Measuring Student Growth through Value Tables

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Goals

- Don’t just measure growth, but promote it
  - Use Performance Levels rather than scaled scores
  - Make the computations simpler
  - Establish goals that are driven, in part, by policy goals (“What can and needs to be done?” rather than “What is being done?”)

Basic Idea of a Value Table

- 5 Levels
  - Unsatisfactory = 0
  - Approaching Basic = 50
  - Basic = 100
  - Mastery = 150
  - Advanced = 200
- NCLB “proficient” = Basic

Outline for a Value Table

Year 1 Level	Year 2 Level				
	Unsat	AB	Basic	Mast	Adv
Unsat					
AB					
Basic					
Mast					
Adv					

Building a Value Table

Year 1 Level	Year 2 Level				
	Unsat	AB	Basic	Mast	Adv
Unsat					
AB					
Basic			100		
Mast					
Adv					

Building a Value Table (cont'd)

Year 1 Level	Year 2 Level				
	Unsat	AB	Basic	Mast	Adv
Unsat					
AB					
Basic	0	50	100	150	200
Mast					
Adv					

A Neutral Value Table?

Year 1 Level	Year 2 Level				
	Unsat	AB	Basic	Mast	Adv
Unsat	100				
AB		100			
Basic	0	50	100	150	200
Mast				100	
Adv					100

A Neutral Value Table?

Year 1 Level	Year 2 Level				
	Unsat	AB	Basic	Mast	Adv
Unsat	100	150	200	250	300
AB	50	100	150	200	250
Basic	0	50	100	150	200
Mast	-50	0	50	100	150
Adv	-100	-50	0	50	100

Variation of No Real Additional Gain

- Results should be neutral if no real gain and all growth is valued equally
- Regression due to:
  - Measurement error
  - Normal variation in growth

Distribution of Students

Year 1 Level	Year 2 Level				
	Unsat	AB	Basic	Mast	Adv
Unsat	64	27	8	0	0
AB	24	43	32	1	0
Basic	4	18	64	13	1
Mast	0	2	39	51	8
Adv	0	0	10	53	37

Average Scores for Subgroups

Year 1 Level	Year 2 Level					Ave.
	Unsat	AB	Basic	Mast	Adv	
Unsat	64	27	8	0	0	120.5
AB	24	43	32	1	0	105.0
Basic	4	18	64	13	1	94.5
Mast	0	2	39	51	8	82.5
Adv	0	0	10	53	37	63.5

Revised Value Table

Year 1 Level	Year 2 Level				
	Unsat	AB	Basic	Mast	Adv
Unsat	0	150	200	250	300
AB	0	100	150	200	250
Basic	0	50	100	150	200
Mast	0	0	50	100	150
Adv	0	0	0	50	100

Average Scores for Subgroups for Revised Value Table

Year 1 Level	Year 2 Level					Ave.
	Unsat	AB	Basic	Mast	Adv	
Unsat	64	27	8	0	0	56.6
AB	24	43	32	1	0	93.0
Basic	4	18	64	13	1	94.5
Mast	0	2	39	51	8	82.5
Adv	0	0	10	53	37	63.5

Computing School Average

Student	Last Year	Goal for This Year	Points
April	Basic	Mastery	150
Luis	Advanced	Mastery	50
Bill	Unsat.	Unsat.	0
Juan	Unsat.	App. Basic	150
Charisse	App. Basic	App. Basic	100
Average			450/5 = 90.0

An NCLB Value Table

Year 1 Level	Year 2 Level			
	Below Basic	Basic	Proficient	Advanced
Below Basic	0	0	100	100
Basic	0	0	100	100
Proficient	0	0	100	100
Advanced	0	0	100	100

Application to NCLB

- Current NCLB: Is the student Proficient right now?
- Revised NCLB: Is the student on track to becoming Proficient before graduation?

An NCLB Value Table for Safe Harbor (Req'd Score = 10)

Year 1 Level	Year 2 Level			
	Not Proficient	Below Proficient	Proficient	Advanced
Not Proficient	0	0	100	100
Below Proficient	0	0	100	100
Proficient	-90	-90	10	10
Advanced	-90	-90	10	10

Example 1

Year 1 Level	Year 2 Level	
	Not or Below Proficient	Proficient or Advanced
Not or Below Proficient	45	5
Proficient or Advanced	0	50

- Score = (45*0 + 5*100 + 0*-90 +50*10)/100 = 10

Example 2

Year 1 Level	Year 2 Level	
	Not or Below Proficient	Proficient or Advanced
Not or Below Proficient	40	10
Proficient or Advanced	5	45

- Score = (40*0 + 10*100 + 5*-90 +45*10)/100 = 10

Creating Value Tables

- Who decides which outcomes are valued more than others?
- How do we capture those judgments?
- How good is “good enough”?

Experience with One State

- Advisory committee members make recommendations on values
- Department takes recommendations to Board for adoption

Steps Like Standard Setting

- Training
- Divide into tables
- Multiple rounds, with discussion between rounds

Using Panels to Establish Values

Year 1 Level	Year 2 Level				
	Not Proficient Minus	Not Proficient Plus	Below Proficient Minus	Below Proficient Plus	Proficient or Advanced
Not Proficient Minus	1	2	3	4	5
Not Proficient Plus	6	7	8	9	10
Below Proficient Minus	11	12	13	14	15
Below Proficient Plus	16	17	18	19	20
Proficient or Advanced	21	22	23	24	25

Using Panels to Establish Values

Year 1 Level	Year 2 Level				
	Not Proficient Minus	Not Proficient Plus	Below Proficient Minus	Below Proficient Plus	Proficient or Advanced
Not Proficient Minus	11	17	20.5	23.25	25
Not Proficient Plus	8	12	17	20.75	23.5
Below Proficient Minus	4	8	13.5	17.75	21.5
Below Proficient Plus	2	5.25	9	13.75	18.75
Proficient or Advanced	1	3	5.75	9	14.75

Initial Value Table

Year 1 Level	Year 2 Level				
	Not Proficient Minus	Not Proficient Plus	Below Proficient Minus	Below Proficient Plus	Proficient or Advanced
Not Proficient Minus	0	170	200	230	250
Not Proficient Plus	0	120	170	210	240
Below Proficient Minus	0	80	140	180	220
Below Proficient Plus	0	50	90	140	190
Proficient or Advanced	0	30	60	90	150

Impact of Initial Value Table

Year 1 Level	Average Score in Year 2		
	Reading	Writing	Math
Not Proficient Minus	102	134	86
Not Proficient Plus	138	150	133
Below Proficient Minus	146	156	142
Below Proficient Plus	143	149	132
Proficient or Advanced	141	143	137
Mean	139	144	131
Correlation	.18	.06	.27

Recommended Value Table

Year 1 Level	Year 2 Level				
	Not Proficient Minus	Not Proficient Plus	Below Proficient Minus	Below Proficient Plus	Proficient or Advanced
Not Proficient Minus	0	140	170	200	220
Not Proficient Plus	0	80	130	170	200
Below Proficient Minus	0	40	100	140	180
Below Proficient Plus	0	10	50	100	150
Proficient or Advanced	0	0	20	50	110

Impact of Recommended Value Table

Year 1 Level	Average Score in Year 2		
	Reading	Writing	Math
Not Proficient Minus	84	97	69
Not Proficient Plus	110	118	111
Below Proficient Minus	116	120	109
Below Proficient Plus	100	112	97
Proficient or Advanced	101	103	98
Mean	102	106	96
Correlation	.10	.03	.18

Questions

- How much do changes in Value Tables affect ordering of schools?
- What is relationship between Value Table rankings and those of more complex models?