Validating Indicators of College Preparedness: Ready or Not?

Presentation to:

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Validating Assessment and Accountability Programs
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Validating Content and Performance Standards

- NCLB has increased attention to validity issues:
  - The validity of assessments as indicators of student mastery of targeted content
  - The validity of accountability systems as measures of school performance
- But little or no attention is being paid to the validity of the content and performance standards that underlie our assessment and accountability systems
  - Inference to be validated is that the content standards are important for students to master
  - Rarely is the rationale for these standards more sophisticated than “Because we said do”

Improving the Rationale for Content and Performance Standards

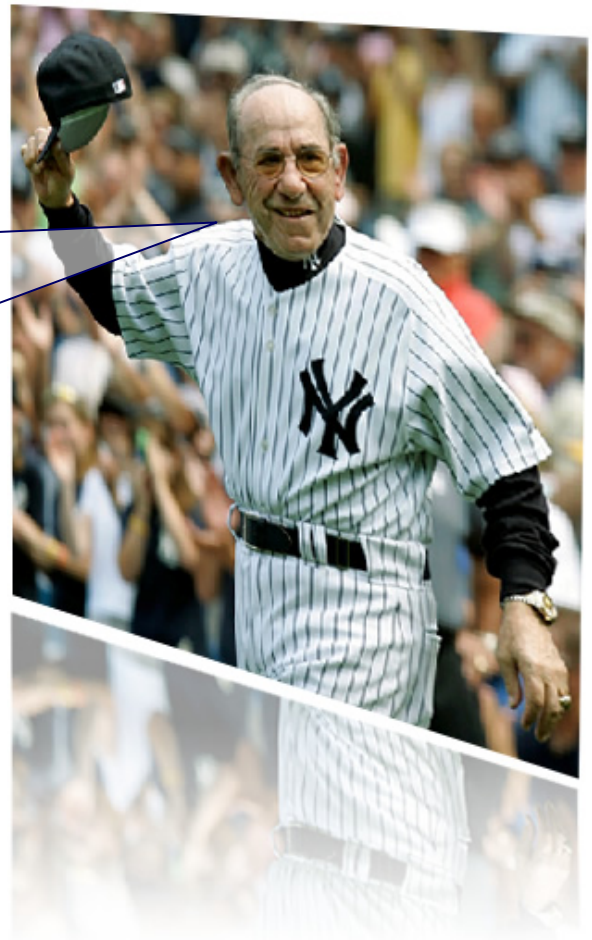
- Decisions on the content and level of achievement that define proficiency are not really *criterion referenced*
  - May involve business community as well as teachers and curriculum experts, but they are rarely asked to provide a rationale, let alone any evidence for proposed requirements
  - Some states align standards across grades, but without any empirical evidence of the relationship of mastery at one grade to readiness for content at the next grade
    - Lack of vertical alignment also complicates measuring growth
  - Current NAEP efforts to define "readiness" for 12th grade students are moving slowly and are not on the radar of most states
    - Framing student achievement expectations around readiness for college, work, and the rest of our lives

Rationale for Content and Performance Standards (Continued)

- Decisions on the content and level of achievement that define proficiency are not really *normative* either
  - Limited consideration of what other states require
  - Almost no consideration of what other countries require
- Without a rationale for prioritizing areas of knowledge and skill there is a tendency to just throw everything in
  - Resulting in mile-wide, inch-deep standards and curriculum
  - Making it difficult to assess the entire domain with a modest length test
- Are we teaching and measuring the right things?

Agreement on What to Teach Has to be a Significant Step Forward

You've got to be very careful if you don't know where you're going, because you might not get there.



Current Validity Evidence for Content Standards

- **Peer review requirements:**
  - **Who makes the judgments about required content**
    - **Sufficient involvement of stakeholders**
    - **Diversity/Representativeness of panel members**
    - **Broad review**
  - **Adoption by appropriate policy-makers**

An Alternative Model for Validating Content Standards

- Start with what we want students to know and be able to do after high school
  - Link to important post-high school outcomes
    - Success in earning a college degree
    - Career success: training and advancement in fulfilling careers
    - Citizenship
    - Success is leisure and avocational pursuits.
- Link objectives for earlier grades to success in achieving targeted knowledge and skills by the end of high school
  - Backwards mapping
  - Combined with forward-mapping of what we think students are able to learn at different ages (and grades)

College Preparedness Indicators

- **College Preparedness is Important!**
  - **Kirst research shows prevelance and cost of need for remediation in college.**

    Kirst, M. (2004). The High School/College Disconnect. *Educational Leadership*, 62, 51-55

- **Indicators that many students are NOT prepared suggest a failure of our K-12 education system.**
  - **Increased concern about international competitiveness (global economy)**
  - **Increased influence of the business community**

Predictive Validity Evidence vs. Content Validity Evidence

- Predictive Validity Model – Employment Tests
  - When selection tests have adverse impact for protected groups, employers must demonstrate a "business necessity" for test use by showing a significant correlation between test scores and success in training or performance on the job. That's it!
    - Inference: **Higher scores mean better job performance.**
- Content Validity Model – State Assessments
  - States perform alignment studies demonstrating coverage of targeted content standards.
    - Inference: **Higher scores mean greater mastery of targeted knowledge and skills**

Validity Model for Readiness Measures

- What's the inference to be validated?
  - A. Higher scores mean greater likelihood of gaining entry to college?
  - B. Higher scores mean less need for remediation before taking credit-bearing courses.
  - C. Higher scores mean mastery of specific knowledge and skills required for success in credit-bearing courses.
    - Hint: Always go for option C
- Correlational versus Causal Models
  - Correlation is not enough if we want to imply that school efforts to improve individual readiness, as measured by the test, will lead to increased ability to succeed in credit-bearing courses.
  - Example: A 1950's study showed a significant correlation between the viscosity of asphalt and the incidence of polio.
    - But the real link was higher summer temperatures leading to increased use of community swimming pools.
    - Increasing the thickness of asphalt would not change the temperature and so would not decrease the use of pools and the incidence of polio.

Specific Knowledge and Skills *versus* "Ability to Learn"

- Recent changes in the SAT move toward assessing skills that are taught (responding to Atkinson/UC System)
  - And away from more general abilities that might indicate ability to learn.
  - Not *can* you learn, but *have* you learned (what was taught).
  - Reinforced by recent NACAP Report (http://www.nacacnet.org)
- Not without some controversy
  - Learning ability measures could provide a way of identifying possible success for students with more limited opportunities to learn.
- But remedial courses are about correcting specific knowledge and skill deficits, not about improving more general learning abilities.
  - Constructing an argument and writing an essay laying out a position
  - Or basic mathematical knowledge (e.g., exponents) necessary to learn calculus

Validity Model for College Readiness Measures

1. Start with a rationale for the required knowledge and skills
   - Likely basic verbal and quantitative skills
2. Link to K-12 curriculum
   - And vertically align K-12 curriculum to lead up to required knowledge and skills
3. Link mastery of these skills to decisions regarding need for remediation (clearer than admissions)
   - Could be content judgments, but correlations based on empirical data might be stronger

- Not the ***only*** goal of a K-12 education
  - Need to value science, social studies, foreign language, citizenship, etc.

Summary

- Validation of Content Standards should go well beyond a review of the adoption process
- Ensuring that students are ready for college work (without remediation) is a reasonable goal (among others) for K-12 education
  - Vertical articulation could provide a rationale for goals at earlier grades building to college readiness by 12th grade
  - Readiness is more than just high SAT/ACT scores!
- Validating college readiness standards could require both
  - Content judgments about prerequisite skills for credit-bearing college courses
  - Empirical evidence linking mastery at each grade (through 12) to success at what comes next

Teaser for Friday Morning Session: Example #3: NAEP Readiness Validation

- Math and Reading Content Specifications reviewed by Achieve and others with regard to preparedness for:
  - College (without having to take remedial courses)
  - Employment Training: for challenging careers
  - Military Service
- Technical Panel convened to recommend studies to validate the resulting measures.
  - Chaired by Michael Kirst and including both educational policy, measurement, and industrial psychology experts.
  - Report due at the November 2008 meeting of the National Assessment Governing Board (NAGB)