Is Teaching Enough? The Impact of Effective Teachers on Student Performance in High Poverty-Schools in New Jersey

Randy R. Miller

Department of Public Policy & Administration
Rutgers, the State University of New Jersey

Teachers influence students' learning more than any other school-based factor.[1] Those who are most effective are likely to leave the schools that need them the most.[2] The schools that need effective teachers the most are low-performing school districts. Such districts tend to be located in high-poverty communities.

Many schools serving America's neediest children lose over half of their teaching staff every five years.[3] The odds that low-income children will be taught by inexperienced teachers are now higher than ever before.[4]

With that said, conventional wisdom would suggest that effective teaching is a would-be cure-all for securing academic achievement in schools, particularly schools with a highly concentrated population of students of color or low-income students. Such schools contend with a multitude of challenges in addition to a lack of effective teachers.

However, teachers influence students' learning more than any other school-based factor—effective teaching all the more. New empirical work has reinforced James Coleman's *Equality of Educational Opportunity* report conclusion that teacher quality is the most important schooling variable.[5]

The quality of the teacher workforce in the United States is of considerable concern to education stakeholders and policymakers. Numerous studies show that student academic success depends, in no small part, on access to high-quality teachers.[6] The desire for effective teaching in schools is seen nationwide. However, special attention has been paid to the

[1] McCaffrey, D., D. Koretz, J. R. Lockwood, and L. Hamilton. *Evaluating Value-Added Models for Teacher Accountability.* Santa Monica: RAND, 2004. Rivkin, S. G., E. A. Hanushek, and J. F. Kain. "Teachers, Schools, and Academic Achievement." *Econometrica* 73 (2005): 417-458.
[2] Boyd, D., H. Lankford, S. Loeb, and J. Wyckoff. "Explaining the Short Careers of High-Achieving Teachers in Schools With Low-Performing Students." *American Economic Review* 95 (2005): 166-171. Allensworth, E., S. Ponisciak, and C. Mazzeo. *The School Teachers Leave: Teacher Mobility in Chicago Public Schools.* Chicago: Consortium on Chicago School Research-University of Chicago, 2009. Goldhaber, D., and M. Hansen. "National Board Certification and Teachers' Career Paths: Does NBPTS Certifications Influence How Long Teachers Remain in the Profession and Where Can They Teach?" *Education Finance and Policy* 4 (2009): 229-262.

[3] Allensworth, E., S. Ponisciak, and C. Mazzeo. *The School Teachers Leave: Teacher Mobility in Chicago Public Schools.* Chicago: Consortium on Chicago School Research-University of Chicago, 2009. Hemphill, C., and K. Nauer. *The New Marketplace: How Small-School Reforms and School Choice Have Reshaped New York City's High Schools.* New York: Center for New York City Affairs, The New School for Management and Urban Policy, 2009.
[4] Ingersoll, R. M., and L. Merrill. *Seven Trends: The Transformation of the Teaching Force.* Philadelphia: Consortium for Policy Research in Education, 2012. Rice, J. K. "Learning from Experience? Evidence on the Impact and Distribution of Teacher Experience and the Implications for Teacher Policy." *Education Finance and Policy*, 2013: 332-348.
[5] Goldhaber, D. "In Schools, Teacher Quality Matters Most." *Education Next* 16, no. 2 (2016): 56-62.
[6] Goldhaber, D., and J. Walch. "Gains in Teacher Quality." *Education Next* 14, no. 1 (2014): 38-45.

need for effective teaching in districts that serve low-income students and/or students of color.

Research has shown that low-income students and students of color are more likely than their higher income and White counterparts to be taught by an ineffective teacher.[7] Low-income students and students of color, in many cases, tend to be one in the same: they attend high-poverty schools in high-poverty areas. According to Reardon, Robinson, & Weathers, in about half of the largest 100 cities, most African American and Latino students attend schools where at least 75 percent of all students qualify as poor or low-income under federal guidelines.[8]

Where students attend school and who teaches them matters. The disparity between the caliber of teacher found in a high-poverty or high-minority school and that of a teacher found in a low-poverty or low-minority school has a massive impact on student achievement.[9] The data show similar results for the highest-poverty versus lowest-poverty schools.[10]

Data across states show that low-income and minority students are saddled with disproportionate numbers of inexperienced teachers that have taught for three or fewer years.[11] For example, In Tennessee, 23.8% of teachers in high-poverty and high-minority schools are rated "least effective," while only 16% of staff at low-poverty and low-minority schools fall into this category.[12]

White students are more concentrated in suburban schools, whereas students of color are more concentrated in urban schools.[13] Although there are several definitions of what constitutes urban schools,[14] they are typically classified by "highs" and "lows."[15] These "highs" and "lows" require in-coming teachers to have a set of skills that empower them to teach students in spite of the "highs" and "lows." However, school leaders often struggle with finding high-quality teachers who are prepared to address the challenges often presented in urban schools.[16]

Purpose and Impetus

The purpose of this study was to identify if a casual and statistically significant relationship exist among high performing schools and high performing teachers in the high-poverty schools in the state of New Jersey. More specific, this study will explore if any relationship ex-

[7] The Education Trust. *Fact Sheet - Teacher Equity.* February 9, 2016. https://edtrust.org/wp-content/uploads/Ed%20Trust%20Facts%20on%20Teacher%20Equity.pdf.

[8] Reardon, S.F., Robinson, J.P., & Weathers, E.S. (Forthcoming). Patterns and Trends in Racial/Ethnic and Socioeconomic Academic Achievement Gaps. In H. A. Ladd & E. B. Fiske (Eds.), *Handbook of Research in Education Finance and Policy (Second ed.).* Lawrence Erlbaum.

[9] The Education Trust. *Fact Sheet - Teacher Equity.* February 9, 2016. https://edtrust.org/wp-content/uploads/Ed%20Trust%20Facts%20on%20Teacher%20Equity.pdf.

[10] White, B. R., and J. B. and DeAngelis, K. J. Presley. *Leveling Up: Narrowing the Teacher Academic Capital Gap in Illinois.* Edwardsville: Illinois Education Research Council, 2008.

[11] The Education Trust. *Fact Sheet - Teacher Equity.* February 9, 2016. https://edtrust.org/wp-

content/uploads/Ed%20Trust%20Facts%20on%20Teacher%20Equity.pdf.

[12] Tennessee Department of Education. *Tennessee's Most Effective Teachers: Are They Assigned to the Schools That Need Them Most?* Nashville: Tennesee Department of Education, 2007.

[13] Aud, S., M. A. Fox, and A. KewalRamani. *Status and Trends in the Education of Racial & Ethnic Groups.* Washington D.C.: National Center for Educational Statistics, 2010.

[14] Milner, H. R. "But What is Urban Education?" *Urban Education* 47 (2012): 556-561.

[15] Reed, L. C., and R. Swaminathan. "An Urban School Leader's Approach to School Improvement: Towards Contextually Responsive Leadership." *Urban Education* 51 (2016): 1096-1125.

[16] Teemant, A. "A Mixed-Methods Investigation of Instructional Coaching for Teachers of Diverse Learners." *Urban Education* 49 (2013): 574-604.

ists between (1) teacher effectiveness and academic achievement in high-poverty schools in New Jersey, and (2) teacher effectiveness and college and career readiness in high-poverty schools in New Jersey.

The impetus for this study was the lack of research concerning the quantitative measures of teacher effectiveness impact on academic achievement and college- and career-readiness in high-poverty schools. The relationship between poverty and education cannot be denied.

> Low-income children start at a disadvantage, in comparison to students who are not low-income, at the start of pre-primary education. Powerful evidence of the link include the fact that 46 percent of Americans who grew up in low-income families but failed to earn college degrees stayed in the lowest income quintile, compared to 16 percent for those who earned a college degree. Less than 10 percent of school revenue comes from the federal government while about 90 percent comes from the state and local governments; as a result, school funding varies from state to state, and funding within a state also tends to be unequal.[17]

As one example, New Jersey has had numerous bouts to reform school funding inequities between the state Department of Education and advocates on behalf of the state's 30 poorest districts—referred to as Abbott Districts.[18]

Under New Jersey school funding law, the state is obligated to provide a thorough and efficient education to special needs districts with a high level of educational opportunity that will enable them to compete successfully with other public school students.[19] School-funding legislation under the Abbott guidelines matter in light of a Legal Services of New Jersey study that showed that more New Jersey residents live in poverty now than in the past five decades, and the outlook for the future is bleak.[20] According to Legal Services of New Jersey, 2.8 million adults and 800,000 children lived poverty in 2014. As of the conclusion of the 2013-2014 school year, New Jersey educated a total of 1.3 million students.[21] It is plausible to conclude that over half (58.3%) of New Jersey students educated during the 2013-2014 school year lived in poverty.

Methods

The desire of this study is to test for a causal and statistically significant relationship. To achieve that end, quantitative data was used to test for the sought after relationship between teacher effectiveness scores for New Jersey teachers as was reported by individual high-poverty schools and academic achievement scores and college- and career-readiness scores as reported by individual high-poverty schools. Data for this study comes from three sources: (1) the U.S. Census American FactFinder (CAFF), (2) the New Jersey Department of Ed-

[17] Friedman, H. S. "America's Poverty-Education Link." *Huffington Post.* August 28, 2012. http://www.huffingtonpost.com/howard-steven-friedman/americas-poverty-education_b_1826000.html.
[18] Walker, E. M., and D. Gutmore. "The Issue of Civic Capacity in Urban Education Reform: The Case for New Jersey's Thirty Poorest Districts." *The Journal of Negro Education* 71 (2002): 60-76.

[19] Martin, R. J. "Charter School Accessibility for Historically Disadvantaged Students: The Experience in New Jersey." *St. John's Law Review* 78 (2004): 327-395.
[20] Spoto, MaryAnn. *Record number of N.J. residents living in poverty, study finds.* November 15, 2015. http://www.nj.com/news/index.ssf/2015/11/record_number_of_nj_residents_in_poverty_study_fin.html.
[21] According to the NJ Department of Education, 1,371,399 students were enrolled in the 2013-2014 school year.

ucation (NJDOE), and (3) the 2013-14 Civil Rights Data Collection (CRDC).

According to its website, the CAFF provides access to data about the United States, Puerto Rico and the Island Areas. The data in CAFF come from several censuses and surveys. Information on the poverty percentages was taken directly from the 2011-2015 American Community Survey 5-Year Estimates. From this database was gathered the top ten high-poverty municipalities in New Jersey. Those cities include (not in any order) City of Newark, Passaic City, Salem City, Bridgeton City, Camden City, Lakewood Township, City of New Brunswick, Atlantic City, Paulsboro Borough and the City of Asbury Park.[22]

The NJDOE provides data about New Jersey schools, both public and charter. NJDOE data re orts include information on enrollment, dropouts, certificated staff (e.g. teachers, guid-

ance counselor and principals), non-certificated staff (e.g. custodians, office managers and maintenance), adjusted cohort graduation rates, staff evaluation, school performance, statewide assessment and special education data.[23]

The focus of this study is the NJDOE's data on staff evaluation for the 2013-2014 school year, for each school within the highest poverty districts, as per Table 1. Also of focus is the statewide percentile score in the areas of academic achievement and college- and career-readiness for each school within the highest poverty districts, as per Table 1. The NJDOE requires all school districts to provide statistics on the number of faculty members graded as (1) ineffective, (2) somewhat effective, (3) effective and (4) highly effective for each school within the district.

The NJDOE also requires all school districts to provide metrics that are used to account for yearly performance, then expressed as a percentile score for academic achievement

Table 1

Top Ten Municipalities with the Highest Poverty Rates[1]

Municipality	Poverty Rate	Poverty Rate Among Children
Camden City	39.9%	51.2%
Salem City	39.6%	47%
Lakewood Township	32.1%	39.8%
Atlantic City	36.9%	47.9%
City of Asbury Park	31.9%	50.2%
Paulsboro Borough	33.8%	66%
City of New Brunswick	34.7%	38.6%
Bridgeton City	32%	42.8%
Passaic City	31.6%	40.2%
City of Newark	29.7%	39.2%

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[22] Schools in the City of Newark were not used for this study due to the lack of data. Paterson City (ranked 11th) was used in Newark's place for this study. Paterson has a poverty rate of 29.1% (39.5% for children ages 5 to 17). Please see the limitations section for more information.

[23] For more information, see
http://www.state.nj.us/education/data/fact.htm.

and college and career readiness.[24] Schools districts that did not report particular metrics or no data at all for their schools informed the NJDOE they have certified inaccurate data, therefore data filed by the state of New Jersey does not match local personnel records. There are percentile scores to account for peer school [25] comparisons and statewide school comparisons.

The percentage of teachers who were categorized as "effective" or "highly effective" are labeled (EFF), the academic achievement statewide percentile score is labeled (AAST), and the college and career statewide percentile score is labeled (CCST). The AAST and CCST metrics were taken from the NJDOE NJ

Table 2

Means and Proportions on All Variables Used in Analysis

Variable	Obs.	Mean	Std. Dev.	Min.	Max
AAST	121	14.5455	16.1147	0	97
CCST	121	24.2727	19.3679	0	82
PERBLK	121	31.5438	23.6553	0.7	85.8
PERHIS	121	60.3669	24.0635	5.4	99.3
FPRL	121	89.7975	11.5359	0	99
DIS	121	16.4017	7.42984	2.8	47.8
LEP	121	17.8413	16.5554	0	81.7
FIRST	121	6.00579	5.97766	0	41.6
SECOND	121	5.2719	5.50999	0	26.7
RATIO	121	11.1118	2.71397	4.09	18.8
BLKOSS	121	42.8298	27.271	0	100
HISOSS	121	43.5744	26.9751	0	100
EFF	115	83.5165	12.7594	35.4	100

[24] According to the New Jersey Department of Education (NJDOE), Academic Achievement measures the content knowledge students have in language arts literacy and math. According to the NJDOE, College and Career readiness measures the degree to which students are demonstrating behaviors that are indicative of future attendance and/or success in college and careers.

[25] According to the New Jersey Department of Education (NJDOE), peer schools are schools that have similar grade levels and students with similar demographic characteristics, such as the percentage of students qualifying for Free/Reduced Lunch, Limited English Proficiency programs or Special Education programs.

School Performance Report[26] data set.

The statewide percentiles were used rather than the peer percentiles because the peer percentile only offers a comparison to similar schools. While there is a value to finding out how peer schools relate to each other, the peer

[26] "The New Jersey Department of Education (NJDOE), School Performance Reports are designed to inform parents, educators and communities about how well a school is performing and preparing its students for college and careers" (https://homeroom5.doe.state.nj.us/pr/).

percentile does not reflect an accurate metric when tested against another statewide metric, i.e. teacher effectiveness. The teacher effectiveness metric is not a metric according to peer-wide standards and measures, but statewide standards and measure. It is believed that maintaining consistent with statewide metrics in this case offers a more level study.

The 2013-14 CRDC is a survey of all public schools and school districts in the United States.[27] The CRDC include 16,758 school districts (99.2% of all school districts) and 95,507 public schools (99.5% of all public schools). The CRDC measures student access to courses, programs, instructional and other staff, and resources—as well as school climate factors, such as student discipline and bullying and harassment. All of these impact education equity and opportunity for students.[28]

The focus of this study is the CRDC's data on a number of variables gathered from CRDC's data that will serve as controls when examining the relationship between teacher effectiveness and academic achievement and college and career readiness. The CRDC's data on school discipline is to provide information that answers the following: compared to overall enrollment, what is the race/ethnicity of students receiving in-school suspensions, out-of-school suspensions, or expulsions?

Due to the underwhelming reporting of student expulsions and in-school suspension by the vast majority of New Jersey public school districts, the metrics of use in this study are out-of-school suspensions. Of focus in those metrics are the percentages of Latino students in New Jersey who received out-of-school suspensions (HISOSS) and African-American students in New Jersey who received out-of-school suspensions (BLKOSS).

Other metrics used from the CRDC are the percent population of African-American students within a school district (PERBLK), the percent population of Latino students within a school district (PERHIS), the percentage of students in a school district who received free or reduced lunch (FRPL), the percentage of students who are limited language proficient (LEP), the ratio of students to one teacher (RATIO), the percentage of second-year teachers within a school district (SECOND), the percentage of first-year teachers within a school district (FIRYR), and the percentage of students with either an IEP or 504 plan within a school district (DIS).

The entire top ten of municipalities with the highest poverty rates did not report data with respect to the CRDC. Newark Public Schools did not report any data to the CRDC. To achieve a sample size of over 100 schools, the 11th ranked municipality for poverty, Paterson City, New Jersey, was chosen. From the list expressed in Table 1, plus Paterson City, the samples chosen came from the schools from the municipality's school district.

Of those school districts,[29] this study selected all available schools with reported data to both the CRDC and the NJDOE. Both AAST and CCST served as the dependent variables in

[27] U.S. Department of Education Office of Civil Rights. *A First Look: Key Data Highlights on Equity and Opportunity Gaps in our Nation's Public Schools.* Government Report, Washington D.C.: U.S. Department of Education, 2016.
[28] U.S. Department of Education Office of Civil Rights. *A First Look: Key Data Highlights on Equity and Opportunity Gaps in our Nation's Public Schools.* Government Report, Washington D.C.: U.S. Department of Education, 2016.

[29] According the NJDOE, the total number of public school districts in New Jersey, as of the 2015-2016 school year, are 599 (only 586 school districts are operating districts). This number does not include charter schools (there are 89 charter school district operating in New Jersey). Information on the total number of public school districts in New Jersey, as of 2013-2014 school year (the year data was collected for the sample), is not available. It is reasonably believed that the 2013-2014 numbers of districts do not stray far from the 2015-2016 numbers of districts. For more information, see http://www.state.nj.us/education/data/fact.htm.

a series of regression tests. The metric EFF served as independent variable in a series of regressions tests. In all, two regressions test were conducted to find if there was a causal relationship of significance EFF and AAST and CCST in high-poverty schools in New Jersey.

For each regression test, I controlled for the following variables: PERBLK, PERHIS, FRPL, DIS, LEP, FIRYR, SECOND, RATIO, BLKOSS and HISOSS. PERBLK, PERHIS and FRPL are used because those variables are what make up urban schools: low-income students and students of color. In almost all major American cities, most African American and Hispanic students attend public schools where a majority of their classmates qualify as poor or low-income.[30]

According to the National Center for Children in Poverty, chronic absenteeism is defined as a particular student missing 10% or more of school days, equaling about a month within a 180-day academic year.[31] A recent study estimates as many as 7.5 million students nationally are chronically absent each year.[32] Chronic ab-

senteeism is also associated with poverty. Children living in poverty are 25% more likely to miss three or more days of school per month compared to more students from higher economic backgrounds.[33] Lower-income and students of color are at a greater risk for health problems and subsequent absenteeism.[34]

The disciplinary response to absenteeism too often includes loss of course credits, detention, and suspension.[35] Exclusionary discipline is utilized in schools as a method to correct misbehavior from students. With a teaching force nationwide that is predominately white and female,[36] the possibility of cultural mismatch or racial stereotyping as a contributing factor in disproportionate office referral cannot be discounted or ignored.[37]

First year and second year teachers face various challenge when they enter the classroom. 85% of teachers in New Jersey are white. It is plausible to assert that higher percentages of first-year teachers entering New Jersey classrooms will be white. They must negotiate a plethora of tasks simultaneously, even as they are acquiring the skills necessary to perform those tasks.

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[30] Boschma, J., and R. Brownstein. "The Concentration of Poverty in American Schools." *The Atlantic*, 2016: https://www.theatlantic.com/education/archive/2016/02/concentration-poverty-american-schools/471414/. The economic segregation facing African American and Hispanic students represents the convergence of many trends, including the stubbornly high rates of childhood poverty since the Great Recession; persistent patterns of housing segregation in many major cities; the increasing economic polarization in many metropolitan areas that has resulted in more residents living either in affluent or poor neighborhoods, and fewer residing in middle-income communities; and the general retreat from efforts to promote racial or economic integration in the schools.

[31] Henderson, Tia, Caitlin Hill, and Kerry Norton. *The Connection Between Missing School and Health: A Review of Chronic Absenteeism and Student Health in Oregon.* Portland: Upstream Public Health, 2014.

[32] Balfanz, R., and V. Byrnes. *The Importance of Being There: A Report on Absenteeism in the Nation's Public Schools.* Baltimore: Johns Hopkins University School of Education, 2012, 1-46.

[33] National Center for Education Statistics. *The Condition of Education.* Washington D.C.: U.S. Department of Education, 2006.

[34] Henderson, Tia, Caitlin Hill, and Kerry Norton. *The Connection Between Missing School and Health: A Review of Chronic Absenteeism and Student Health in Oregon.* Portland: Upstream Public Health, 2014.

[35] National Forum on Education Statistics. *Every School Day Counts: The Forum Guide to Collecting and Using Attendance Data.* Washington D.C.: U.S. Department of Education, 2009.

[36] Toldson, Ivory. "How Race Matters In The Classroom." *The Root.* October 22, 2012. http://www.theroot.com/views/how-race-matters-classroom?page=0,1.

[37] Skiba, R. J., R. H. Horner, C.-G. Chung, M. K. Rausch, S. L. May, and T. Tobin. "Race Is Not Neutral: A National Investigation of African American and Latino Disproportionality in School Discipline." *School Psychological Review* 40 (2011): 85-107.

Among these discreet challenges, first-year teachers, particularly, regularly cite difficulties related to classroom management as the most trying aspect of teaching.[38] Student ratios impacts academic achievement as well. Students display less disruptive behavior in small classes, and teachers spend less time on discipline, leaving more time for instruction. Specifically, teachers in smaller classes can diagnose and track student learning and differentiate instruction in response to student needs.[39]

Students with disabilities face challenges with respect to academic achievement. According to the CRDC, students with disabilities in grades K-12 are disproportionately suspended from school. All of these metrics selected as variables, when controlled, will help isolate if a relationship exists between teacher effectiveness and academic achievement and between college and career readiness.

Results and Discussion

Regression results are located in Tables 2 and 3. Table 2 displays the relationship of academic achievement of students in high-poverty schools in New Jersey (AAST) and teacher effectiveness (EFF). Table 3 focuses on the relationship of college- and career-readiness of students in high-poverty schools in New Jersey (CCST) and teacher effectiveness (EFF).

Table 3 is a regression test to investigate if there is a relationship between AAST and EFF. The regression results show that when you continue to add new variables of control, the impact of EFF on AAST changes very little. The correlation coefficient shows that there is an increase in the academic achievement percentile of a school when the teacher effectiveness percentage within a school decreases. However, the correlation is not strong. Also, this is not a statistically significant relationship.

The controlled variables show that the relationship between AAST and EFF is minimally impacted by other factors. What the regression test does show, however, is a relationship of statistical significance at the .01 level between AAST and PERBLK. The correlation coefficient shows that where there is a decrease in the population of Black students, the statewide percentile for academic achievement increased. One cannot conclude on the face that the percentage of Black students impact the academic achievement levels of a high-poverty school. A disproportionate amount of Black students overcrowd urban schools.[40]

The regression test also shows a statistically significant relationship at the .05 level between AAST and LEP, when all other factors are accounted in the regression test. That is, with a decrease in the percentage of limited language proficient students, there is an increase in the academic achievement statewide percentile. However, the correlation is not as strong as the correlation between AAST and PERBLK. One could conclude that to increase a schools' academic achievement percentile, they should reduce the number of limited language proficent students in their school. However, the results can be taken another way. Improving teacher quality in the area of working with limited language proficent students could

[38] Smart, Julie B., and L. Brent Igo. "A Grounded Theory of Behavior Management Strategy Selection, Implementation, and Perceived Effectiveness Reported by First-Year Elementary Teachers." *The Elementary School Journal* 110, no. 4 (2010): 567-584.

[39] National Council of Teachers of English. *Why Class Size Matters Today.* Urbana: National Council of Teachers of English, 2014.

[40] Boschma, J., and R. Brownstein. "The Concentration of Poverty in American Schools." *The Atlantic,* 2016: https://www.theatlantic.com/education/archive/2016/02/concentration-poverty-american-schools/471414/. Reed, L. C., and R. Swaminathan. "An Urban School Leader's Approach to School Improvement: Towards Contextually Responsive Leadership." *Urban Education* 51 (2016): 1096-1125.

Table 3

Academic Achievement and Teacher Effectiveness (115 Obs.)

AAST	REG-1	REG-2	REG-3	REG-4	REG-5	REG-6	REG-7	REG-8	REG-9	REG-10	REG-11
EFF	(.010)	(-.038)	(-.033)	(-.033)	(-.037)	(-.009)	(-.016)	(.001)	(-.028)	(-.026)	(-.027)
PERBLK		(-.104)	(-.345)**	(-.366)**	(-.357)**	(-.422)**	(-.412)**	(-.436)**	(-.452)**	(-.461)**	(-.461)**
PERHIS			(-.269)*	(-.289)*	(-.289)*	(-.281)*	(-.277)*	(-.324)*	(-.261)	(-.262)	(-.253)
FRPL				(.071)	(.067)	(.062)	(.065)	(.123)	(.069)	(.066)	(.065)
DIS					(-.098)	(-.191)	(-.196)	(-.200)	(-.358)	(-.353)	(-.353)
LEP						(-.212)	(-.219)	(-.218)	(-.264)*	(-.260)*	(-.259)*
FIRST							(.222)	(.184)	(.159)	(.155)	(.156)
SECOND								(.328)	(.386)	(.379)	(.378)
RATIO									(-1.272)	(-1.258)	(-1.262)
BLKOSS										(.016)	(.013)
HISOSS											(-.012)
Constant	13.44	20.90*	44.22**	39.80*	41.71*	46.58**	45.14**	40.69*	61.99**	61.59**	61.93**

* p<.05* p<.01** p<.001***

increase academic performance at a school. That hypothesis would require more study.

Table 3 is a regression test to investigate if there is a relationship between CCST and EFF. The regression results show that when you continue to add new variables of control, EFF has an impact on CCST. The correlation coefficient shows that there is an increase in the college- and career-readiness percentile of a school when the teacher effectiveness percentage within a school increases. The correlation is not very strong. However, this is a statistically significant relationship at the .05 level.

The controlled variables show that the relationship between CCST and EFF is minimally impacted by other factors. What the regression test also shows is a relationship of statistical significance at the .05 level between CCST and FIRST as well as between CCST and SECOND. The correlation coefficient shows that, where there is an increase in the statewide percentile for college- and career-readiness, the percentage of first and second teachers in-

creased. The correlation is strong with the increase of second-year teachers.

The results do not provide any insight into the CCST and FIRST relationship or the CCST and SECOND relationship in high-poverty schools. More study is needed to properly account for the reasons behind this relationship and what about high-poverty schools speaks to the correlation. There is no current scholarship to explain such a relationship. Current research speaks to the inexperience and ineffectiveness of novice teachers.[41] However, the regression test speaks to something different.

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[41] Clotfelter, C. T., H. F. Ladd, and J. Vigdor. "Who Teaches Whom? Race and the Distribution of Novice Teachers." *Economics of Education Review* 24 (2005): 377-392.
Rivkin, S. G., E. A. Hanushek, and J. F. Kain. "Teachers, Schools, and Academic Achievement." *Econometrica* 73 (2005): 417-458.
Grissom, J. A. "Can Good Principals Keep Teachers in Disadvantaged Schools? Linking Principal Effectiveness to Teacher Satisfaction and Turnover in Hard-to-Staff

Table 4

College and Career Readiness and Teacher Effectiveness (115 Obs.)

CCST	REG-1	REG-2	REG-3	REG-4	REG-5	REG-6	REG-7	REG-8	REG-9	REG-10	REG-11
EFF	(.395)**	(.259)*	(.258)*	(.259)*	(.250)*	(.238)	(.220)	(.255)*	(.267)*	(.255)*	(.251)*
PERBLK		(-.292)***	(-.255)	(-.216)	(-.196)	(-.168)	(-.140)	(-.192)	(-.185)	(-.126)	(-.127)
PERHIS			(.041)	(.077)	(.079)	(.076)	(.088)	(-.013)	(-.040)	(-.031)	(.010)
FRPL				(-.125)	(-.134)	(-.132)	(-.123)	(.002)	(.025)	(.047)	(.042)
DIS					(-.220)	(-.182)	(-.195)	(-.205)	(-.137)	(-.168)	(-.168)
LEP						(.088)	(.066)	(.070)	(.090)	(.062)	(.065)
FIRST							(.624)*	(.541)*	(.552)*	(.577)*	(.580)*
SECOND								(.704)*	(.678)*	(.724)*	(.718)*
RATIO									(.547)	(.451)	(.425)
BLKOSS										(-.101)	(-.111)
HISOSS											(-.059)
Constant	-9.16	11.73	8.16	15.97	20.26	18.23	14.16	4.59	-4.57	-1.97	-.307

* p<.05* p<.01** p<.001***

Limitations

This regression study sought to identify a casual and statistically significant relationship between (1) teacher effectiveness and academic achievement in high-poverty schools in New Jersey, and (2) teacher effectiveness and college- and career-readiness in high-poverty schools in New Jersey. The high-poverty schools were gathered from the U.S. Census American Fact Finder data specific to poverty rates per municipality. The top ten New Jersey municipalities with the highest rates of poverty were chosen because they were each had a municipal poverty rate over 30% for all residents. However, the Newark Public Schools were not included in the student for the lack of data available concerning the controlled variables.

In reality, it is not a true top ten list, but it is a top ten list of districts that have submitted data to both the NJDOE and CRDC. While Paterson City Public School data is of value for this study, data on the Newark Public Schools would have contributed value to this study due to Newark being New Jersey's most populated municipality. According to the NJDOE, for the 2013-2014 academic year, 34,980.5 students were enrolled in Newark Schools. Of that total, 91% of students were Black or Latino and 84% of all students received free or reduced lunch.

Also, no charter schools were included in this study. New Jersey charter schools are located throughout the state, however they are primarily located in high-poverty, heavily Black and Latino populated areas. Adding data from these schools would have been valuable to this study.

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Table 5

New Jersey Charter Schools in High-Poverty Locations

Municipality	Number of Charter Schools
Camden City	6
Salem City	0
Lakewood Township	0
Atlantic City	0
City of Asbury Park	1
Paulsboro Borough	0
City of New Brunswick	1
Bridgeton City	1
Passaic City	1
City of Newark	19

All New Jersey charter schools submitted data to the CRDC and the NJDOE with the exception of the teacher effectiveness scores for their schools and/or districts. Without the teacher effectiveness data for charter schools, they could not be used for the purposes of this study. However, future studies on teacher effectiveness of New Jersey teachers can include charter schools as they provide data to the NJDOE.

With the exception of AAST and CCST, no other student achievement metrics were used in this study. More student achievement metrics could have been applied to the dataset for this study. However, while the CRDC does include information within its data about early learning and college- and career-readiness pathways, it does not offer data on student achievement in the way of test scores or grades. The NJDOE offers achievement data at the individual school level.

However, AAST and CCST are the only universal metrics that allow for a uniform way of analyzing data from school to school. New Jersey school districts, as with school districts nationwide, are not universally K-12 districts. Some are, while others are K-5, K-6, 6-8, K-8 or 9-12 districts. To find a metric universal to New Jersey districts would have lowered the sample size of districts, thus the nature of the study would have been changed to focus on either elementary or secondary schools.

The use of schools from the top ten poverty municipalities in New Jersey limited the sample size of the study. While this study could have found more schools to include using the free or reduced lunch metric, that metric does not provide a true measure of poverty for the area where the school is located. While poverty rates are associated with students who receive free or reduced lunch, state voucher programs and regional schools do move students from high-poverty areas to low-poverty areas. However, this study could have added more schools from districts where poverty rates were in the 20% to 30% range.

Lastly, there is no racial data for teacher composition at the school-wide level. This data only exists as the district level. While this study was not focused on the relationship between teacher race and academic performance, including teacher racial composition would have add-

ed value to this study. Likewise, there would be value to studying the impact of teacher racial composition and academic performance at both the school and district levels. There is a body of research that has examined the impact of the academic achievement of students with a same race teacher.[42]

Summary and Recommendations

It was the intention of this investigation to contribute to the empirical scholarship on the impact teacher effectiveness has on the academic performance and readiness of New Jersey's high-poverty public schools students. The results of the data provide information that can both offer insight into ways to strategically address the achievement gap among White students and students of color and how to build the foundation for a more in-depth study using the CRDC and NJDOE data, replicating and developing a different investigative model.

Another investigation on New Jersey school districts, or an investigation like this investigation, should isolate race and gender to explore the specific relationship between male and/or female teachers of color in addition to White teachers and the academic achievement

of students of color in high-poverty areas. Also, another investigation should replicate the same dataset from the CRDC and NJDOE for the school years ending in 2012 and 2010 to be compared with the data compiled in this study (school year ending 2014).[43]

The results of this investigation do not necessarily answer the question: is teaching enough in high-poverty schools. However, this study does lead to questions that can serve as the impetus for a new study.

There are two prospective studies of interest that come from this particular study. The first has to do with investigating a potential relationship between student race and academic achievement. According to Table 2, there was a statistically significant relationship between the population of Black students and the academic achievement statewide percentile. To understand why those relationships exist, further investigation is need.

The second has to do with investigating a potential relationship between first-year teachers, second-year teachers and college- and career-readiness statewide percentile. According to Table 3, there was a statistically significant relationship between the percentage of first-year teachers in a high-poverty school and the college- and career-readiness statewide percentile. There was also a statistically significant relationship between the percentage of second-year teachers in a high-poverty school and the college- and career-readiness statewide percentile. To understand the link between inexperienced teachers and student readiness for college and career, further exploration is required.

All students are deserving of access to a quality education. To provide a student with a quality education requires the collective efforts of educators and support staff to put the stu-

[42] Dee, T. S. "The Race Connection: Are teachers more effective with students who share their ethnicity?" *Education Next* 4 (2004): 52-59.
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Egalite, Anna J., Brian Kisida, and Marcus A. Winters. "Representation in the Classroom: The Effect of Own-Race Teachers on Student Achievement." *Economics of Education Review*, 2015: 44-52.
Cherng, Hua-Yu Sebastian and Peter F. Halpin. "The Importance of Minority Teachers: Student Perceptions of Minority Versus White Teachers." *Educational Researcher*, 2016: 407-420.
Deruy, Emily. "White Teachers Expect Less Than Black Teachers From Black Students." *The Atlantic*, April 1, 2016: 4.

[43] The CRDC only has data for the years 2009-2010, 2011-2012 and 2013-2014. They will release data for 2015-2016 upon their next reporting.

dent first. Students of color and low-income students are not assured access to a quality education when they attend high-poverty schools with the likelihood of being taught by inexperienced and ineffective teachers.

To ensure high teacher quality in high-poverty schools, and school in general, leadership from all levels—school, district and state—must dedicate their efforts to change school conditions and mindsets to guarantee that the institution of the public school provides its entire student, regardless of race/ethnicity, the access to a quality education.

Randy R. Miller earned both his B.A. and M.P.A. from at Rutgers, the State University of New Jersey, where he is currently a doctoral student studying Public Affairs and Community Development. Now in his seventh year in public education, he is the director of the 21ˢᵗ Century Community Learning Center at Woodbury Junior-Senior High School in Woodbury, New Jersey. He has published books on education and has contributed a chapter in Black Male Teachers: Diversifying the United States' Teacher Workforce. *He is the author of the Urban Education Mixtape Blog (http://urbanedmixtape.com). He can be followed on twitter at @UrbanEdDJ.*