

PREDICTING AND MEASURING OUTCOMES OF TEACHER EDUCATION PROGRAMS

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THE PROBLEM

- University-based teacher preparation programs (TPPs) are under scrutiny from accreditation associations (e.g., CAEP), states, and the academy.
 - CAEP wants more rigorous admissions (among other things).
 - States are using various criteria for initial certification: Test performance, teaching quality performance assessment.
 - States are beginning to use new criteria for TPP program approval: VAMs of graduates.
 - Many academics argue that TPPs are simply unwanted barriers to entry into the teaching force and that we should just try to recruit the “best and brightest” (even if they are not TPP graduates).
- TPPs have a choice: They can allow others to define the terms by which they are held accountable—OR—they can develop their own arguments about how they prepare teachers and with what outcomes and then examine the validity of their arguments.

JOURNAL ARTICLES

- Evans, C.M. (2017). Predictive validity and impact of CAEP standard 3.2: Results from one master's-level teacher preparation program. *Journal of Teacher Education*, 68(4): 363-376.
- Goldhaber, D., Cowan, J., and R. Theobald (2017). Evaluating prospective teachers: Testing the predictive validity of the edTPA. *Journal of Teacher Education*, 68(4): 377-393.

A LOGIC MODEL FOR TPPs

Admissions Standards

- What qualifications should candidates have in order to be admitted into TPPs? Why?
- Once admissions criteria are stated: How should they be measured? Are admissions criteria related to pre-service outcomes? In-service outcomes?
- **Readings:** Evans discussed CAEP's use of UGPA and standardized test scores as admissions criteria. The paper asks: Do these variables predict program outcomes?

Pre-service Outcomes

- In order to be certified as ready for practice, what should TPP students know and be able to do? Why?
- What measures should TPPs use to show what its teacher candidates know and are able to do? Are these measures related to how well teachers do as in-service teachers?
- **Readings:** Evans measured outcomes as TPP GPA. Goldhaber uses edTPA. Why these? Do they reflect what we want students to know and be able to do? Do they predict occupational performance?

In-Service Outcomes

- Should TPPs be held accountable for their graduates' occupational performance? Why?
- What measures of occupational performance should be used?
- **Readings:** Goldhaber uses employment and valued added scores as measures of teacher performance. Why these? Are there other measures (e.g., teacher persistence, teacher evaluation scores)? Over what time period should a TPP be held accountable for occupational outcomes?

DISCUSSION QUESTIONS

- What standards should teacher preparation programs have for admitting teacher candidates? What measures should be used?
- What end-of-program outcomes should a TPP seek to achieve, and how should outcomes be measured?
- To what extent should TPPs be accountable for the post graduation outcomes of their students? For employment? For value-added scores? For teacher evaluation scores?

EVANS, C. (2017):

BACKGROUND AND RESEARCH QUESTIONS

- **Background:**
 - CAEP recently set new standards for TPP accreditation. To be accredited, programs must set a minimum standard for admission. A student must have 3.0 UGPA and score above the 50th percentile on a nationally normed achievement test (like ACT, SAT, GRE).
- **Purpose of paper:**
 - To understand whether UGPA or GRE *predict* a student's TPP performance, where performance is measured by GPA.
 - To understand the feasibility of the CAEP standard for TPP program enrollment.
- **Research Questions**
 - RQ1: How well do GRE scores and undergraduate GPA predict elementary and secondary teacher candidate performance in a master's-level TPP, controlling for student demographic characteristics?
 - Research question 2: To what extent would a more rigorous admissions policy based on UGPA or GRE scores impact the enrollment of a master's-level TPP and its applicants?

EVANS, C. (2017): METHODS AND PARTICIPANTS

- This study included 553 teacher candidates who completed the University of New Hampshire's (UNH) MA-level TPPs in elementary and secondary education from 2010-2014.

Measures	Covariates	Outcome variable
<p>The UGPA and GRE scores of all graduates were measured.</p> <p>UGPA was argued to be a proxy of content/subject knowledge.</p> <p>GRE was argued to be proxy of general cognitive ability.</p>	<p>Four covariates (or “controls”) were included in this analysis:</p> <p>(1) elementary or secondary education major;</p> <p>(2) sex;</p> <p>(3) race;</p> <p>(4) age.</p>	<p>The program outcome is GGPA.</p> <p>The author chose GGPA as the outcome variable because “no other outcome measures were available” (Evans, 2017, p. 368).</p>

EVANS, C. (2017):

METHODS AND PARTICIPANTS

- RQ1 (*predictive validity analysis*) was conducted in two steps:
 - zero order correlations of UGPA and GRE to GGPA
 - multiple regression analysis where UGPA and GRE predict GGPA controlling for GRE test type, program type, sex, race, and age
- RQ2 (*policy impact analysis*) was assessed by simply counting the number of students who would and would not have been admitted under different CAEP admission standards

EVANS, C. (2017): VALIDITY FINDINGS

Zero Order Correlations to GGPA

- $UGPA = .38$
- $GRE_v = .12$
- $GRE_m = .13$
- $GRE_a = .16$
- $GRE_rV = -.01$
- $GRE_rM = -.01$
- $GRE_rA = .18$

Regression Model

- Mean GGPA of students = 3.73
- A one s.d. increase in UGPA was associated with .14 increase in GGPA
- A one s.d. increase in GRE_a was associated with a .03 increase in GGPA

EVANS, C. (2017): POLICY IMPACT FINDINGS

- Using CAEP UGPA standards (minimum GPA = 3.0) would have no effect who was admitted to UNH program.
- Using CAEP admission standard that applicants must score above 50th percentile on GRE to be admitted *would* affect UNH program:
 - About 65% of students would not have been admitted
 - But, the difference in GGPA between students who would and would not be admitted would only be .01 GPA (3.79 vs. 3.78)

GOLDHABER, COWAN, & THEOBALD (2017): PURPOSE

- edTPA is being adopted as a tool for teacher preparation and licensure/certification (600 TPPs, in 40 states, 7 states licensure requirement).
- Using longitudinal data from Washington State teacher candidates, the authors study the extent to which performance on edTPA: (a) predicts the likelihood of employment; and (b) teacher value-added scores.

GOLDHABER, COWAN, & THEOBALD (2017): PARTICIPANTS

- The study of employment uses data on 2362 teacher candidates who took the edTPA in Washington State in 2013-2014, including those who did not enter the workforce (n=2,362 candidates).
- The study of teacher value-added scores had a sample of 277 teachers taught ELA and math in 4th through 8th grades in Washington State (where student achievement testing occurs).

GOLDHABER, COWAN, & THEOBALD (2017): MEASURES

- The authors used three primary ways to represent edTPA scores in their analyses:
 - a measure of whether or not the candidate's score exceeded the edTPA cut score for licensure;
 - the continuous score of a candidate on edTPA;
 - and the score of a candidate on three scored dimensions of edTPA (planning, assessment, instruction).
- The authors measured post graduation outcomes as follows:
 - whether or not a candidate was employed in a Washington state public school.
 - the value added score of a teacher's students

GOLDHABER, COWAN, & THEOBALD (2017): FINDINGS ON EMPLOYMENT

- The authors found that candidates with higher edTPA scores were more likely to be employed in Washington State public schools the year following assessment.
- This was true using both the cut score and the continuous score.
- Candidates who “passed” edTPA were 15% more likely to be employed than those who did not pass.
- The relationship between continuous scores and probability of employment is shown below

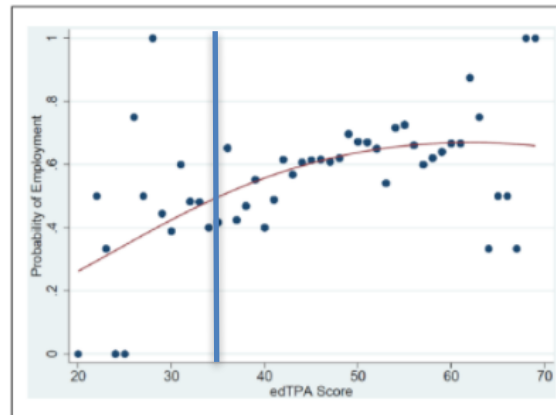


Figure 2. Relationship between edTPA scores and probability of public teaching employment.

GOLDHABER, COWAN, & THEOBALD (2017): FINDINGS ON VALUE ADDED SCORES

- The authors found that edTPA scores predicted a teacher value-added scores for Reading/ELA (e.s. = .25) but not math (e.s.= .04). The continuous relationship is:

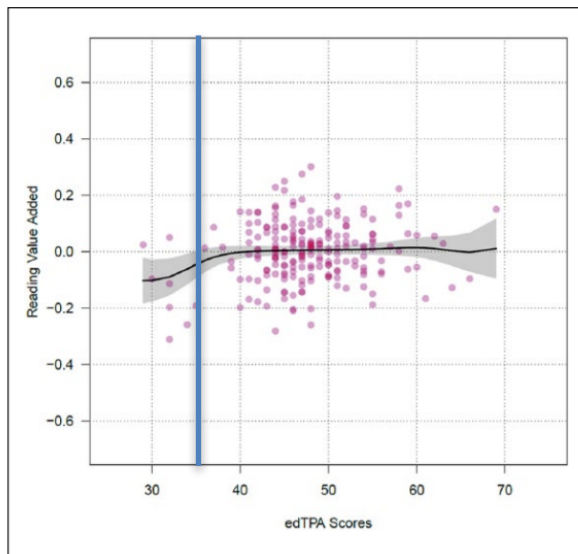


Figure 3. Relationship between edTPA scores and reading value added.

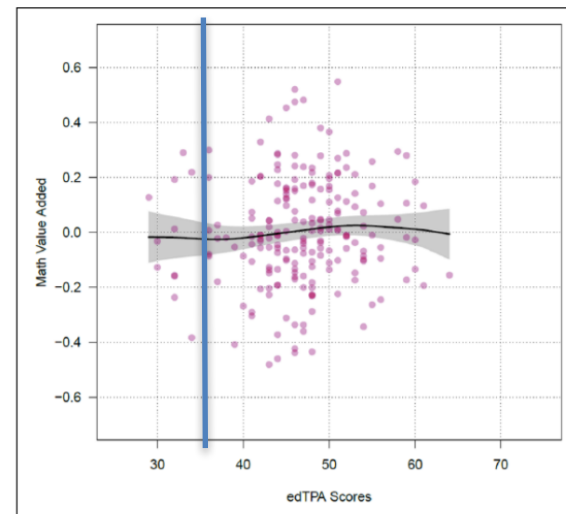


Figure 4. Relationship between edTPA scores and mathematics value added.

- There was not much evidence that individual components of edTPA (assessment, planning, instruction) were strong predictors of teacher value-added.

GOLDHABER, COWAN, & THEOBALD (2017): OTHER INTERESTING FINDINGS

- Hispanic teacher candidates scored lower than non-Hispanic white candidates on edTPA , and if scores on edTPA were to become consequential, Hispanic candidates would be 3 times more likely to fail the assessment than non-Hispanic candidates.
- edTPA has measurement error. Only about 46% of reading teachers who failed edTPA are in the bottom 20% of VAM scores and 8% are in the top 20% of VAM scores.
- The cost to administer edTPA = \$300/assessment.

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DISCUSSION CONCLUSIONS

What to take from these articles and the discussion in Journal Club? How to expand and refine our notions about teacher preparation?



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