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# The Consequences of edTPA on Teacher Shortages, Teacher Diversity, and Student Outcomes: Evidence from Georgia, New York, Washington, and Wisconsin.

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February 19, 2021

## Executive Summary

The Illinois State Board of Education (ISBE) mandated the educative Teacher Performance Assessment (edTPA), a performance-based assessment to evaluate teaching readiness, as a licensure requirement since July 2015. In the previous reports, we find that edTPA had negative impacts on new teachers and their students in Illinois. This report seeks to generalize the findings to four other early edTPA states – Georgia, New York, Washington, and Wisconsin. Washington and New York are the earliest states integrating edTPA into their licensure systems in 2014, whereas Georgia and Wisconsin adopted edTPA in 2015 and 2016.

### Main Takeaways on Teacher Outcomes:

- EdTPA reduced new teacher hires by a magnitude between 21.6% and 58.6%.
- EdTPA reduced black representation among new hires, mainly in Georgia.
- EdTPA reduced the number of graduates majoring in education by 17.8%
- EdTPA also reduced black representation among new teacher graduates in more-selective teacher preparation programs.

### Main Takeaways on Student Outcomes:

- EdTPA reduced the mathematics and reading scores for 4th grade students by 3.5 and 4.27 points.
- The negative impacts concentrate on higher-achieving students.
- EdTPA did not have significant impacts on the test scores of 8th grade students.

Consistent with our two previous reports which focused on Illinois, edTPA in general caused shortage and diversity issues among new teachers. EdTPA also did not achieve the intention of improving student academic performance. Based on the consistent findings across states, we recommend that ISBE should remove the mandatory nature of edTPA in the Illinois teacher licensure system.

## About the Project for Middle Class Renewal

The Project for Middle Class Renewal’s mission is to investigate the working conditions of workers in today’s economy and elevate public discourse on issues affecting workers with research, analysis, and education in order to develop and propose public policies that will reduce poverty, provide forms of representation to all workers, prevent gender, race, and LGBTQ+ discrimination, create more stable forms of employment, and promote middle-class paying jobs. Each year, the Project will be dedicated to a number of critical research studies and education forums on contemporary public policies and practices impacting labor and workplace issues. The report that follows, along with all other PMCR reports, may be found by clicking on “Project for Middle Class Renewal” at [illinoislabored.org](http://illinoislabored.org). If you would like to partner with the Labor Education Program in supporting the work of the Project or have questions about the Project please contact Robert Bruno, Director of the Labor Education Program, at (312) 996-2491.

## About the Author

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## Introduction

The educational Teacher Performance Assessment (edTPA), a performance-based examination to evaluate teaching readiness for new teachers, has gained popularity and been adopted across the nation, including Illinois in 2015. Different from the traditional one-time written examination, edTPA is a semester-long project involving lesson plans, classroom videos, and detailed reports. It aims to improve the pedagogy of new teachers and the outcomes of their students.<sup>1</sup>

In two previous Project for Middle Class Renewal reports on Illinois, we found that edTPA was associated with some negative academic achievement impacts on the students of new teachers. We also found that edTPA reduced new teacher supply and black representation among them, aggravating the shortage and diversity issues in the Illinois teacher workforce. These findings cast doubt on whether edTPA is an effective component of the teacher licensure system. In this report, we seek to validate our previous findings by extending the analysis to four other early edTPA states, including Washington, New York, Georgia, and Wisconsin.

For teacher outcomes, we consistently find that edTPA created shortage and diversity issues in the sampled states. We first analyzed the school district hiring data and find that edTPA reduced new teacher hires by a magnitude between 21.6% and 58.6%. It also reduced black representation among new hires in Georgia by a magnitude between -1.6 and 5.4 percentage points.<sup>2</sup> Our analysis on the degree completion data from the Integrated Postsecondary Education Data System (IPEDS) offers the same qualitative results. We find that edTPA was also associated with a 17.8% reduction in the number of graduates majoring in education. We also find that there was a reduction in black presentation among new graduates. Whereas the magnitude was small on average (-0.08 percentage points), the negative effect on new black graduates concentrated at more selective colleges and universities. There was a significant reduction in black representation among new teacher graduates by about 1.3 percentage points. Overall, the analyses on both the school district hiring data and the IPEDS consistently suggest that edTPA had adverse impacts on teacher supply. The negative impacts also fall disproportionately on aspiring minority teachers.

For student performance outcomes, contrary to the policy intention, edTPA had negative impacts on the students of new teachers. We analyzed the restricted-use data of the National Assessment of Educational Progress (NAEP) from 2009 to 2017 that contains the mathematics and reading scores of a national representative sample of students. We found that edTPA was associated with

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<sup>1</sup> Washington and New York are the earliest states integrating edTPA into their licensure systems in 2014. Georgia and Wisconsin adopted edTPA later in 2015 and 2016.

<sup>2</sup> The reduction in black representation in other edTPA states was not statistically significant.

a reduction in the mathematics and reading scores for 4th grade students by 3.5 and 4.27 points, respectively. We also found that the negative effect concentrated on higher-achieving students.

The current report validates our earlier analyses in Illinois with two consistent findings.

First, edTPA reduced overall new teacher supply and particularly black representation among new teachers. This labor market entry effect should prompt immediate concerns over the shortage and diversity issues of the teacher profession.

Second, instead of improving student learning, edTPA had adverse impacts on student academic performance. Both the results on teachers and students suggest that the Illinois State Board of Education should remove the mandatory nature of edTPA in the Illinois teacher licensure system.

## Teacher Shortage and Diversity Concern

We analyzed school district hiring data and degree completion data to cross-validate our Illinois findings about the effect of edTPA on new teacher supply.

School district hiring data was collected separately from Georgia, Washington, Wisconsin, and their neighboring non-edTPA states for comparison (Florida, Idaho, and Michigan, respectively) from 2011 to 2018.<sup>3</sup> New York was dropped from this analysis because of data availability issue.<sup>3</sup>

The empirical analysis focuses on two outcomes of interest: the number of new hires and the percent of black new teacher hires. To estimate a cause-and-effect relationship between edTPA and the teacher outcomes, we employed a synthetic control method to compare the outcomes in edTPA states versus that in neighboring non-edTPA states before and after the implementation of edTPA (Abadie and Gardeazabal, 2003; Abadie et al., 2010). The idea of this statistical technique is to construct a counterfactual for each school district in an edTPA state using a weighted average of school districts in the neighboring non-edTPA state, which ensures we are comparing similar school districts. To ensure the counterfactual offers a valid comparison, we use important indicators that predict teacher new hires. The covariates include pre-edTPA hiring, school and student characteristics (enrollment, percent of black students, attendance rate, teacher-to-student ratio, total teacher count, percent of teachers with a master's degree, and percent of black teachers).<sup>4</sup>

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<sup>3</sup> New York State Education Department tracks district-level hiring only starting from 2014.

<sup>4</sup> District-level school and student characteristics are also obtained from the state education departments.

Before showing the estimation results, we first visualize the trends in new teacher hires across states using raw data. In the top-left figure of Figure 1, we compare the total new hires from 2011 to 2018 in Washington with that in Idaho. While the new hiring in both states exhibits an upward trend, there was a structural break in the school year 2014-2015, which is the first year Washington integrated edTPA into their licensure system. Since 2015, the number of new hires in Washington did not grow, as opposed to the continuous upward trend of new hires in Idaho. In the top-right figure of Figure 1, we also observe a similar pattern for Georgia, where its number of new hires stopped growing after the implementation of edTPA in 2015 as opposed to the steady upward trend in Florida. The experience in Wisconsin was more drastic. As shown at the bottom of Figure 1, there was a sudden drop in the number of new hires in Wisconsin after 2017 as opposed to the steady upward trend throughout the sample period in Michigan.

**Figure 1 : EdTPA Reduced New Teacher Hires in Georgia, Washington, and Wisconsin**

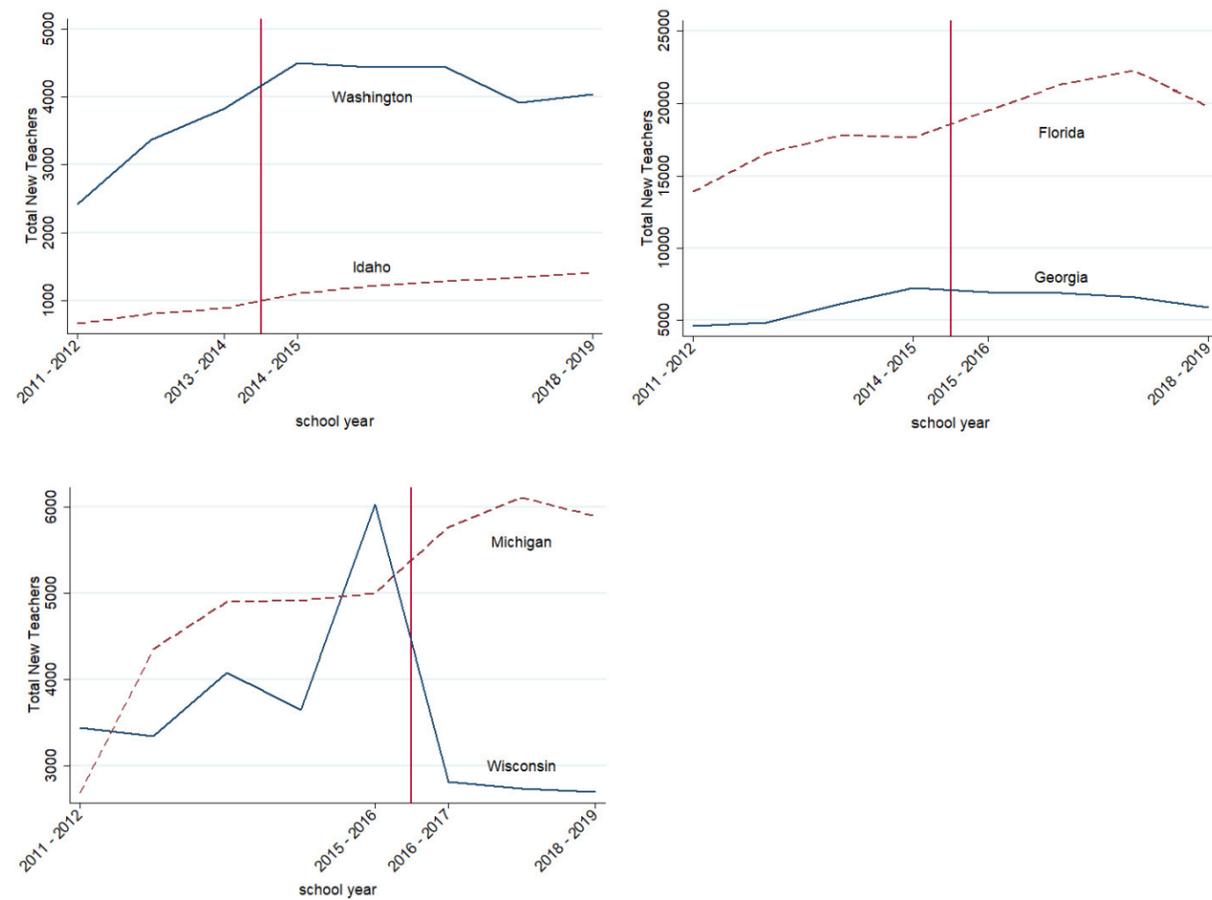


Table 1 presents the results from the synthetic control estimation. For Washington, edTPA on average reduced new hires by 21.6%. The effect of edTPA on new hires was small (-2.93%) in the first policy year, but the magnitude grew in the subsequent years. The estimates also become statistically significant starting from 2017. The effect of edTPA on new hires in Georgia is larger with an average magnitude of -58.6% since its implementation in 2015. The effect in Wisconsin is also larger relative to Washington with an average magnitude of -43.8%. The reduction in new hires caused by edTPA consistently shows up in all three early edTPA states.

We also found some evidence that edTPA reduced black representation among new hires. As shown in Table 1, the reduction primarily occurs in Georgia with a magnitude between -1.6 and 5.4 percentage points. The estimates for Washington and Wisconsin are imprecise, mainly due to its small black population.

Table 1 : Causal effect of edTPA on teacher shortage					
Outcomes	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
Washington					
New Hire (%)	-2.93	-18.1	-16.5	-31.8***	-38.9***
% of Black	-0.084	-1.431	-0.298	-0.736	-0.46
Georgia					
New Hire (%)	-	-53.3***	-45.9***	-54.2***	-80.9***
% of Black	-	-2.742***	-1.594***	-5.373***	-2.341***
Wisconsin					
New Hire (%)	-	-	-29.7**	-38.8***	-63.0***
% of Black	-	-	1.350	0.080	-2.357

Data: School district hiring data from the state education departments.  
 Note: This table presents the synthetic control estimates for the three edTPA states.

In addition to the shortage and diversity problems faced by school districts, we pooled the degree completion data from the Integrated Postsecondary Education Data System (IPEDS) to examine the effect of edTPA on teacher supply. An advantage of IPEDS over the school district hiring data is that it is a central database containing the graduation data of all US tertiary institutions. This solves the data availability issue that enables us to include New York and Illinois, which were left out in the above analysis. The IPEDS data also provides an alternative source to validate our result on teacher hiring. Our sample in IPEDS covers degree graduates from 2011 to 2019 who majored in education.<sup>6</sup> We restricted the sample to institutions offering 4-year undergraduate training for prospective PreK-12 teachers.

To estimate a causal effect, we employed a difference-in-differences (DID) regression model, comparing the number of teacher degree awarded in the edTPA states and that in other states before and after the implementation of edTPA.<sup>5</sup> In addition to institution and year fixed effects, we control for time-varying confounding factors such as the change in student and institution characteristics. The control variables are the SAT and ACT submission rates of students, the 75th percentile score of the SAT and ACT scores, full-time enrollment, part-time to full-time faculty ratio, the total dollar amount of student grants and loans, and the percent of students receiving government grants or loans. To also capture also institution-specific trends in graduation, we control for the characteristics (total number and percent of black) of graduates in non-education majors. By adding these variables into the statistical model, we ensure that the identified effect on teacher supply can be solely attributed to the implementation of edTPA.

Column 1 of Table 2 presents the results from the DID model. The coefficient shows that edTPA reduced the number of graduates in education majors by 17.8%. From Column 2 to 4, we explore the heterogeneity by institution quality according to the admission score of SAT or ACT. In Column 2, we define an institution as “selective” if its 75th percentile SAT verbal score ranks at the top quartile among the sampled universities. The same procedure applies to Column 3 and 4 where the criteria changes to 75th percent SAT mathematics and ACT cumulative scores, respectively. In all three columns, the interaction terms are either insignificant or marginally significant. Therefore, we cannot conclude that there exists a strong heterogeneous effect across institution type.

We then examine the effect of edTPA on black representation among graduates majoring in education. Column 1 in Table 3 shows that edTPA reduced the black representation by 0.08 percentage points but the effect size is not statistically significant. From Column 2 to 4, we again explore possible heterogeneity across institution type. As the interaction terms in all three columns suggest, edTPA affects selective universities more in terms of the diversity issue. By combining coefficients, Column 2 shows that edTPA on average reduced black representation in a selective university by about 1.3 percentage points. This pattern is consistent with different definitions of selectivity in Column 3 and 4, where the effect sizes are -1.28 and -0.92 percentage points respectively. While Table 2 shows that all institutions in edTPA states experience a drop in new teacher graduates, Table 3 suggests that the reduction in black representation among teacher graduates mainly happens in selective universities.

Overall, using two different data sources, both analyses suggest that edTPA causes shortage and diversity issues in the teacher profession.

<sup>5</sup> We drop New Jersey because it implemented edTPA in September 2017.

**Table 2 : EdTPA reduced degree completion (education major)**

	(1)	(2)	(3)	(4)
edTPA	-0.178** (0.0676)	-	-	-0.188*** (0.0698)
edTPA*SelectiveUni(SAT verbal)	-	0.192*** (0.0670)	0.185*** (0.0689)	-
edTPA*SelectiveUni(SAT math.)	-	0.111* (0.0647)	-	-
edTPA*SelectiveUni(ACT)	-	-	-	0.128* (0.0688)
Constant	0.0457 (0.552)	0.220 (0.538)	0.224 (0.538)	0.216 (0.540)
Observations	8,611	8,337	8,337	8,337
R-squared	0.166	0.189	0.189	0.189
Number of university	1,063	1,000	1,000	1,000

Data: Integrated Postsecondary Education Data System (IPEDS), 2011-2019

**Note:** Dependent variable in all regressions is the (log) number of education graduates in an institution. The edTPA states include Georgia, Illinois, New York, Washington, and Wisconsin.

## Student Outcomes

In this section, we evaluate the casual effect of edTPA on student outcomes. Recall the intention of the edTPA is to improve teaching effectiveness of new teachers, the test score of their students then serves as an objective measure to quantify the benefit of the new licensure requirement.

To assess the effect of edTPA on student academic performance, we again adopt a difference-in-differences approach to compare the student test scores in the five edTPA states with that in non-edTPA states.<sup>6</sup> The student achievement data we analyze is the National Assessment of Education Progress (NAEP), which is administered by the U.S Department of Education and the Institute of Education Sciences. The assessment is nationwide in the US and provides a standardized yardstick for the academic achievement of a representative sample of students in various core subjects.

In our analysis, we utilize the restrict-use data on the mathematics scores of 4th grade students

<sup>6</sup> In the regressions, the control variables include student (race, ethnicity, gender, learning disabilities, lunch program participation), school characteristics (charter school, urban school, enrollment, percent of black and Hispanic students), state and year fixed effects. Standard errors are clustered at the state level.

**Table 3: The effect of edTPA on black representation (education graduates)**

	(1)	(2)	(3)	(4)
edTPA	-0.0822** (0.244)	0.609** (0.266)	0.578** (0.265)	0.342 (0.215)
edTPA*SelectiveUni(SAT verbal)	-	-1.935*** (0.510)	-	-
edTPA*SelectiveUni(SAT math.)	-	1.864*** (0.595)	-	-
edTPA*SelectiveUni(ACT)	-	-	-	1.257*** (0.311)
Constant	15.97** (6.625)	17.81*** (6.251)	17.82*** (6.254)	17.67*** (6.260)
Observations	8,611	8,337	8,337	8,337
R-squared	0.033	0.034	0.034	0.033
Number of university	1,063	1,000	1,000	1,000

Data: Integrated Postsecondary Education Data System (IPEDS), 2011-2019

**Note:** Dependent variable in all regressions is the percent of education graduates who are black in an institution. The edTPA states include Georgia, Illinois, New York, Washington, and Wisconsin.

and reading scores of students at grades 4 and 8, which are consistently reported biannually from 2009 to 2017.<sup>7</sup> In addition to detailed student and school characteristics, a valuable aspect of the data is the background information of the corresponding subject teacher. Using this detail, we can minimize the measurement error of the relevant sample by restricting to students whose teachers have fewer than two years of experience because edTPA only affects initial teacher issuance.

Column 1 of Table 4 presents the estimation results from the difference-in-differences model. For grade 4 students in Panel A and B, edTPA has negative impacts on both the mathematics and reading scores. The 4th grade students in edTPA states on average score 3.5 and 4.3 points lower than their counterparts in non-edTPA states, which is one-ninth and one-twelve of the standard deviation of the corresponding test score. Although the magnitude is small, the effect size is statistically significant. By contrast, in Panel C, edTPA has no impact on the reading score of 8th grade students.

<sup>7</sup> The restricted-use data also reports the mathematics scores of grade 8 students. However, it does not contain teacher experience and we cannot identify new teachers.

**Table 4: The effect of edTPA on students at different performance percentiles**

	(1)	(2)	(3)	(4)
	Quantile Regression			
	Mean	Bottom 10%	Median	Top 10%
<i>Panel A: Mathematics Score (Grade 4)</i>				
edTPA	-3.506** (1.552)	-1.986 (1.214)	-3.234*** (1.052)	-5.088*** (1.298)
Observations	57,140	57,140	57,140	57,140
<i>Panel B: Reading Score (Grade 4)</i>				
edTPA	-4.270*** (1.436)	-1.810 (1.680)	-3.558*** (1.246)	-5.276*** (1.290)
Observations	59,570	59,570	59,570	59,570
<i>Panel C: Reading Score (Grade 8)</i>				
edTPA	-0.140 (1.452)	1.273 (1.706)	1.096 (1.481)	-1.452 (1.540)
Observations	44,250	44,250	44,250	44,250

Data: Integrated Postsecondary Education Data System (IPEDS), 2011-2019

**Note:** Dependent variable in all regressions is the percent of education graduates who are black in an institution. The edTPA states include Georgia, Illinois, New York, Washington, and Wisconsin.

From Column 2 to 4 of Table 4, we estimate the difference-in-differences specification using quantile regressions. The idea is to see if the effects of edTPA differ by students at different performance percentiles. In Column 2, all the three panels consistently show that edTPA has insignificant impacts on the test scores of low-performing students (the 10th performance percentile). The magnitudes are also less negative compared to Column 1, suggesting that the negative effect identified by the mean regression is mainly driven by higher-performing students. This is confirmed by Column 3 and 4, which show that the negative impacts increase with the performance percentile, especially for 4th grade students in Panel A and B.

## Conclusion

This report examines the effect of edTPA on teacher supply and student performance in early edTPA states using national representative datasets. We find that edTPA reduced new teacher hires and the number of graduates majoring education. We also find evidence that edTPA reduced black representation among new teachers. This is alarming to the existing racial disparity in academic achievement because minority teachers generate significant role model effects for minority students. Importantly, for student performance, contrary to the intention of edTPA, we find that edTPA had a negative impact on the academic performance of students, particularly for higher-achieving students.

The findings of this report reaffirm our policy suggestion in earlier reports that the Illinois State Board of Education (ISBE) should reconsider the mandatory role of edTPA in the Illinois teacher licensure system. Effective beginning in the summer of 2020 Georgia and Wisconsin removed their edTPA requirements. Their experience provides valuable guidance for ISBE in reforming its teacher licensure system to address teacher shortage and diversity concerns among new teachers.

## References

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