-thinking how they describe instructional excellence and let teachers know when they've achieved it," said Tom Kane, Professor of Education and Economics at Harvard's Graduate School of Education and leader of the MET project. "This is not about accountability. It's about providing the feedback every professional needs to strive towards excellence."



From Scale Score Growth to Educator Effectiveness



Educator Effectiveness Distribution



Grade Level	2011 Math VAM	2011 Reading VAM	2012 Math VAM	2012 Reading VAM	2013 Math VAM	2013 Reading VAM	Total VAM	Total Points	Applicable Points
5	2.2	2.1	1.5	1.5	1.6	1.0	2.2	69.0	70
5			1.2	1.1	-2.2	-2.2	-1.0	5.5	35
5						0.3	0.3	21.9	35
5			0.7	1.8	-0.3	0.8	0.9	28.5	35
							0.4	22.9	35
							0.1	19.2	35
							0.4	44.8	70
							1.0	58.2	70
							0.5	47.2	70
							-0.2	30.0	70
							0.3	42.2	70
5	-0.1	-1.5			-1.0	-1.3	-1.1	4.9	35
5						-1.8	-1.8	1.4	35

Score meaning:

- Scores around 0 indicate that teachers are approximately meeting expectations.
- The further scores move above 0, the more teachers are exceeding expectations.
- The further scores move below 0, the more teachers are not meeting expectations.

LCPS High and Low VAM Scores

Grade Level	2011 Math VAM	2011 Reading VAM	2012 Math VAM	2012 Reading VAM	2013 Math VAM	2013 Reading VAM	Total VAM	Total Points	Possible Points
6	5.54	2.52					4.8	35	35
5			-0.56	0.12	4.21	3.77	4.06	35	35
5	1.88	0.8	2.92	3.82	1.87	3.4	2.94	69.89	70
5	2.07	1.24	3.09	2.95	1.92	1.95	2.72	69.77	70
5			1.34	1.03	1.62	2.49	2.2	34.52	35
5			2.74	2.44	-0.73	0.81	2.18	34.48	35
5	1.7	1.08	2.09	3.29	-0.08	2.29	2.15	68.91	70

Grade Level	2011 Math VAM	2011 Reading VAM	2012 Math VAM	2012 Reading VAM	2013 Math VAM	2013 Reading VAM	Total VAM	Total Points	Possible Points
6			-1.38	-5.21	-1.32	-5.76	-3.79	0	35
6			-1.71	-4.95			-3.66	0	35
6		-2.64					-2.87	0.07	35
6		-2.38					-2.57	0.18	35
6	-1.92						-2.04	0.72	35
5			-1.47	-2.37	0.18	-0.22	-1.95	0.9	35
5					-1.5	-1.75	-1.91	0.98	35
5	-0.82	-1.51	-1.61	-1.35	-0.97	-2.42	-1.7	3.14	70
6		-1.58				0.16	-1.63	1.79	35
6		-1.55					-1.62	1.85	35
5			-1.22	-1.52			-1.61	1.9	35

