Using Longitudinal Designs with NCLB

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Outline

- Why you don’t need a vertical scale
- Two ways of assessing longitudinal growth without a vertical scale
- Two ways of using a longitudinal model in a NCLB system

What Is a Vertical Scale?

- A vertical scale puts achievement in different grades on a common scale
  - If a 3rd grade and a 4th grade student both score 250, their achievement is supposedly the same
  - If a student scores 250 in the 3rd grade and 260 in the 4th grade, the student grew 10 points over the year
  - It's an interval scale—a difference of 10 points at the bottom of the 3rd grade is supposed to be the same as a difference of 10 points at the top of the scale in 8th grade

Why You Don't Need a Vertical Scale (Part 1)

- If you had a vertical scale, it wouldn't tell you whether students had grown enough
  - If a student grows from 250 to 260 in a year, was that enough? How would you know?

Why You Don't Need a Vertical Scale (Part 2)

- If you didn't have a vertical scale, you still could tell whether students had progressed
  - If a student is at the 50th percentile of the statewide distribution one year and still at the 50th percentile the next year, the student has made an average amount of growth
  - If standards are equivalent from year to year and a student remains at the Proficient level, the student has made an acceptable amount of growth
  - That's especially true if only matched scores are used

Which Question Do You Need to Answer?

- Which schools have grown the most?
- Which schools have grown enough?
- The second question is more difficult to answer

Which Schools Have Grown Enough?

- Need either:
  - Performance standards at each grade that are coherent and a sense of what progress needs to be made from grade to grade (West Virginia)
  - Equivalent populations at each grade and an end goal that makes sense (Alaska)

West Virginia

- Tomlin vs. Gainer *requires* a non-status model
- Started designing a value-added model before passage of NCLB
- With passage of NCLB, looked for ways to integrate work already completed into a NCLB design

NCLB “Safe Harbor”

- “The school shall be considered to have made AYP if the percentage of students … who did not meet or exceed the proficient level … decreased by 10 percent of that percentage from the preceding school year and made progress on one or more of the academic indicators …”

NCLB Safe Harbor

- A 10 percent reduction from what?
- One possible interpretation is a 10 percent reduction from the same group at the prior grade the previous year
- Overall strategy—Set “status” bar so high that most have to rely on safe harbor, then define meeting safe harbor as longitudinal improvement

Example

Year	Year	3	4	5
0	2004	50		
1	2005		55	
2	2006			59.5

Example

Year	Year	3	4	5	6	7
0	2004	50	60	40		
1	2005		55	64	46	
2	2006			59.9	67.6	51.4

Issues

- Who to include
- Starting grade
- Raising general achievement to 100 percent
- Equivalent standards across grades
- Knowing what school's goal is before it's too late

Alaska

- Again, design of accountability system well underway before passage of NCLB
- In-state advisory committee wanted a system that was 2/3 growth, 1/3 status

Determining Growth

- Outside data made it clear that student achievement was highly consistent from grade to grade relative to national norms
- Underlying principle of accountability system was that 95 percent of students should pass High School Graduation Qualifying Exam

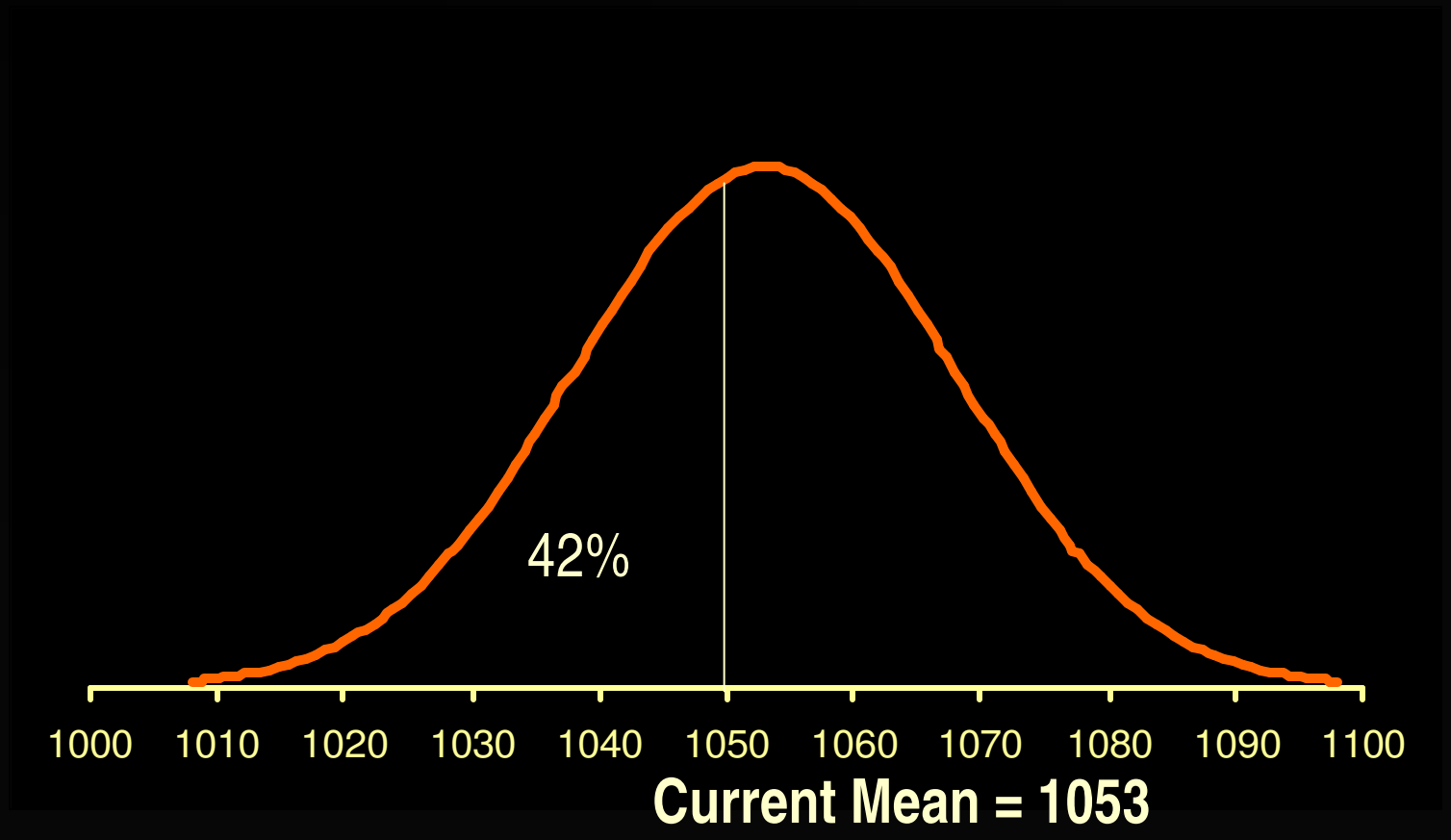
Creating a Scale for Each Grade

- Standards set to be equivalent from grade to grade
- Three or four digit scores at each grade
  - First (or first and second) digit identifies the grade
  - X50 means being at the standard for each grade
  - Standard deviation = 15

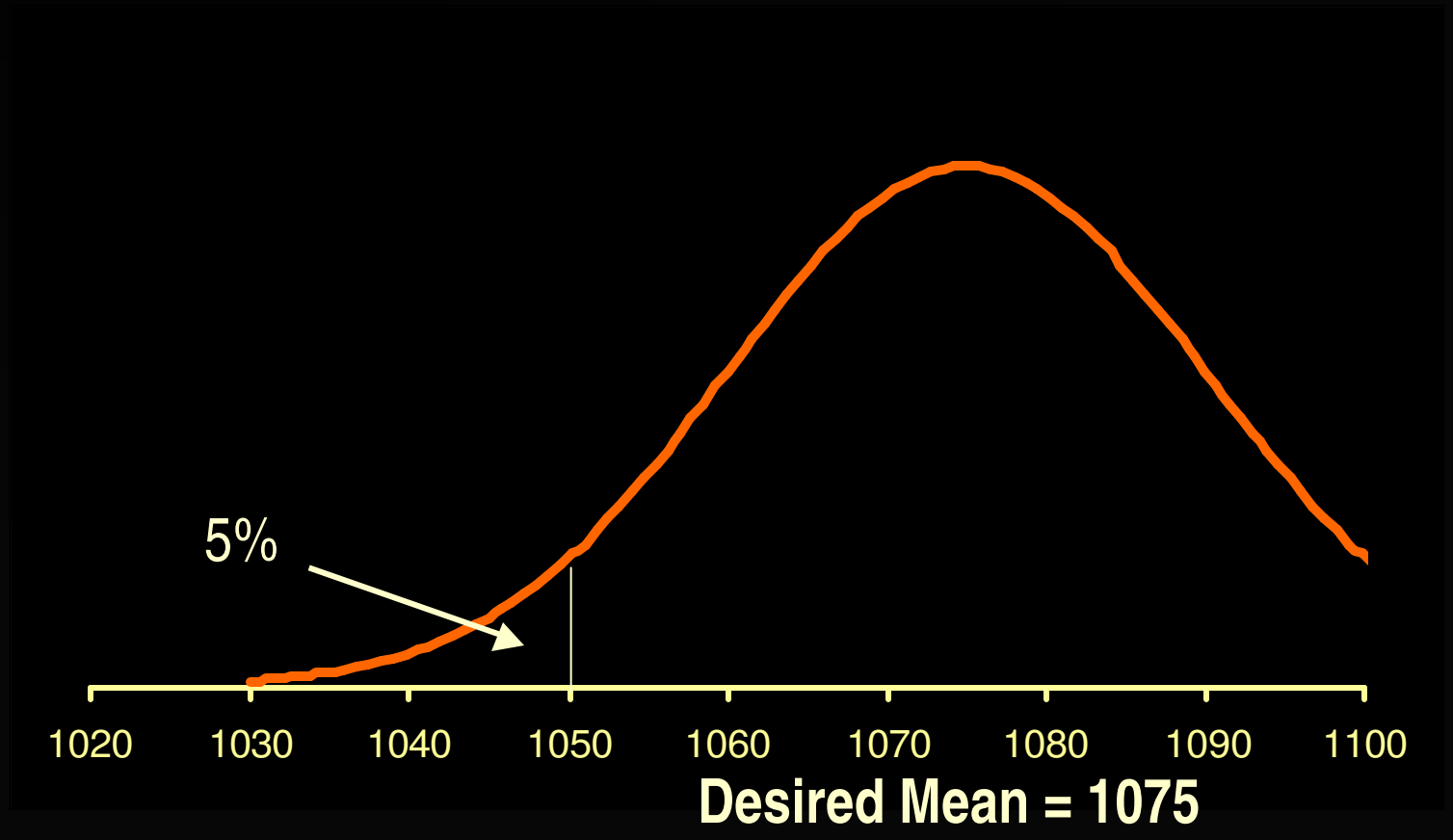
Establishing the 10th Grade Target

- 1050 is the score that 95 percent of the students need to have
- 58 percent currently get that score or higher (including dropouts)

Computing the 10th Grade Target: Current Performance



Computing the 10th Grade Target: Desired Performance



Example of Goal for Grade 3

- School 1
  - Mean = 325.0
  - Adequate Gain = (75 - 25) / 7 = 7.1
  - Target for Grade 4 = 432.1
- School 2
  - Mean = 368.0
  - Adequate Gain = (75 – 68) / 7 = 1.0
  - Target for Grade 4 = 469.0

Two Ways of Incorporating a Longitudinal Design into NCLB

- West Virginia model
  - The design itself is compliant with NCLB
- Two-Tiered System
  - Schools do not make AYP if they fail NCLB
  - Schools do make AYP if they pass NCLB
  - If NCLB leads to an uncertain decision about the school, a second tier of tests are applied

Two (or more)-Tiered System