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# Teacher Demographics and Student Achievement in High Poverty Schools: What Makes A Difference?

James Zachary Williams  
Debra Smith Lee  
Presbyterian College

## Abstract

*With the implementation of the 2001 No Child Left Behind Act, teachers are expected to achieve “Highly Qualified” status. This designation requires full certification, a bachelor’s degree, and subject competence. It is designed to identify teachers who have the knowledge and skills to positively impact student learning outcomes. However, national studies indicate a lack of “highly qualified” teachers in high poverty schools. Yet there are high poverty schools where students exhibit high academic achievement. This research looks at that issue and focuses on selected teacher demographics and student achievement in a sampling of high-achieving, high poverty and low-achieving, high poverty schools in South Carolina.*

Over the past 20 years, the United States Census has identified the South as one of the most poverty-stricken areas in the nation. The Southern Education Foundation Research Report (2007) found that in 1989, 37% of public school children in 15 southern states were identified as residing in low-income families. This was 8% higher than the remaining regions of the country. In these states, the average income for a family of three was less than \$1,600 annually. Between 1995 and 2007, the percentage of low-income students in the South would grow from 45% to 54%.

Not only has the numbers of children living in poverty increased, but the socio-economic discrepancy between southern families and the rest of the nation continues. Today the South is the only region in which the majority of public school children are identified as members of low-income families. In a 2004-2005 survey, 10 states nationwide reported a majority of low income students in public schools. Nine of these were Southern states. By 2007, this list increased to 12 states nationwide, 11 of which were southern states (Southern Educational Foundation, 2007).

Research indicates that poverty impacts students’ educational achievement in significant ways. According to the Southern Educational Foundation (2007), low-income students begin at a disadvantage and continue to fall behind their peers. For example, on the National Assessment of Educational Progress (NAEP), students identified as low SES (socio-economic status) scored between 20 to 30 percentile points lower than middle and upper-class counterparts in math and reading.

With the implementation of the No Child Left Behind Act of 2001, there has been recognition of the need for and effects of teacher quality in closing the achievement gap in high poverty schools. Rivkin, Hanushek, & Kain (2002) found that the impact of low SES can be minimized by having a high quality teacher during the elementary years. Third grade students who are relatively at the same level of achievement can be separated by 50 percentile points three years later, depending on the level of teacher quality in those

three years (The Education Trust, 2007). Fallen's research in 2003 reinforced these findings and indicated that a teacher's influence is 20 times greater than any other single factor. However, Loeb & Miller (2006) found an absence of high quality teachers in low-income areas of the nation. This has devastating implications for low SES students.

Loeb and Miller also studied low SES students in the South. They found that students attending schools in the highest poverty schools in the South were twice as likely to receive their education from a first year teacher or a teacher identified as "low quality" as their counterparts in low-poverty areas nationwide. In these schools, one in four students was being taught by professionals who initially failed their certification tests or were teaching out of their field of expertise. According to this study, the academic impact for these low SES students in high poverty areas began to show as early as third grade, with the achievement gap increasing through their elementary, middle, and high school years.

In attempts to address this unequal access to quality teachers, the No Child Left Behind legislation (NCLB) was passed. The legislation stipulates that all students are entitled to (1) qualified teachers proficient in their respective subject areas, (2) a fair and equal distribution of qualified teachers to schools, and (3) public access to information that details teacher expertise and qualifications. (The Education Trust, 2007)

However, the legislation also required a definition of a "highly qualified" teacher. Thus NCLB legislation further identified the following three criteria. To be "highly qualified" teachers must (1) have full certification by passing all required tests and entry requirements, (2) attain a bachelor's degree at a nationally accredited institution, and (3) demonstrate competence in specific subject knowledge and teaching (U.S. Dept. of Education, 2003). Data on school districts' compliance in this area are to be reported annually and publicly as part of the published school report cards. On these reports, a section is dedicated to teacher profiles. This allows parents and the public to view the %age of "highly qualified" teachers within a particular school district. However, this classification of teachers gives only a partial description of the teacher demographics within schools. The term does not encompass the retention rate of teachers or the ratings of teachers from parents, students or school officials. "Highly qualified" status only recognizes those teachers that meet the criteria as outlined by the NCLB's three descriptors.

The term "highly qualified" did not suddenly emerge from the 2001 NCLB legislation. The term is the evolutionary result of numerous bills, acts, and legislation over the past fifty years. The Higher Education Act of 1965 primarily targeted the inequities found in high poverty schools and instituted federal funding for the training of teachers and the development of qualified teaching personnel. The Education Professionals Development Act (1967) sought to strengthen programs for the "improvement of the qualifications of teachers...to provide a better foundation for meeting the critical needs of the nation for personnel in these areas" (Hess, Rotherham, & Walsh, 2004, p. 57).

In 1998, President Clinton's President's Summit on Teacher Quality stated that "every community should have a talented and dedicated teacher in every classroom...if we recruit promising people into teaching and give them the highest quality preparation and training" (Hess, Rotherham, & Walsh, 2004, p. 62). This quote sums up a majority of thinking behind teacher quality discussion in the last half of the 20<sup>th</sup> century.

The consensus was that to have effective teachers, there must be a call for quality preparations through training programs. National accreditation standards were developed for higher-level educational institutions in order to receive federal funding. Licensing examinations were implemented to test subject knowledge, and rights were given to parents to know the qualifications of the teachers within their child's school (Hess, Rotherham, & Walsh, 2004). All of these events culminated in 2001 with the NCLB act and designation of "highly qualified" status.

In order to comply with federal requirements, and monitor student academic achievement and progress, the South Carolina State Department of Education annually publishes individual school report cards to parents and the general public. These reports provide school ratings, test scores, and demographics. Data include (1) a school's adequate yearly progress status (AYP), (2) the disaggregation of the Palmetto Achievement Challenge Test (PACT) scores by gender, race/ethnicity, socio-economic status, subject matter, and achievement level, (3) a summary of teaching personnel demographics and (4) a report from the principal and school improvement council.

In order to clarify terms used in this research, it is helpful to define specific school report card categories. The *absolute rating* of a school is the overall rating of the school's academic achievement within a specific school year. The *improvement rating* measures the progress of the school's test scores from one year to the next. These ratings are in relation to the South Carolina Performance Goal that states "by 2010, South Carolina's student achievement will be ranked in the top half of the states nationally. To achieve this goal, [South Carolina] must become one of the fastest improving systems in the country" (School Report Cards, 2005). Based on this, schools are rated annually using five terms: Excellent, Good, Average, Below Average, and Unsatisfactory. For a school to be rated as "Excellent," the school must substantially exceed the standards for progress toward the South Carolina Performance Goal. The ratings incrementally decrease to "Unsatisfactory": a school that lacks the ability to meet the SC Performance Goal.

The rating of a school is based primarily on student PACT scores. This standardized test is administered to students in the third through eighth grades each May. It is a state developed, criterion-referenced test and assesses a student's ability to perform functions and tasks that are taught in the respective grade level. Students are scored on a rating scale of Advanced, Proficient, Basic, and Below Basic. It is the goal of teachers, school administrators, and districts to have 100% of students to score either "Proficient" or "Advanced," meaning that students met or exceeded expectations and are prepared to work at the next grade level. Students who score "Basic" can advance to the next grade, but a "Below Basic" score requires local school board policies to determine if a student may progress to the next grade level (School Report Cards, 2005). Scores are broken down by subject matter, ethnicity, gender, SES, and the four score ratings listed above.

These data determine the school's ability to attain its adequate yearly progress. By definition, the Adequate Yearly Progress (AYP) "specifies that the statewide target is met for all students and for the following subgroups: Racial/Ethnic, Subsidized Meals, Disability, and Limited English Proficiency as required by the United States Department of Education" (School Report Cards, 2005). This is based on objectives set for each school in relation to the groups listed above. The number of objectives varies between schools due to the difference in demographics and school population. The objectives include performance and participation of students in the different groups.

## **Methodology**

After reviewing the literature on the relationship among poverty levels, teacher quality, and academic achievement, my research questions focused on high poverty schools and teacher demographics in South Carolina. Specifically I looked at (1) whether there is a difference in selected teacher demographics between high-achieving, high poverty schools (HA, HP) and low-achieving high poverty schools (LA, HP) and (2) if so, are these demographics as identified on the state school report cards? Thus this study looks at teacher demographics and student achievement in a sampling of high-achieving, high poverty and low-achieving, high poverty schools in South Carolina.

Under the No Child Left Behind Act, student achievement goals were to be met beginning 2004-2005. Thus, data from this time frame were used to establish a baseline for future studies. I then purposefully selected a sample of schools that demonstrated high academic achievement (i.e. schools with “Good” or “Excellent” absolute ratings) and are located in high poverty districts during 20024-2005.<sup>1</sup> I also selected schools that demonstrated low academic performance (i.e. schools with “Unsatisfactory” absolute ratings) and are located in high poverty districts. I then disaggregated the PACT reading scores of the students within these schools in terms of the percentage of students who received subsidized meals. All total, there were three schools in the first group of HA, HP schools. There were eight schools in the second group of LA, HP schools.

Using data from each of these schools' report cards, I selected the following teacher demographics: length of teaching experience, advanced degrees, continuing contract teachers, “highly qualified” status and returning teachers. Finally, I analyzed the teacher demographics of schools in the HA, HP group and the LA, HP group to look for trends and patterns.

## **Results**

Of the three schools that scored “Excellent” on the absolute rating (HA, HP), 70% of students scored either “Proficient” or “Advanced” on the English Language Arts section of the PACT. These schools had at least 81% of students who received subsidized meals. The teaching personnel had an average of 15 years of teaching experience. Two of the schools had 95% of teaches categorized as “highly qualified.” The third school reported 100 % of their teachers as “highly qualified”. A minimum of 86 % of teachers at these schools were returning teachers and 75% or more planned on continuing their contracts. Teachers with advanced degrees comprised over 50% of the teaching faculty at all three institutions.

In the LA, HP group of schools, none of the schools reported more than 25% of students scoring in the “Proficient” or “Advanced” level on the English Language Arts section of the PACT. Seven of the eight schools had at least 85% of students who received subsidized meals. The teaching personnel had an average of 13.6 years of teaching experience. Six schools had at least 86% of their teachers identified as “highly qualified”. Six schools had a minimum of 83% of their teachers returning from the previous year. The other two schools had a minimum of 72% returning. With the exception of one school, the %age of teachers continuing their contracts ranged from 45 to 55% of the teaching personnel. In all eight schools, teachers who had advanced degrees ranged from 30 to 50%.

Analysis of state school report card data for these schools suggests several overall trends. First, the percentages of teachers who return from the previous year are approximately the same for both groups. Second, the average years of teaching experience is approximately the same for both groups. Third, there are fewer “highly qualified” teachers in the LA, HP group than in the HA, HP group; although not the discrepancy one might expect. Seventy-five% of LA, HP schools had at least 86% of teachers classified as “highly qualified” versus 95-100% in the HA, HP schools. Fourth, the percentage of teachers with advanced degrees shows a similar pattern. Schools in the LA, HP group generally had fewer teachers with advanced degrees than did the HA, HP group of schools. However, the range among LA, HP schools was broad. Some schools had 50% of their teachers with advanced degrees, similar to the HA, HP schools. Others had 30% of their teachers with advanced degrees.

The only area of consistent difference between the HA, HP and LA, LP groups of schools was in the continuing contract criteria. Only one LA, HP school was similar to the HA, HP group in terms of percentage of teachers continuing their contact. The other seven schools had significantly lower percentages of teachers continuing their contracts; 45 to 55% for LA, HP schools versus over 75% for HA, HP schools.

### **Discussion**

A large body of research has been devoted to identifying and defining characteristics of teachers that impact student growth and achievement, especially ones that can be measured and quantified. According to NCLB legislation, “highly qualified” teachers affect student learning and thus should be an indicator of highly effective schools. However, in this study, the majority of low-achieving, high poverty schools had approximately the same %age of “highly qualified” teachers as did the high-achieving, high poverty schools. Thus there was no pattern that suggested that, in these schools, teachers who have full certification, a bachelor’s degree at a nationally accredited institution, and competence in specific subject knowledge made the critical difference for these students.

Neither did other commonly measurable teacher demographics such teaching experience and advanced degrees. On the school report cards, teachers in both HA, HP and LA, HP schools looked very similar in these areas. Teachers averaged comparable years of experience, were classified as “highly qualified,” and were returning from the previous years. Many had advanced degrees. It appears that the only significant difference between teachers in these two groups was that in HA, LP schools there were more teachers on continuing contracts than in LA, HP schools.

Therefore, questions remain: “What are the critical characteristics of ‘highly qualified’ teachers; ones that impact student achievement?” “Can these characteristics be generalized to all teachers or are there different characteristics for teachers working in different contexts?” “Does a continuing contract have any impact on teacher effectiveness and student achievement?”

According to these findings, being “highly qualified” as defined under NCLB, doesn’t appear to make the difference in student academic success. When looking at the schools from this research, there is no data that strongly indicate that schools with more “highly qualified” teachers have higher student achievement levels. In fact, low-performing schools had similar numbers of “highly qualified” teachers.

Perhaps what this study does suggest is that, while education, certification examinations, and content knowledge may be core to knowing what to teach, there may be other critical factors that affect students living in poverty. Could the difference lie in how teacher education programs prepare future teachers? Could it be the mentoring and professional development in-service teachers receive? It may be just as, if not more, important for teachers in high-poverty schools to know not only what and how to teach but to know each student, his/her context and how to differentiate instruction to meet specific needs.

Or perhaps these findings indicate the importance of culture, climate and consistency in the school. Is it the school leadership and school culture that makes a difference in the percentage of continuing contract teachers in these high performing, high poverty schools? Could it be teachers who are encouraged to make decisions in the interests of their students become involved in the community and have administrative support have a commitment not experienced by other teachers?

Or perhaps there are characteristics less definable that contribute to a teacher's effectiveness in high poverty schools. Is it possible that a truly effective teacher can't be identified by general percentages and statistics? Can teacher quality, which is applicable to all students, all teachers and all contexts, be defined and reported by categories and charts? Or does it have more to do with a teacher's ability to connect, relate, and apply his/her knowledge, skills and interpersonal relationships in various teaching contexts.

Additional research is critical to address these questions. While some conclusions can be made from this study, the data suggest continued research is needed to determine the teacher characteristics critical to student achievement, particularly in high poverty schools.

### **Further Research**

The study could be expanded to include additional years' data and more schools in the sampling to provide additional data and power to the study. Statistical analysis could also be utilized to determine any quantitative relationship between and among the reported variables. In addition, data could be disaggregated further than is provided on the report card. For example, "years of teaching experience" could be analyzed to identify the range of years, not merely an average. Other variables that affect student achievement, such as parental involvement, could be researched in the context of high poverty schools, student achievement and continuity of teaching personnel. Finally, interviews with administrators, teachers, students and parents on the impact and influence of school climate and culture could be conducted.

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#### **About the Authors:**

Zach Williams is a recent graduate of Presbyterian College in Clinton, SC with a Bachelors of Science in Early Childhood Education.

Debra Smith Lee is an Associate Professor of Early Childhood Education and the Chair of the Education Department at Presbyterian College in Clinton, SC.