

# HOW CAN VALUE-ADDED MEASURES BE USED FOR TEACHER IMPROVEMENT?

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# Use of Value-Added

- Value-added measures do not provide teachers with information on effective practices
  - generally don't help individual teachers improve
- Yet, value-added measures can be useful for improving instruction through other means
  - identifying practices that lead to higher academic achievement
  - targeting professional development toward teachers who need it most

# Pros and Cons

- VA has pros and cons as measures of teaching performance *relative to other available options*
- **Strengths**
  - direct measures of learning = valued outcome
    - other measures often lack direct link
  - recognizes complexity of teaching process
    - many different teaching styles can benefit students
  - adjusts for characteristics of students in classroom
    - less biased than are unadjusted test score measures
    - potentially less biased than observational measures

# Value-Added Measures

- *Weaknesses*

- dependent on specific student tests
  - incomplete measures of all the outcomes we want to see
  - important to choose tests that measure desired outcomes and to recognize tests as imperfect
- inability to provide information about specific teaching practices
  - teachers cannot learn about practice
- **imprecise**
  - an individual teacher's score is not an accurate measure of his/her performance

# Uses for School Improvement

- Value-added can be used in at least three ways
  1. **improving programs**
  2. **making decisions about human resources**
  3. **developing incentives for better performance**

# Program Improvement

- Deciding how to invest or what to expand/shrink
  - could benefit from information on the effects
  - ideally, access to random control trials in context, but usually impractical
  - VA measures alternative if aim to improve teaching
- Example: teacher professional development
  - if large enough, value-added can compare improvement of teachers who participated to others
  - better than self reports and unadjusted test scores

# Program Improvement

- Imprecision
  - worse for improvement than for static measures
    - errors at start and end
  - combining VA across teachers reduces imprecision
  - shows teachers improve with experience, more in some schools
- Example: teacher hiring
  - which programs provide higher VA teachers
  - measurable candidate criteria—e.g. performance on assessments—associated with higher VA
  - here using VA, not measures of change in VA

# Human Resource Decisions

- Information for better human resource decisions about individual teachers
  - imprecise, but still provides information for groups
  - e.g. targeting professional development to less effective teachers, promotion, dismissal
  - decisions likely to benefit from multiple measures
- Research only emerging on usefulness in practice
  - giving principals VA information to support their decisions
  - encouraging for high VA teachers to move to more difficult-to-staff schools



# Incentives

- Performance pay
  - conceptually, logical for effort and recruitment
  - shortcomings in practice for programs based on VA
    - focus on measured outcomes, at the cost of other
    - difficulty incentivizing teachers to treat students equitably
    - can discourages teacher cooperation
    - most evidence from U.S. finds no effects
  - programs combining VA with other measures or using only other measures more promising
    - provide feedback to teachers on their instructional practices: e.g. Cincinnati, Washington D.C.

# In Comparison

- Value-added measures may be used as instruments of improvement
  - program improvement
  - human resource decisions
  - incentives
- Other measures
  - provide information on practices
  - can be costly to collect
  - little information on validity or bias
- In combination
  - simultaneously
  - VA may allow targeting of the collection of more costly measures, for decision making – e.g. promotion or dismissal.

# What More Needs To Be Known?

- Substantial information on the technical properties of value-added measures
- Less known about how these measures are put into actual use
  - assignment of students to teachers
  - targeting of more intensive data collection
  - performance incentives
  - in combination with other measures

# What Cannot Be Resolved By Empirical Evidence On This Issue?

- Whether and how to use VA depends on local context
  - political feasibility and repercussions of the choices
  - relevance of VA information
    - importance of tested knowledge and skill
  - cost of VA
    - capacity of systems to calculate value-added and to collect other information
    - availability of well-designed tests

# Summary

- VA measures do not provide useful information for teachers about practices they need to improve
  - gauge test score gains relative to expected
- VA also has drawbacks for assessing individual teachers effectiveness because imprecise
- Nonetheless, still useful for improving practice, especially when they are used in combination with other measures
  - evaluation of programs and practices
  - human resource decisions
  - incentives for improved performance
- VA is sometimes better, sometimes worse than other measures

*Value-added measures are imperfect, but they are one among many imperfect measures of teacher performance that can inform decisions by teachers, schools, districts, and, states.*

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