edTPA in North Carolina: Early Evidence on Candidate Performance and Predictive Validity

In this research brief the Education Policy Initiative at Carolina (EPIC) examines the edTPA performance of UNC System candidates and assesses whether edTPA scores predict early-career teaching outcomes. This evidence is particularly important as North Carolina prepares for the statewide implementation of edTPA. EPIC finds that: (1) the edTPA scores of UNC System candidates are comparable to national averages; (2) candidates with higher edTPA scores are more likely to secure teaching positions in North Carolina public schools; and (3) candidates with higher edTPA scores have higher value-added estimates and evaluation ratings. These predictive validity results are positive for minority and white candidates but differ across state achievement tests and for graduates of certain institutions. Future research should continue to examine edTPA as a key data point for program accountability and growth.

Introduction

Beginning in 2019, North Carolina will require all those seeking an initial teaching license to submit passing scores on a nationally-normed and valid performance assessment. Unlike traditional, knowledge-based licensure exams (e.g. Praxis II), performance assessments are often completed in K-12 classroom settings and are designed to authentically assess candidates' readiness to teach. In North Carolina, many teacher preparation programs (TPPs) are preparing for this requirement by integrating edTPA into their coursework and student teaching. edTPA is a widely adopted performance assessment—in use by nearly 800 TPPs in 40 states—that focuses on candidates' planning, instruction, and assessment skills.

In advance of this performance assessment requirement, it is important for TPPs and North Carolina policymakers to examine how teacher candidates are scoring on edTPA and to assess whether edTPA scores predict outcomes for early-career teachers. At the university level, this evidence can help TPPs meet accreditation requirements and make data-driven program improvements. At the state level, this evidence can inform program accountability and the establishment of a passing threshold for licensure.

The UNC System is addressing the need for edTPA evidence through its on-going research collaboration with the Education Policy Initiative at Carolina (EPIC). As part of the 2017-18 scope of work for the UNC Educator Quality Research Initiative, EPIC is partnering with select

UNC System institutions to accomplish the following: (1) detail the edTPA scores of teacher candidates; (2) assess whether edTPA scores predict entry into the state's teaching workforce; and (3) estimate whether edTPA scores predict the value-added estimates and evaluation ratings of early-career teachers. This evidence is crucial to the utility of edTPA: if edTPA scores do not predict graduate outcomes, then state officials and TPPs should examine whether and how they act on edTPA data. In the remainder of this research brief, EPIC describes the data and analyses, summarizes the edTPA scores for candidates, and presents the predictive validity results.

Background

In these analyses EPIC focuses on officially-scored edTPA portfolios from the 2013-14 through 2015-16 years. For this study period three UNC System institutions had officially-scored edTPA data: East Carolina University (ECU) for their 2013-14, 2014-15, and 2015-16 graduating cohorts and North Carolina State University (NCSU) and the University of North Carolina Charlotte (UNCC) for their 2014-15 and 2015-16 graduating cohorts. In total, these performance assessment data cover 1,980 traditionally-prepared teacher candidates with complete edTPA portfolios.[1] EPIC connected these edTPA scores to administrative data from the NC Department of Public Instruction (NCDPI) for the 2014-15 through 2016-17 school years. These NCDPI data include employment records, teacher demographics, Education Value-Added Assessment System (EVAAS) estimates, North Carolina Educator Evaluation System (NCEES) ratings, classroom roster files, and school characteristics.

From these NCDPI data EPIC created the outcome measures for these analyses: (1) an indicator for whether a teacher candidate worked as a teacher in a NC public school in the year after TPP completion; (2) standardized EVAAS estimates; and (3) a composite (standardized) NCEES rating. The focal edTPA measures include Planning, Instruction, and Assessment constructs identified through factor analysis, a standardized total score, and indicators for whether candidates met hypothetical passing

thresholds of 38, 40, and 42.[2] EPIC's preferred analyses use a university fixed effect to assess how variation in edTPA scores, within a TPP, predicts variation in the outcomes for that program's graduates. All analyses control for candidate demographics; the EVAAS and NCEES models also control for student and school characteristics.

How are teacher candidates scoring on edTPA?

Figure 1 displays the average Planning, Instruction, Assessment, and total score for UNC System candidates in the study sample (n=1,980) and for teacher candidates, nationwide, during the 2015 calendar year (approximately n=27,000).[3] The average Planning, Instruction, and Assessment scores for UNC System candidates are 15.25, 14.81, and 14.33, respectively. The average total score is 44.39. These values are all comparable to national averages from 2015.

Figure 1: Average edTPA Scores for the UNC System and Nationally
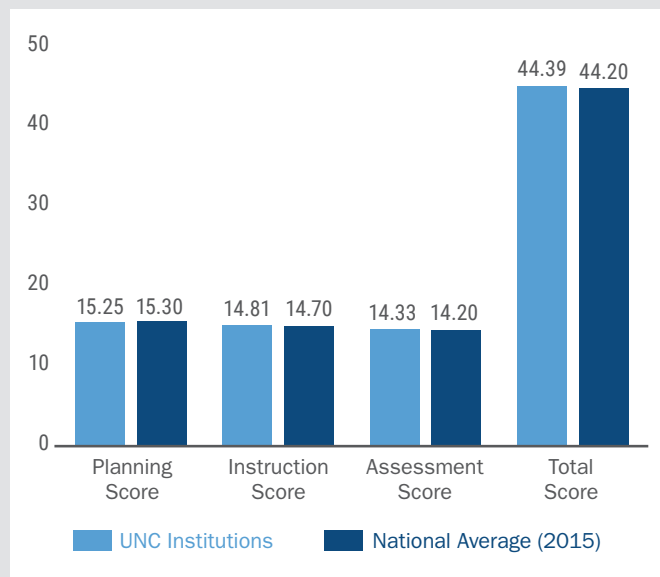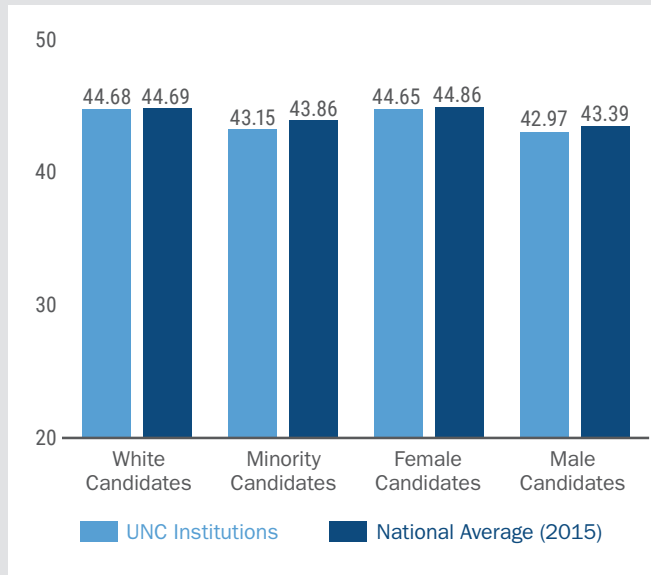

Note: *This figure presents average edTPA scores for UNC System candidates and for teacher education candidates, nationwide. Possible scores for the Planning, Instruction, and Assessment tasks range from 5-25; possible total scores range from 15 to 75*

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[1] EPIC excluded teacher candidates who had condition codes (non-scored data) for any of the edTPA rubrics. Furthermore, EPIC excluded lateral entry teachers who completed their edTPA portfolios while simultaneously serving as a classroom teacher.

[2] In additional analyses EPIC examined whether each edTPA rubric predicted the effectiveness of early-career teachers. EPIC shared these results with its partner institutions to drive their program improvement efforts.

[3] Please see https://secure.aacte.org/apps/rl/res_get.php?fid=3013&ref=edtpa for the full 2015 edTPA report.

Figure 2: Average edTPA Scores by Gender and Minority Status (UNC System and Nationally)

Note: *This figure presents average edTPA total scores for white, minority, female, and male teacher education candidates in the UNC System and for teacher candidates nationwide.*

Figure 2 presents the average edTPA total score for white, minority, female, and male teacher candidates from UNC System institutions and for all teacher candidates nationwide in 2015. Looking within the UNC System, white candidates outscore their minority peers by approximately 1.50 points while female candidates outscore their male peers by nearly 1.70 points. Both of these differences are statistically significant. These edTPA total scores are comparable to national averages for the same demographic subgroups.

Do edTPA scores predict entry into North Carolina's teacher workforce?

Figure 3 displays results for whether edTPA scores predict entry into the state's public school teaching workforce in the subsequent academic year. Regarding the edTPA constructs, findings indicate that the Instruction and Assessment factors predict the likelihood of securing a teaching position. For example, a one standard deviation increase in the Assessment factor score (equivalent to an Assessment score that is three points higher) is associated with a 2.7 percentage point increase in the probability of teaching in North Carolina public schools in the following year. Likewise, a one standard deviation increase in the

edTPA total score (equivalent to seven points) is associated with a 3.1 percentage point increase in the probability of teaching in North Carolina public schools. To put the magnitude of these results into perspective, EPIC notes that approximately 67 percent of the candidates in our sample taught in NC public schools in the year after completing their teacher preparation.

Figure 3: Do edTPA scores predict entry into North Carolina's public school teacher workforce?
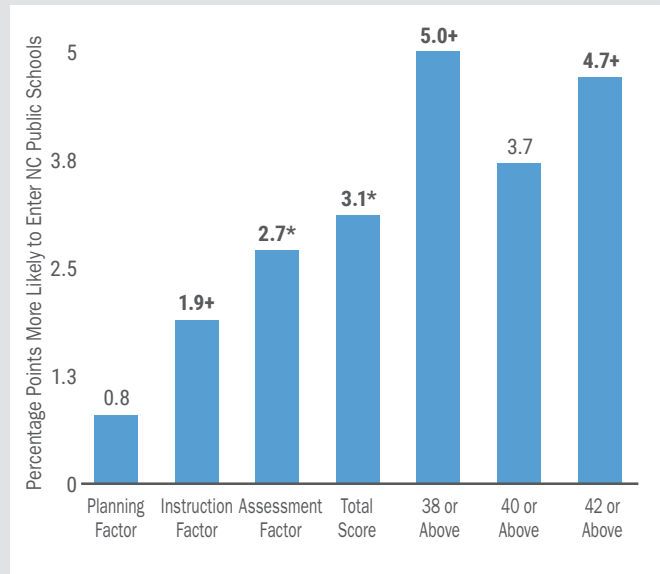
Note: *This figure shows whether edTPA scores predict the probability of entering the teaching force in North Carolina in the year after TPP completion. All results come from models with a university fixed effect and are expressed in percentage point units. '+' and '*' indicate statistical significance at the 0.10 and 0.05 levels, respectively.*

Do edTPA scores predict the EVAAS estimates of early-career teachers?

Table 1 presents the associations between the edTPA scores of UNC system candidates and their EVAAS estimates as first and second-year teachers. EVAAS follows individual students over time and uses test scores from a variety of state assessments to estimate the value-added effectiveness of individual teachers. EPIC estimated models for the predictive validity of edTPA across all EVAAS data and separately for Text Reading and Comprehension (TRC; early-grades reading), EOG exams in elementary and middle grades, and EOC and final exams in secondary grades.

Table 1: Do edTPA scores predict the EVAAS estimates of early-career teachers?

|	All EVAAS Estimates	Text Reading and Comprehension	EOG Exams	EOC and Final Exams in Secondary Grades
Planning Factor	0.033	0.057	0.012	0.040
Instruction Factor	0.028	0.033	0.020	**0.097***
Assessment Factor	0.036	**0.095+**	0.046	0.048
Total Score	**0.057***	**0.118***	0.046	**0.103+**
Total Score: 38 or Above	**0.135***	**0.260***	0.127	**0.229+**
Total Score: 40 or Above	**0.113+**	**0.256***	0.121	0.145
Total Score: 42 or Above	**0.148***	0.185	**0.136+**	**0.335***
Observations	2313	659	1102	552

Note: This table presents associations between the edTPA scores of UNC System candidates and their EVAAS estimates (standardized) as first and second-year teachers. All results come from models with a university fixed effect. '+' and '*' indicate statistical significance at the 0.10 and 0.05 levels, respectively.

For all EVAAS estimates, a one standard deviation increase in the edTPA total score predicts a 6 percent of a standard deviation increase in teacher value-added. Candidates who met hypothetical passing thresholds also had significantly higher EVAAS estimates. For instance, candidates who scored at 42 or above had EVAAS estimates nearly 15 percent of a standard deviation higher than peers who scored below that threshold. To put these results into perspective, EPIC notes that the average difference in EVAAS estimates between first and second-year teachers is approximately 14 percent of a standard deviation. These predictive validity results are strongest for early-grades reading—the mCLASS TRC—and for EOC and final exams in secondary grades. For those exams, a one standard deviation increase in the edTPA total score predicts a 10-12 percent of a standard deviation increase in EVAAS estimates.

Given anxiety that performance assessments may complicate efforts to diversify the teacher workforce, EPIC assessed how edTPA predictive validity results compare for white and minority candidates. Figure 4 presents results on the predictive validity of the edTPA total score. Results for first-year teachers show that the total score predicts significantly higher EVAAS estimates for white and minority candidates. For example, a one standard deviation increase in the total score of minority candidates predicts a 12 percent of a standard deviation

increase in their EVAAS estimates. For first and second-year teachers, combined, only the total score of white candidates predicts significantly higher value-added.

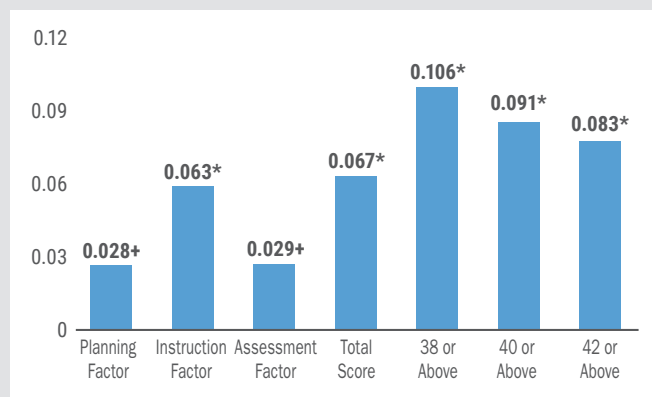**Figure 4: The predictive validity of edTPA scores for white and minority teachers (EVAAS)**
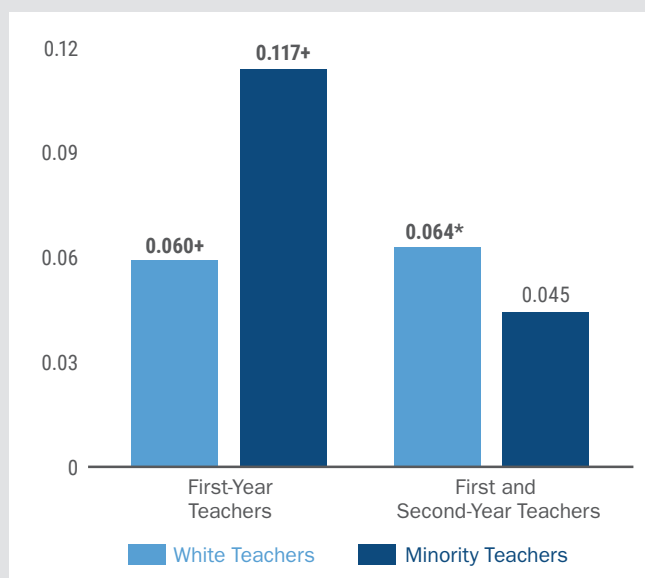
Note: This figure presents associations between the edTPA total scores of white and minority UNC System graduates and their EVAAS estimates (standardized) as early-career teachers. All results come from models with a university fixed effect. '+' and '*' indicate statistical significance at the 0.10 and 0.05 levels, respectively.

# Do edTPA scores predict the NCEES ratings of early-career teachers?

Figure 5 presents the associations between the edTPA scores of UNC System candidates and their ratings as first and second year teachers on a composite NCEES measure (standardized).[4] NCEES is an evaluation rubric based on the Framework for 21st Century Learning and the North Carolina Professional Teaching Standards. Regarding the edTPA constructs, results indicate that all three factors predict higher evaluation ratings. The results for Planning and Assessment are significant but modest; the estimate for Instruction is larger and indicates that a one standard deviation increase in the Instruction factor predicts a 6 percent of a standard deviation increase in the composite evaluation measure. The edTPA total score is also associated with a 6 to 7 percent of a standard deviation increase in the composite rating. To put these results into perspective, EPIC notes that the average difference in evaluation ratings between first and second-year teachers is approximately 35 percent of a standard deviation. Finally, whether candidates meet hypothetical passing thresholds

Figure 6: The predictive validity of edTPA scores for white and minority teachers (NCEES)
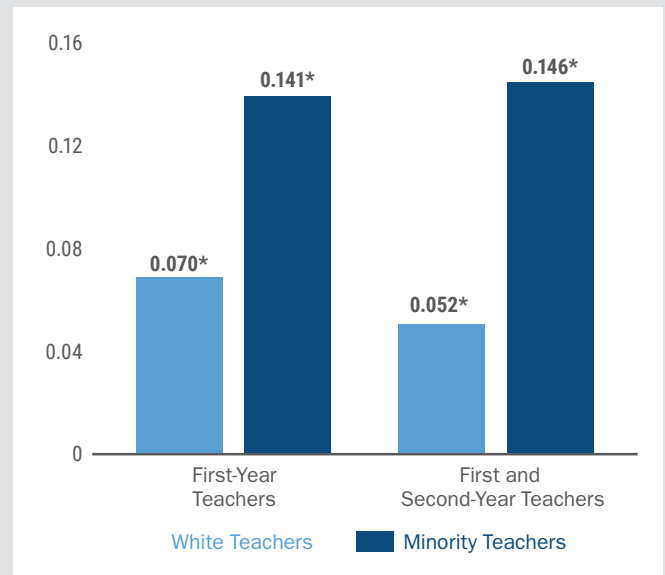
Note: This figure presents associations between the edTPA total scores of white and minority UNC System graduates and their NCEES composite estimates (standardized) as early-career teachers. All results come from models with a university fixed effect. '+' and '*' indicate statistical significance at the 0.10 and 0.05 levels, respectively.

Figure 5: Do edTPA scores predict the NCEES ratings of early-career teachers?

Note: This figure presents associations between the edTPA scores of UNC System candidates and their NCEES composite rating (standardized) as first and second-year teachers. All results come from models with a university fixed effect. '+' and '*' indicate statistical significance at the 0.10 and 0.05 levels, respectively.

is also related to their composite evaluation rating. For example, candidates scoring at 38 or above have composite evaluation ratings that are 10 percent of a standard deviation higher than their peers scoring below a 38.

Figure 6 displays NCEES predictive validity findings for white and minority candidates. Results for first–year teachers show that the edTPA total score predicts significantly higher NCEES ratings for white and minority candidates. A one standard deviation increase in the total score of minority candidates predicts a 14 percent of a standard deviation increase in their NCEES composite rating; the result is significant but half that for white candidates. The predictive validity estimates for first and second-year teachers are comparable to those for first–year teachers. These results indicate that minority candidates' edTPA performance is related to their future teaching evaluations.

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[4] EPIC created this composite evaluation rating by summing teachers' ratings on standards 1-5 of the NCEES and standardizing this value. Predictive validity results are similar for individual NCEES standards.

Discussion

As a data point that will soon be common to many teacher candidates across North Carolina, edTPA has the potential to help state officials and TPPs leverage evidence-based accountability and growth. However, this potential is contingent upon edTPA predicting program and candidate outcomes. This study represents an early effort to assess these relationships; continued work is necessary as the scope of edTPA implementation expands.

Overall, EPIC finds that the edTPA scores of UNC System candidates are comparable to national averages. Like national data, there is also a need to improve the edTPA performance of minority and male candidates in North Carolina. When connecting edTPA scores to NCDPI administrative data, EPIC finds that higher scoring candidates are more likely to secure teaching positions in the state's public schools. Furthermore, results generally show a positive and significant relationship between edTPA scores and the performance of early-career teachers. For EVAAS, these positive results are strongest for the mCLASS TRC and for EOC and final exams in secondary grades. For EVAAS and NCEES, predictive validity exists for white and minority candidates. Further analyses (not displayed) show that the predictive validity of edTPA is strongest at institutions where edTPA scores are consequential for licensure. As such, future research should continue to assess predictive validity as edTPA becomes consequential across North Carolina.

For more research on this topic

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Bastian, K.C. Lys, D., & Yi, P. (2018). A framework for improvement: Analyzing performance assessment scores for evidence-based teacher preparation program reforms. In press, *Journal of Teacher Education*.

Goldhaber, D., Cowan, J., & Theobald, R. (2017). Evaluating prospective teachers: Testing the predictive validity of edTPA. *Journal of Teacher Education*, 68(4), 377-393.

Ledwell, K. & Oyler, C. (2016). Unstandardized responses to a "standardized" test: The edTPA as gatekeeper and curriculum change agent. *Journal of Teacher Education*, 67(2), 120-134.

Peck, C.A., Singer-Gabella, M., Sloan, T., & Lin, S. (2014). Driving blind: Why we need standardized performance assessment in teacher education. *Journal of Curriculum and Instruction*, 8(1), 8-30.

Study Author: Kevin C. Bastian (June 2018)

EPIC is an interdisciplinary team that conducts rigorous research and evaluation to inform education policy and practice. We produce evidence to guide data-driven decision-making using qualitative and quantitative methodologies tailored to the target audience. By serving multiple stakeholders, including policy-makers, administrators in districts and institutions of higher education, and program implementers we strengthen the growing body of research on what works and in which context. Our work is ultimately driven by a vision of high quality and equitable education experiences for all students, and particularly students in North Carolina.

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