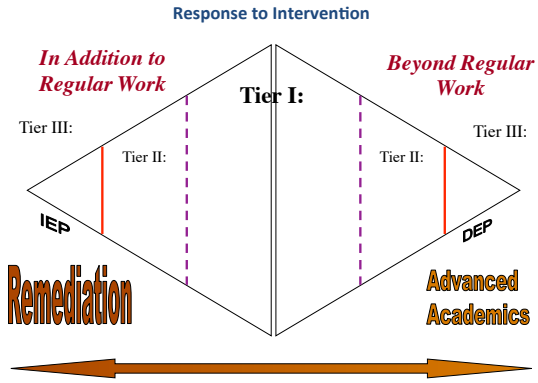
Measuring Growth in Advanced Learners in a Post-Proficiency Era

Two Problems with Growth

1. Getting growth: Curriculum is often not focused at gifted students' Zone of Proximal Development
   - If students aren't taught new content, how will they grow?
2. Showing growth: Assessments used do not have sufficiently high test ceilings to measure gifted students' performance
   - If the test can't show us where the child has achieved, how can we measure growth?

Getting Growth: Curricular Issue

- Growth will never happen if a student is in a classroom that is below his or her ZPD
- Easy solution: curriculum should be needs-based. What a student is taught should be a factor of what he or she has already mastered.
  – The age-based classroom is a significant barrier



Getting Growth

- If you don't have curriculum / services / interventions in place that might reasonably result in student growth, then don't bother trying to measure growth.
- Having instruction that was based on prior learning and current level of mastery is a pre-requisite to growth.

Showing Growth: Assessment Issue

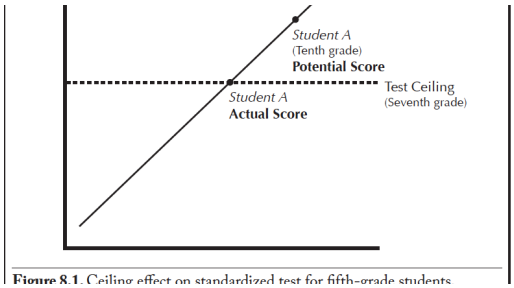


Figure 8.1. Ceiling effect on standardized test for fifth-grade students

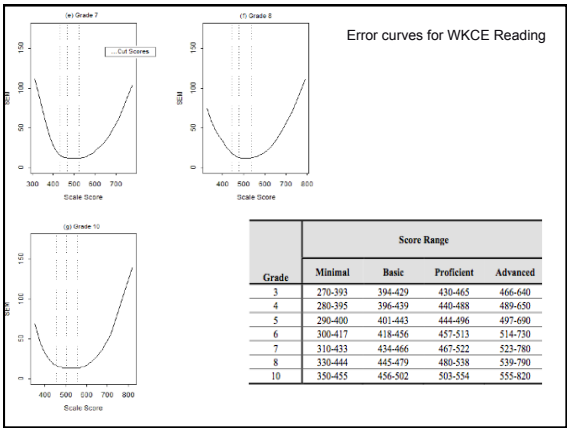
Showing Growth: Two Issues

1. Ceiling Effects (quant differences): The content is right but the test doesn't go high enough

2. Content Coverage (qual differences): The tests that do cover the range of the student's learning don't cover the right content – standards mis-aligned

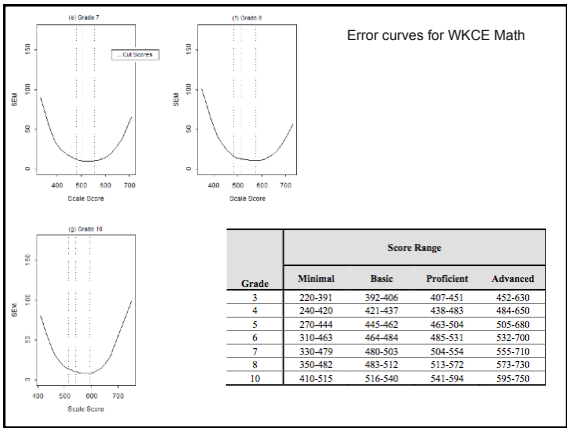
Showing Growth: Assessment Issue

- Growth for gifted kids will always be hard to show with assessments based on grade-level standards.
- Small number of items written for a given range of ability = high error levels at that range.
- Wisconsin Knowledge and Concepts Exam:



Error curves for WKCE Reading

Grade	Score Range			
	Minimal	Basic	Proficient	Advanced
3	270-393	394-429	430-465	466-640
4	280-395	396-439	440-488	489-650
5	290-400	401-443	444-496	497-690
6	300-417	418-456	457-513	514-730
7	310-433	434-466	467-522	523-780
8	330-444	445-479	480-538	539-790
10	350-455	456-502	503-554	555-820



Error curves for WKCE Math

Grade	Score Range			
	Minimal	Basic	Proficient	Advanced
3	220-391	392-406	407-451	452-630
4	240-420	421-437	438-483	484-650
5	270-444	445-462	463-504	505-680
6	310-463	464-484	485-531	532-700
7	330-479	480-503	504-554	555-710
8	350-482	483-512	513-572	573-730
10	410-515	516-540	541-594	595-750

Assessment Issue: Solutions?

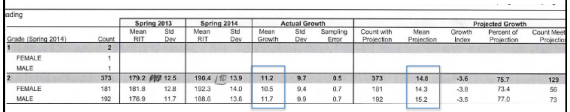
- Computer-adaptive tests:
  - Smarter Balanced Assessment (in theory)
  - Measure of Academic Progress (MAP)
- Out-of-Level / Above-Level testing
  - EXPLORE Test in Talent Searches
  - Summative tests from the next grade level – use in SLOs.
- Individually-administered achievement tests (WJ-III, WIAT, etc.)

NWEA MAP Growth Projections

- Projections are based on:
  - Student's grade
  - Student's prior RIT score
  - Subject area

Represents the best guess "average" growth for a student in that grade in that subject with that prior score.

NWEA MAP Growth Projections



ading		Spring 2013		Spring 2014		Actual Growth			Projected Growth				
Grade (Spring 2014)	Count	Mean RIT	Std Dev	Mean RIT	Std Dev	Mean Growth	Std Dev	Sampling Error	Count with Projection	Mean Projection	Growth Index	Percent of Projection	Count Meet Projectio
1	2												
FEMALE	1												
MALE	1												
2	373	179.2	12.5	190.4	13.9	11.2	9.7	0.5	373	14.8	-3.6	75.7	129
FEMALE	181	181.8	12.8	192.3	14.0	10.5	9.4	0.7	181	14.3	-3.8	73.4	56
MALE	192	176.9	11.7	188.6	13.6	11.7	9.9	0.7	192	15.2	-3.5	77.0	73

Reading Report

NWEA MAP Growth Projections

- Projections are based on:
  - Student's grade
  - Student's prior RIT score
  - Subject area

In other words, a student who "met" his growth targets made about average growth (compared to the peers from above)

- Note this is supposed to be Fall to Spring
- On average about 60% of students meet growth targets – this is how they are designed

WI Report Cards

- Growth on School Report Cards (SRC) vs. MAP
- SRC base growth "goodness" on whether or not a person is on target to reach the next proficiency threshold.
- SRC are also based on Fall to Fall performance
- "Growth" only counts if it's across thresholds*
- WKCE is a terrible test for growth measurement

Why so Different?

- "Growth" only counts if it's across thresholds*
  - In terms of school / district report cards
- Read that last sentence a few times…what does it mean?
- Students who were advanced last fall can earn you NO POINTS
- Students who score "minimal" this fall can only hurt you (from last year)

SRC Technical Guide

Growth on SRC

Starting Level		Growth/Decline Trajectory			
		Min. Perf.	Basic	Proficient	Advanced
Minimal Performance	33 students	10 students	**16 students**	**6 students**	**1 student**
		0 points	**+16 points**	**+12 points**	**+3 points**
Basic	66 students	6 students	46 students	**11 students**	**3 students**
		0 points	0 points	**+11 points**	**+6 points**
Proficient	60 students	*1 student*	*16 students*	34 students	**9 students**
		-1 point	*-16 points*	0 points	**+9 points**
Advanced	13 students	*0 students*	*0 students*	7 students	6 students
		0 points	*0 points*	0 points	0 points
Total Growth Points: +57 points			*Total Decline Points: -17 points*		

What do you notice here?

Assessment Issue: Solutions?

- All tests are limited by the standards on which they are based
- Translation: Don't expect the WKCE or MAP to assess learning in a calculus or British Literature class

Setting Growth Goals

- What is a reasonable growth target for a "gifted" or already advanced student?
- I have absolutely no idea. It depends…

Growth Dependent Factors

- Current level of mastery
- Level of grade-level instruction
- Level of teacher differentiation and challenge
- Opportunity for curriculum delivery that might reasonably result in growth
- Lots of students factors…

What would I do?

- In content areas in which you have MAP scores:
- Start with the MAP growth target and then revise (likely down but could be up) based on the services that will be provided to the student.

Example

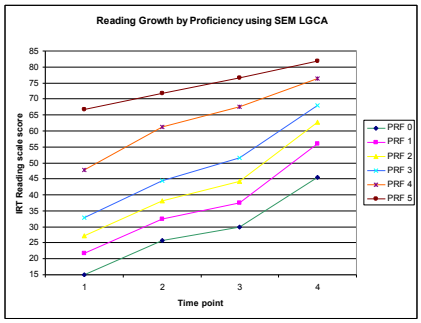
- Bobby is in 4th grade.
- He scored a 224 on MAP reading
  - Grade level is a 206
  - 224 is between 7th and 8th grade level
- MAP mean growth projection for a 4th grader in reading at his school is 8pts
- So what should Bobby's growth target be for your SLO?

Bobby – Scenario 1:

- Bobby remains in the 4th grade classroom where he received "grade-level" instruction (based on CCSS) plus his teacher's differentiation efforts.
- How much growth should we expect?
  - None?
  - Wrong!

Growth by Starting Proficiency

United States as a whole from K – 1 in reading



Bobby – Scenario 2:

- Bobby works once a week with a gifted resource teacher while at the same time receives more advanced materials and books form his classroom teacher.
- How much growth should we expect?

Growth Goals

- Should be based on:
- Prior level of demonstrated performance
- The goals and learning outcomes of the class or program into which the student will be placed
  - Then align that content with MAP or assessment outcomes