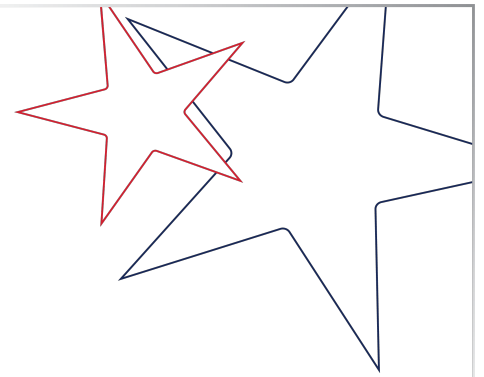


# EFFECTS OF THE PERFORMANCE-BASED LICENSURE (PBL) PILOT



## Executive Summary

During the 2019-2020 school year the Mississippi Department of Education (MDE) launched a nationally unprecedented performance-based licensure (PBL) pilot program whereby select candidates could assume a position as a full-time teacher with a special, non-renewable license. Instead of focusing on how the *candidate* performs on teacher licensure exams, the PBL pilot looked at how the candidate's *students* demonstrate growth on state assessments as a measure of teacher effectiveness.

Districts nominated promising educators with a track record of success fulfilling other instructional roles (e.g., long-term substitute, non-renewable licensed teacher, teacher assistant, etc.) to be in the PBL program. Districts also selected a comparison teacher for each PBL candidate. All initial comparison teachers held a standard, renewable license acquired by passing all required licensure tests and other criteria. Districts subsequently identified emergency and other non-renewable licensed teachers as the true comparison teachers, so they were included in the study as well. Whenever possible, comparison teachers worked in the same school, grade, and subject as the PBL candidate. Eight districts participated in the three-year pilot, with 126 total PBL educators.

From the start of the pilot, MDE partnered with researchers at Brown and Harvard University as the initiative's external evaluators. The researchers examined how students of PBL candidates performed on state standardized tests compared to (1) the students of traditionally-certified teachers selected at the outset of the pilot to serve as the "PBL comparison" group, (2) the students of teachers in other classrooms in the same school, grade, and subject, and (3) the students of teachers with emergency licenses. The study was designed so that observed differences in students' test scores between PBL candidates and teachers in comparison groups (1) and (2) could be attributed to the PBL candidates themselves, not simply differences in student assignment. The third comparison group was included because, according to district superintendents, the vacancies would likely be filled with emergency-certified teachers if not for the PBL pilot. In January 2023, initial evaluation findings were shared with the Mississippi State Board of Education.

These and subsequent findings conclude:

1. Students assigned to PBL candidates perform as well as students assigned to teachers in comparison groups on state assessments.
2. Students of PBL candidates have fewer absences than students of comparable teachers.
3. PBL candidates have higher educator effectiveness scores than comparable teachers.



## Methods

### Estimating Effects

Researchers aimed to estimate how students of PBL candidates performed compared to students of similar teachers. They estimated PBL effects using simple ordinary-least squares (OLS) regressions. The key outcomes were student test scores, absence rates, and Professional Growth System (PGS) scores in 2020-21 and 2021-22. In essence, their analysis compared the test scores or absence rates of PBL candidates' students and comparison teachers' students, while accounting for other important predictors of student success. They also included controls for student demographics such as gender, race/ethnicity, special education designation, and English language learner designation while controlling for students' previous test scores or absence rates when available. Test scores were standardized by grade, subject, and year, such that the average score was zero and the standard deviation was one.

### Comparison Groups

One key consideration in estimating PBL effects was determining which teachers to use as the appropriate comparison group. All PBL candidates had selected comparison teachers based on initial PBL programmatic requirements, but researchers found that these teachers may be stronger performers than the “true” counterfactual – that is, *the individual a district would hire to fill a vacant teaching position in the absence of the PBL program*. Therefore, they interviewed superintendents in PBL districts to ask about the “true” counterfactual: who would be in PBL classrooms in the absence of the PBL program? Superintendents suggested these vacancies would usually be filled by individuals with out-of-field certifications or special non-renewable (emergency) licenses, if filled at all.

This information led them to study two different comparison groups for PBL candidates:

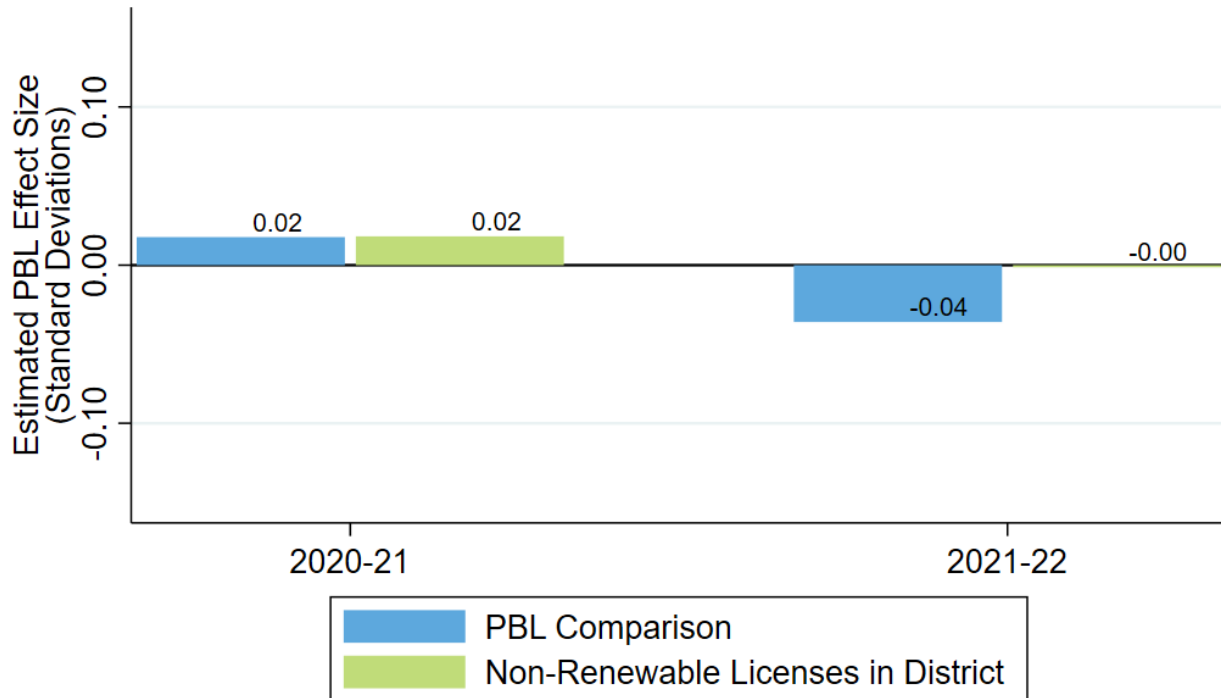
- (1) Their initial district-selected, program-designated comparison teachers
- (2) Teachers with other non-renewable licenses working in the same district

## Results

**On average, PBL candidates perform on par with comparable teachers working in similar schools in similar teaching positions.** These findings hold true across both comparison groups and both outcomes: student test scores and absence rates. There is also suggestive evidence of a small, positive effect of being assigned a PBL candidate on student attendance. Students of PBL candidates are absent roughly 1 fewer day than students of comparable teachers, and this difference is marginally statistically significant ( $p=0.16$ ).



## Estimated Effects on Standardized Test Scores



Ns for each estimate, from left to right. Note that students can have multiple test scores, so there are more observations than students.  
 N1: 4,319 observations, 3,495 students, 58 teachers (30 PBL and 28 comparison)  
 N2: 14,372 observations, 10,724 students, 224 teachers (29 PBL and 195 comparison)  
 N3: 6,105 observations, 4,705 students, 86 teachers (45 PBL and 41 comparison)  
 N4: 12,517 observations, 9,850 students, 200 teachers (39 PBL and 161 comparison)

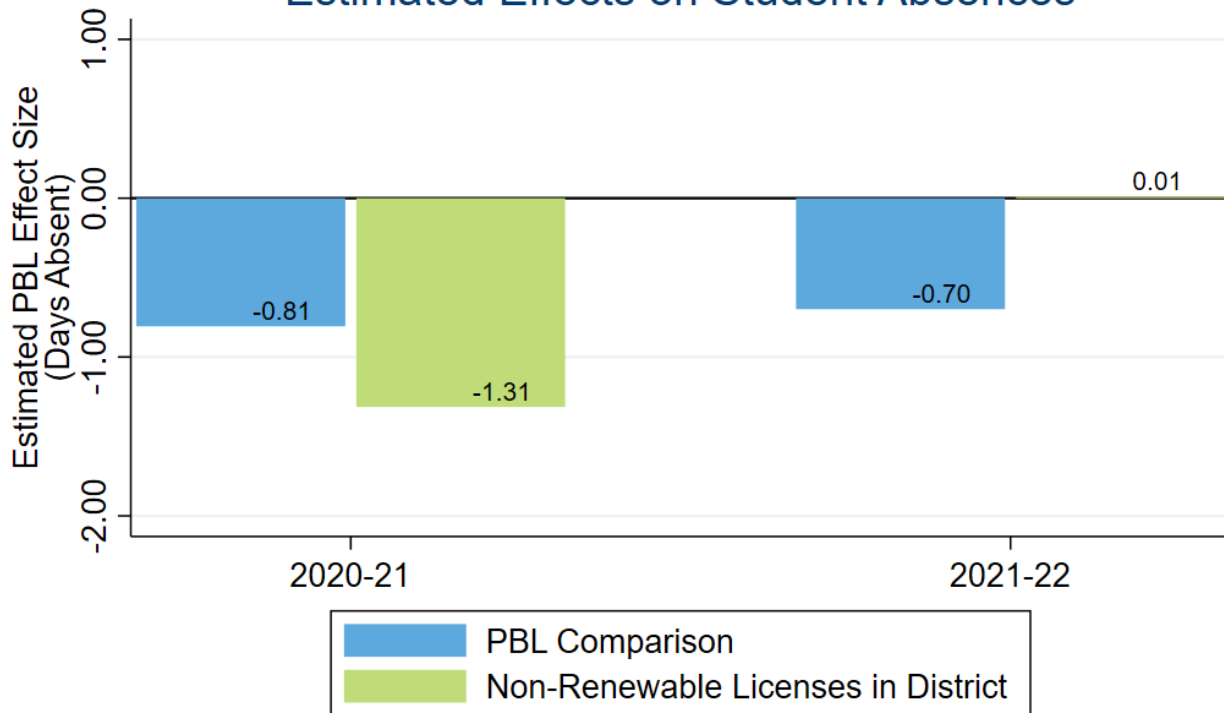
When looking at MAAP assessment scores, students assigned to PBL candidates perform about the same as students assigned to comparable teachers, across both years and comparison groups. On average, students assigned to PBL candidates performed roughly 0.02 standard deviations higher than students assigned to both their program-designated comparison teachers and to teachers with non-renewable licenses in 2020-21.

In 2021-22, students assigned to PBL candidates scored roughly 0.04 standard deviations below students assigned to program-designated comparison teachers and less than 0.01 standard deviations below students of teachers with non-renewable licenses. **All of the estimated effect sizes on test scores are small – less than one-twentieth of a standard deviation – and none of them are statistically distinguishable from zero**, which again indicates PBL candidates are performing as well as similar teachers despite not going through the traditional licensure process.

Looking beyond test scores, there is suggestive evidence that students assigned to PBL candidates may attend class more often than students assigned to comparable teachers. On average, students of PBL candidates were absent 0.81 fewer days than students of program-designated comparison teachers in 2020-21, and 0.70 fewer days in 2021-22. PBL candidates' students were also absent roughly 1.3 fewer days than students of teachers with non-renewable licenses in 2020-21, but roughly the same amount of days in 2021-22.



## Estimated Effects on Student Absences



Ns for each estimate, from left to right:  
 N1: 5,819 students, 166 teachers (91 PBL and 75 comparison)  
 N2: 22,212 students, 684 teachers (84 PBL and 600 comparison)  
 N3: 7,564 students, 196 teachers (109 PBL and 87 comparison)  
 N4: 24,797 students, 657 teachers (99 PBL and 558 comparison)

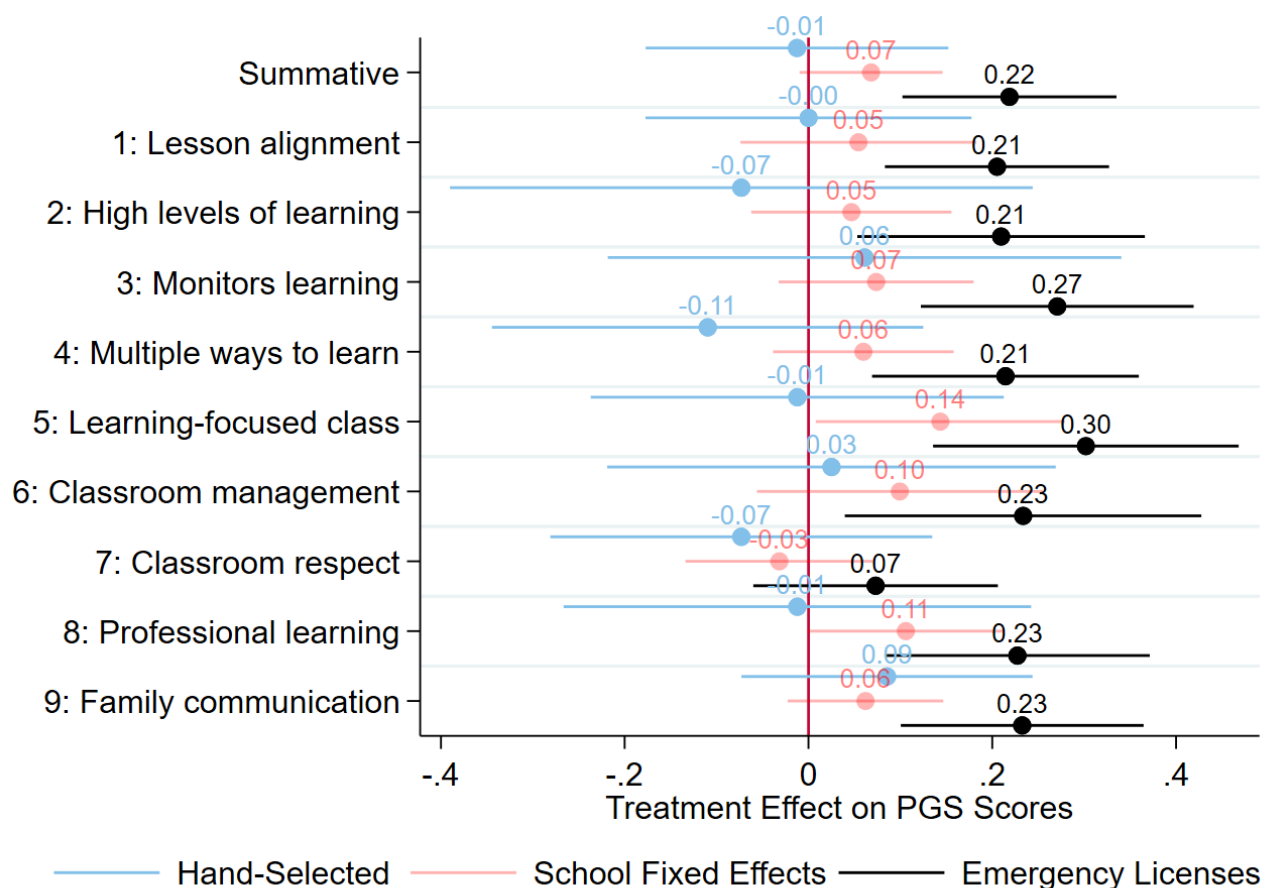
The 0.70 and 1.3 estimates are marginally statistically significant (p-values of roughly 0.16). **This evidence is suggestive that there is a real difference in attendance rates between students of PBL candidates and comparable teachers.**

As a final measure of teacher effectiveness, researchers analyzed educator effectiveness scores as assessed by administrators during summative Professional Growth System (PGS) observations. **On average, PBL candidates perform: (1) on par with comparison teachers with a standard, renewable license acquired by passing required licensure tests, (2) better than other teachers in the same school with a marginally statistically significant difference in scores (p=0.086), and (3) much better than emergency and other non-renewable licensed teachers with a statistically significant difference in scores (p<0.001).**

Tellingly, these trends hold across domains one and two of the Mississippi Teacher PGS rubric. This is an important finding as the standards within these domains most closely reflect the content knowledge typically assessed in teacher licensure tests. This finding also refutes the assumption that positive differences in PGS scores between PBL candidates and comparison teacher are largely explained by standards related to classroom management.



## Estimated Effects on PGS Scores



Together, these results present convincing evidence that Mississippi students are no worse off in classrooms led by PBL candidates. **Evidence instead suggests that PBL candidates may improve student attendance and access to effective educators in Mississippi.**

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