SCHOOL ACCOUNTABILITY AT THE INTERSECTION OF RACE, POVERTYAND TEACHER QUALITY

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Abstract

This article examines the relationship between teacher certification, race, and socio-economic status and their impact on school district accountability ratings in Mississippi. Our goal is to understand better the confluence of factors impacting school accountability ratings to inform proactive change. We sampled 143 public school districts and utilized correlation and regression techniques to determine the relationship and the predictive value among variables. Our findings indicate that the percentage of African American students, poverty, and teacher certification type are all correlated to district accountability ratings. Furthermore, both the percentage of African American students and the percentage of students living in poverty in Mississippi school districts are strong predictors of school accountability ratings.

Keywords

Teacher Certification, School Accountability Ratings, Race, Poverty

Understanding the relationship between school district accountability ratings, teacher certification, racial background, and socio-economic status of students in the State of Mississippi requires a thoughtful dissection of the myriad "gaps" that exist in American public education. Academic achievement or performance gaps, opportunity gaps, educational debts and deficits, race/ethnicity and socio-economic gaps, teacher quality gaps, educational equality and equity gaps, and gaps in overall school quality and accountability have all been cited as factors in historical and contemporary educational research, public discourse, and educational policy conversations (Aud, Fox, & Kewal-Ramani, 2010; Brownstein, 2016; Garcia & Weiss, 2017; Goldhaber, Quince, & Theobald, 2018; Jimeniz & Sargrad, 2017; Ladson-Billings, 2006; Mooney, 2018). The aforementioned factors, which are present throughout the nation, are especially worthy of consideration when one considers the current status and future directions of public education in Mississippi.

Mississippi earned a D (65.8 out of 100) on the Quality Counts 2017 State Report Card (Education Week, 2017) and ranked 50th, last in the nation, in terms of students' chance-for-success, school finance, and K-12 achievement (Education Week, 2017). In 2019, the state posted small improvements earning a D+ (68.5 out of 100) and improved to 47th in the national rankings (Education Week, 2019). The Mississippi Department of Education led by State Superintendent of Education, Dr. Carey M. Wright, reported slightly better performance with a statewide accountability average grade of C on the 2017-2018 Mississippi Succeeds Report Card (Mississippi Succeeds Report Card, 2018). The C-accountability average reflected averages in Math proficiency at 43%, English proficiency at 39%, U.S. History Proficiency at 53%, and Science Proficiency at 41% (Mississippi Succeeds Report Card, 2018). During the same academic year, student group data indicated significant differences along the lines of race and gender in Mississippi students' levels of college and career readiness: African American females (23.4%), African American males (19.3%), White females (57.3%), White males (52.2%); Hispanic/Latino females (36.9%), Hispanic/Latino males (30.8 %), Asian females (75.6%), Asian males (76.5%) (Mississippi Succeeds Report Card, 2018b).

The issue of educational equity in Mississippi is longstanding, but it is even more pressing in 2020 as Mississippi's public schools serve approximately 490,000 (PreK -12) students of which 54.9% are students of color and 73.7% are eligible for free or reduced price lunch (MS Facts at a Glance, 2020). Of the districts in the state, 32.6% earned school accountability ratings of D or F during the 2017-18 reporting period (Wright, 2018, p. 23).

During the 2017-2018 school year, students in high poverty schools had 72.8% experienced teachers versus 82.7% experienced teachers in low-poverty schools and 11.7% provisional teachers in high poverty schools versus 2.6% provisional teachers in low poverty schools (Mississippi Teachers and School Leaders, 2018). According to Betz, teacher shortages are also a persistent problem given that "in 2018, there were more than 2,100 teaching vacancies and 2,256 uncertified teachers across the state" (2019, para. 24). In a state with just over 30,000 teachers, 7.5% (2,256) uncertified teachers may seem insignificant, but if those uncertified teachers are concentrated in school districts which serve majority minority or high-poverty communities, major equity issues emerge.

In light of the current status of affairs in Mississippi's educational system, the researchers sought to gain a clearer understanding of what was really happening behind the bleak national rankings, less than remarkable state accountability grades, and persistently low scores on state indicators of student achievement. Though some evidence of improvement was visible in Mississippi, the frighteningly slow pace of change in the educational landscape prompted researchers to examine existing educational data with a critical lens focused on the intersection of school accountability ratings, race, poverty, and teacher licensure type. Examining this issue at the intersection of multiple factors is consistent with similar research studies in the field of education (Herberger, Immekus, & Ingle, 2020; Wiseman, 2020). Additionally, this approach is consistent with what is being done in scholarship on educational equity and policy with a focus on high poverty schools and teacher quality (Clotfelter, Ladd, & Vigdor, 2010; Clotfelter, Ladd, Vigdor, & Wheeler, 2006; Kawasaki, Quartz, & Martinez, 2020; Orfield, Ee, & Coughlan, 2017). This study explores a similar strand with an emphasis on Mississippi—a place with a very complex history of school segregation and racial inequality. The present study is needed because school ratings have become an increasingly important factor in the educational policy making process (Jimenez and Sargrad, 2017). Our goal is to examine the confluence of factors impacting accountability ratings in order to inform the type of proactive change that historically underserved populations of students in Mississippi need most.

The study is therefore organized around the following series of core research questions: (a) Is there a significant statistical correlation between the percentage of certified (traditional and alternate route) and non-certified teachers employed in Mississippi school districts and the percent of African American Students; (b) Is there a significant statistical correlation between the percentage of certified (traditional and alternate route) and non-certified teachers employed in Mississippi school districts and the percentage of students living in poverty in school districts; (c) Is there a significant statistical correlation between the percentage of certified (traditional and alternate route) and non-certified teachers employed in Mississippi school districts and school district accountability ratings; and (d) Which, if any, measured variables (traditionally certified teachers, alternatively certified teachers, non-certified teachers, African American students, poverty – free and reduced lunch rate, and percentage of local revenue) are statistically significant predictors of accountability scores in Mississippi School Districts?

The research hypothesis is that Mississippi school accountability scores can be predicted by the percent of African American students in the school district, the percent of the student population living in poverty, and the type of teachers (percent of certified traditional route, percent of certified alternate route, and percent of non-certified) employed in the school district. Gaining a greater understanding of these key questions and the many assumptions that are made about school districts, teachers, and students who are connected to the ratings and achievement gaps will help to provide new and more thoughtful voices to the dialogues among stakeholders in Mississippi educational system.

Literature Review

The body of scholarship that explores African American educational outcomes and the persistent quest for equitable educational opportunities is robust. From Carter G. Woodson's *Mis-Education on the Negro* (1933) and its analysis of race in education broadly speaking to James D. Anderson's *The Education of Blacks in the South* (1988) and continuing on to works such as Gloria Ladson-Billings' *Dreamkeepers: Successful Teachers of African American Students* (2006), the issue of providing effective, equitable, and culturally responsive learning experiences for African American students has been and continues to be a major concern among scholars. The enduring interest in education is also captured in the diverse scope of topics that are present in the research literature, which includes studies that thoughtfully review research findings on racial inequalities in schools, evaluate models for increasing educational attainment, propose strategies for improving educational outcomes of African American males, offer best practices for reducing the racial achievement gap, and propose broad assessments of progress and decline in educational attainment (Conwell, 2016; Garibaldi, 1997; Slavin & Madden, 2006; Toldson, Brown, Sutton, 2009; Ward, Strambler, Linke, 2013). Yet, one of the most frequently discussed topics within educational research that focuses on African American students (PreK-16) is the issue of differential academic performance and educational outcome measures along lines of race and socioeconomic status.

Amid the conversations within the field, scholars seem to have reached a consensus on some issues. Race, socioeconomic status, family educational attainment, and school communities do seem to be factors that influence academic achievement (Battle & Lewis, 2002; Lacouri & Tissington, 2011; Wisman, 2019). Teacher quality, which is often linked to licensure through a traditional teacher preparation program, has a positive impact on

academic achievement and long-term life outcomes (Chetty, Friedman, & Rockoff, 2014; Clotfelter, Ladd, & Vigdor, 2007). Economic and racial/ethnic diversity within schools tends to have positive impacts on students' achievement (Johnson, 2015; Mickelson, 2016; Reardon, 2016). School (re)segregation, which often occurs as a result of residential segregation, creates unequal educational opportunities by relegating poor students, many of whom are also students of color, to under resourced schools staffed by alternately certified (or uncertified) teachers; these are all educational realities that require innovative educational policies to help mitigate years of structural racism (Anderson, 2016; Rothstein, 2014).

The Intersection of Race, Poverty, Teacher Quality and School Accountability

The consensus that has been built within the field, however, comes along with many lingering debates regarding how best to understand the intersection of factors that inform African American students' academic achievement, their access to resources that promote learning such as qualified teachers, and the equity of tools used to measure school accountability. Several recent works of scholarship explore the intersection of factors that shape educational outcomes. Wisman (2020) examines the diversity index (DI) which seeks to apply a variety of factors to achieve school diversity and integration via student assignments to different schools. Wisman sought to "investigate the relative efficacy of one measure of socioeconomic/racial diversity within a school in predicting academic achievement, relative to other measures of socioeconomic and/or racial diversity analogous to component factors of the DI" (2020, p. 936). Wisman surmised that poverty was a stronger predictor of reading and math achievement than was race. Herberger, Immekus, and Ingle (2019), using a similar approach, studied the race of students, participation in the National School Lunch Program (NSLP), ACT PLAN preparation, school composition, and neighborhood category to determine which factors most accurately predicted college and career readiness. Herberger et. al (2019) found that aside from participation in an academic program geared towards ACT preparation, being African American and participating in the NSLP program were the only statistically significant predictors of performance across models. Both variables were negatively associated with student academic performance and college readiness.

This study contributes to the current literature by applying research methods similar to those established by Wisman (2020) and Herberger, et al. (2019) to identify the factors which have the strongest influence on school accountability ratings in Mississippi. To what extent are race, socioeconomic status, teacher licensure type, and school district accountability ratings related? The objective of this analysis is three fold: (a) to add to the literature, targeted statistical data that clearly identifies areas for immediate policy modifications that might meaningfully advance efforts for increased equality of educational opportunity for African American students, in Mississippi, (b) to promote greater equity in school accountability ratings for districts that serve high-poverty communities in Mississippi, and (c) to provide a research based foundation for further study of teacher quality and academic achievement among African American students in Mississippi's majority-minority and high poverty school districts.

The second component of this study has direct connections to ongoing conversations within educational research regarding test-based measures of student academic achievement and school accountability as well as the role of teacher quality (teacher licensure type) in student achievement. The use of test-based performance to measure student learning and academic achievement is common in educational research and has become an essential feature in determining school district accountability ratings. However, there is some disagreement within the field about the value of test-based accountability and its power to accurately measure student achievement. Bergbauer, Hanushek, and Woessmann (2018) posit that too much emphasis is placed on testing for the purpose of school accountability while too little attention is given to the ways in which the test-based assessment may lead to unintended consequences for schools. These unintended consequences, quite often disproportionately impact high "minority," high poverty schools" (Welton & Williams, 2015, p. 182). Test related stress and assessment fatigue among students and staff, reduction in elective courses to emphasize increased time for test preparation, threats of state take-overs due to underperformance, and decreased student engagement are just a few of the perhaps unintended consequences of test-based school accountability measures (Welton & Williams, 2015). Another consequence is that the narrow use of test scores only may obscure the fact that in schools that serve economically disadvantaged students, being successful at teaching non-cognitive skills such as persistence, perseverance, and conscientiousness are also essential factors in preparing their students for life after school (Hitt, McShane, & Wolfe, 2018).

The limitations of school accountability rating measures are closely related to similar debates in the field regarding how teacher quality is determined. The research literature supports the position that teacher quality, traditional teacher certification, and licensure absolutely do matter (Chetty, et al., 2014; Clotfelter, et al., 2007). In one of the most often cited studies of the relationship between teacher quality and student achievement and long-term outcomes, researchers found that a teacher's value-added measurement has a significant impact on a range of important outcomes (Chetty, et al, 2014). A small one standard deviation improvement in teacher value added increased the probability of college attendance, improved earning trajectories across a lifetime, decreased

likelihood of teen pregnancy, and raises the rate of participation in retirement savings plans (Chetty, et al., 2014). Given that these are the types of results that policy-makers and education reformers desire when they advocate for increased school accountability, the research findings provide a very strong argument for only allowing highly qualified teachers (traditionally certified teachers) in the classroom. Clotfelter et. al (2007) concluded that a regular (traditional) licensure, experience, and teacher test scores when taken together had large effects on student mathematics achievement regardless of the socioeconomic status of students. Moreover, "other" forms of teacher licensure adversely impacted student achievement. The push for highly skilled, traditionally licensed, and effective teachers has been manifested in a number of strategies designed to recruit and retain a more qualified teacher workforce (Goldhaber & Walsh, 2014). Increasing the types of examinations required (Goldhaber, 2007), raising the cut-off scores for licensure examinations, establishing new criteria for grade point average for admission to teacher preparation programs, and recruiting future teachers from among the highest scorers on standardized tests (CAEP, 2020) are all examples of steps being taken to increase the quality of teachers and subsequently improve student achievement.   These policy efforts have been accompanied by related research intended to determine the real impact that licensure status and scores on teacher licensure examinations have on student achievement (Clotfelter, 2007; Subedi, Swan, & Hynes, 2011).

Although the positive impacts of teacher certification on student achievement are clear, some scholars have noted that strict licensure requirements intended to keep unskilled and ineffective teachers out of the classroom, often have unintended negative impacts on the students who need high quality teachers the most (Firmin, Markham, & Gruber, 2015; Goldhaber, 2007; Goldhaber, Lavery, & Theobald, 2015). Goldhaber (2007) suggests that there are consequences when standards (specifically increased test score cut offs) are implemented without consideration to the effective teachers who might be excluded and the ineffective ones who might be allowed to teach because of their test scores. Compounding the licensure barrier is the reality that because "more advantaged students are often deemed easier and more rewarding to teach than those from disadvantaged backgrounds, highly qualified teachers have an incentive to move away from schools with large proportions of disadvantaged students in favor of schools with more advantaged and easier-to-educate students" (Clotfelter, 2007, p. 13). Figured as such there are numerous obstacles in place which keep highly qualified teachers separated from the students who would benefit from them the most.

The present study engages in a number of timely and relevant dialogues within educational research on the academic achievement of African American students. Borrowing from research methods that are effective in examining multiple factors that intersect to inform student achievement and bringing into the dialogue a critique of both teacher quality and school accountability rating measures, this study extends current knowledge by offering state-specific (and school district specific) data analysis to point toward more equitable educational outcomes in Mississippi.

Methodology

A non-experimental correlational research design guided the investigation of the relationship between teacher certification, race, and poverty on Mississippi school district accountability ratings. The data employed in this study were drawn from the Mississippi Student Information System (MSIS), a system created to capture and store comprehensive detailed data about teachers, administrators, students (Pre-K to 12), and school board members in Mississippi. The researchers acquired data on 143 public school districts for the 2017-2018 school year through a public records request. Data from 138 school districts were included and analyzed using the Statistical Package for the Social Sciences (version 27). Five districts were not included in the analysis due to incomplete data for at least one selected variable in the school districts' datasets.

Data collected and analyzed included the number and percentage of traditionally certified, alternatively certified, and non-certified teachers within the school district; the percentage of students living in poverty as determined by free and reduced lunch eligibility; the percentage of district revenue from local sources; the school district accountability ratings; and student demographics. Accountability letter grades were converted to numbers for analysis purposes (e.g., A=4, B=3, C=2, D=1, and F=0). The following section provides a description of the variables utilized in this study.

Dependent Variable

Mississippi School Accountability Rating. "The Mississippi Statewide Accountability System assigns a performance rating of A, B, C, D, and F for each school and district based on established criteria regarding student achievement, individual student growth, graduation rate, and participation rate. Statewide assessments are used to measure proficiency and growth in proficiency for students in grades 3-8 and high school students taking end-of-course subject area assessments in Algebra I, English II, Biology, and U.S. History." (Mississippi Department of Education, 2020a, para. 1).

Independent Variables

Traditionally Certified Teachers. Traditionally-certified teachers typically graduate from a university with a degree in education. During their preparation, they complete a student teaching experience and take courses in pedagogy (Trivitt & Shuls, 2018). For the purpose of this study, it refers to certified teachers in the state of Mississippi who completed a university based undergraduate teacher education program.

Alternatively Certified Teachers. Alternatively-certified teachers typically complete a certification program for individuals who hold a non-education bachelor's degree. Alternative route programs in Mississippi typically consist of three components: testing, training program or coursework, and a one year teaching internship. (Mississippi Department of Education, 2020b). For the purpose of this study, it refers to certified teachers in Mississippi school districts who completed a certification program for individuals who hold a non-education bachelor's degree.

Non-Certified Teachers. This variable refers to teachers employed in Mississippi school districts that do not meet state requirements for traditional or alternate route certification at the time of employment. Waivers for the employment of non-certified teachers may be granted in situations where the district documents need and inability to fill position with a certified teacher (Mississippi Department of Education, 2020c).

African American Students. This variable refers to the percentage of students identified as African American or Black in a Mississippi school district

Poverty (Free and Reduced Lunch Rate). This variable refers the percentage of students eligible for free lunch in a respective school district. It is widely used as an indicator of poverty in schools. Free lunch includes students from households with an income at or below 130 percent of the poverty income threshold. Reduced lunch includes students from households with an income between 130 percent and up to 185 percent of the poverty threshold (Snyder & Musu-Gillette, 2015).

Percentage of Local Revenue. This variable shows the percentage of school district revenue received from local sources. Local revenues include revenues from such sources as local property and non-property taxes, investments, and student activities such as textbook sales, transportation and tuition fees, and food service revenues (NCES, 2020). Schools and districts with high rates of poverty tend to have less local tax revenue devoted to education.

Data Analysis Procedures

Analysis procedures included the use of correlation and regression techniques to determine the relationship between selected variables and school district accountability ratings.

The inclusion criteria for determining which variables to utilize in the regression model included: (a) variables directly related to answering this study's research questions; (b) variables identified in the research literature as having an impact on teacher quality (CAEP, 2020; Clotfelter et.al., 2007), socio-economic/demographic influence (Goldhaber et.al., 2015), student performance gaps (Walsh et.al., 2017); and (c) variables not contributing to collinearity issues and/or are not extremely correlated ($r = .80$ and above).

Preliminary analyses found a violation of the data normality assumption (Kolmogorov-Smirnova test, $p > .05$) for the following variables: traditional licensure; alternate licensure; traditional and alternate licensure; non-certified teachers; accountability scores; and percentage African American students. This violation prompted the use of a non-parametric correlation test (Spearman Rho). As related to identifying potential levels of multi-collinearity, both regression models initially included the Alternative Licensure (AL) variable in addition to the variables of Traditional Licensure; Non-Certified; percentage of African American students; and Poverty percentage. With the inclusion of the AL variable, the variance inflation factor (VIF) Collinearity and Tolerance statistics for Traditional Licensure went from 4.841/.207 to 30.539/.033; and Non-Certified teachers went from 3.738/.268 to 11.542/.087. As referenced in the research literature, VIF statistics over 10 and Tolerance statistics below .2 are strong indicators of multi-collinearity (Fields, 2005, p. 175). Therefore, the Alternate Licensure variable was not included in the regression models.

To conduct the regression analysis, this study utilized both the Stepwise method and the Enter/Forced method to assess the predictive impact of selected independent variables on the dependent variable. The Stepwise regression method allows for the consideration and entry of variables into the model according to established mathematical criteria and the importance of the variables to answering specific research questions. As related to the variables included in this study, the order of importance established by the researcher and supported by the research literature was Traditional Certified percent; Non-Certified percent; African American percent; and Poverty percent.

The Enter/Forced regression method allows for the inclusion of variables into the regression model simultaneously without considering entry order. This method is appropriate for conducting exploratory research involving a small set of predictor variables not having a strong theoretical framework undergirding their entry as independent variables (Fields, 2005, p. 177). The goal of including the two models is to yield additional insight

regarding the predictive strength of each independent variable individually and when combined with other variables.

Findings

Data from 144 Mississippi School public districts were included in the dataset, however six school districts were eliminated from analysis due to the presence of missing values leaving a total of 138 districts. Fifteen districts (10.5%) were rated as "A" districts, 44 (30.8%) as "B" districts, 42 (29.4%) as "C" districts, 34 (23.8%) as "D" districts, and eight (5.6%) as "F" districts. One district was not rated. The mean percentage of traditionally certified teachers employed by school districts ranged from 63.1% for "F" districts to 88.2% for "A" rated districts. No "A" rated districts were composed of less than 84.8% traditionally trained teachers, while "F" rated districts percentage of traditionally certified teachers ranged from 44.1% to 76.1%. The percentage of traditionally trained teachers decreased at each school rating level (A-F), while the standard deviation increased as district rating lowered (A = 2.9, B = 5.5, C = 10.3, D = 12.3, and F = 11.6), indicating that there is little difference in teacher type for A and B rated districts. Those districts are mostly staffed with traditionally licensed teachers while staffing varies greatly for "C," "D," and "F" rated districts.

A summary of the descriptive statistics for all variables included in the study are presented in Table 1.

Variable	Mean	S.D.	Range
Dependent Variable			
Accountability Score	3.17	1.08	4
Independent Variables			
Traditional License Teacher	0.80	0.11	0.54
Alternative License	0.09	0.06	0.34
Non Certified	0.04	0.06	0.34
African American	53.03	31.35	97.0
Poverty (Free & Reduced Lunch%)	23.95	8.35	37.7
Local Revenue %	31.10	8.94	44.0

Table 1 Means, Standard Deviations, and Ranges for Study Variables (N=143)

Table 2 indicates that there was a strong inverse relationship between the percentage of African American students and the percentage of traditionally licensed teachers in school districts $r = -.724$, $n = 138$, p (two-tailed) < 0.01. The relationship between the percentage of alternatively licensed teachers and the percentage of African American students, $r = .684$, $n = 138$ were found to be significant p (two-tailed) <0.01. The percentage of non-certified teachers and the percentage of African American students, $r = .591$, $n = 138$, were also found to be significant p (two-tailed) <0.01. Thus, indicating that school districts with higher percentages of African American students are taught by larger percentages of the alternate route and non-certified teachers.

There were inverse relationships between the percentage of traditionally licensed teachers and the percentage of the student population living in poverty, $r = -.553$, $n = 138$, p (two-tailed) <0.01 and the percentage of African American students, $r = -.724$, p (two-tailed) <0.01. Furthermore, there were significant relationships between the percentage of non-certified teachers and percentage of the student population living in poverty, $r = .616$, $n = 138$, p (two-tailed) <0.01, as well as the percentage of school district population living in poverty and the percentage of alternatively licensed teachers $r = .540$, $n = 138$, p (two-tailed) < 0.01.

Table 2 also indicates that the percentage of traditionally licensed teachers is the only variable exhibiting a positive relationship to school accountability ratings $r = .660$, $n = 138$, p (two-tailed) <0.05; while significant inverse relationships exist between accountability scores and the percentage of alternatively licensed teachers, $r = -.622$, $n = 138$, p (two-tailed) <0.01; and between accountability scores and the percentage of non-certified teachers, $r = -.530$, $n = 138$, p (two-tailed) <0.01. As the percentage of alternatively certified teachers, non-certified teachers, students in poverty, and African American students in the district increases, accountability ratings decrease.

Variable	1	2	3	4	5	6	7
Traditional Licensure %	-						
Alternate Licensure %	-.896**	-					
Non-Certified %	-.684**	.500**	-				
Poverty-Free & Reduced Lunch%	-.553**	.539**	.623**	-			
African American%	-.724**	.685**	.596**	.717*	-		
Accountability Score	.660**	-.622**	-.530**	-.683**	-.761**	-	
Local Revenue %	-.005	.090	-.207*	-.229**	.041	.145	-

** *p* < .01, two tailed. *p < .05, two-tailed.

Table 2 Correlation Matrix for All Variables

The Stepwise and Enter/Forced regression methods (Table 3) were used to assess the control measures (percentage of traditionally licensed teachers; percentage of non-certified teachers; percentage of African American students; and poverty). The total variance explained using the Stepwise regression method was 60.8%, $F(1,134) = 11.65$, $p <$ .05. Percent African American students and Poverty percent were statistically significant, with the percentage of African American students having the highest beta (predictive) value of -0.568 ($p < .001$) of accountability scores, followed by Poverty percent with a beta (predictive) value of -0.265 ($p < .05$). Percentage of Traditionally licensed and Non-Certified teachers were excluded from the model using the Stepwise method. The total variance explained using the Enter/Force regression method by the model was 61.1%, $F(4,132) = 51.917$, $p < .001$. African American students and percentage of students in Poverty (free and reduced lunch) were statistically significant, with the percentage of African American students having the highest beta (predictive) value of -0.529 ($p < .001$) of Accountability scores, followed by percentage of Poverty with a beta (predictive) value of -0.260 ($p < .05$). The percentage of Traditionally Licensed ($p = .281$) and Non-Certified teachers ($p = .417$) were not statistically significant in the Enter/Force regression model.

Stepwise Regression Summary			
	Unstandardized Beta	Standard Error Beta	Standardized Beta
(Constant)	5.04	0.18	
African American %	-0.02	0.003	-0.568**
Poverty	-0.034	0.01	0.265*

Dependent Variable: Accountability Score
Note R^2 = .608 ; Adjusted R^2 = .602 * $p < .05$, ** $p < .001$

Enter/Forced Regression Summary			
	Unstandardized Beta	Standard Error Beta	Standardized Beta
(Constant)	3.91	1.065	
Traditional Licensure %	1.219	1.126	0.129
Non-Certified %	1.447	1.777	0.085
African American %	-0.018	0.003	-0.529**
Poverty-Free and Reduced Lunch%	-0.034	0.011	-0.260*

Dependent Variable: Accountability Score
Note R2 = .611 ; Adjusted R2 = .600   * p < .05, ** p < .001

Table 3 Combined Stepwise & Enter/Force Regression Model Summaries

Discussion

The Mississippi School Accountability System was designed to provide district and state personnel with information to inform change and close the achievement gap; however, school districts serving the largest percentages of African American students find themselves yet again under-resourced. Our analysis reveals that the larger the percentage of African American students that are in a Mississippi school district, the lower the school district accountability rating is likely to be. While this finding is consistent with literature concerning African American students and academic performance (Aud et al., 2010), it is the examination of the correlations between the variables in the study and the strength of the predictive value of race and poverty that illuminate the context for understanding how and why performance gaps continue to persist in Mississippi school districts.

A notable finding of this study is that the percentage of African American students and poverty as indicated by free and reduced lunch rate are both significant predictors of school accountability scores. This finding is largely consistent with both Wisman (2020) and Herberger's (2019) findings; race and free and reduced lunch rate of students are both strong predictors of academic performance. Our findings; however, diverge from Wisman's (2020) in that he found that poverty was a stronger predictor of reading and math achievement than was race. We found that the percentage of African American students was more than twice as strong of a predictor of school accountability scores as poverty. This raises a myriad of questions. Why is race such a strong predictor? What exactly is occurring in Mississippi school districts serving a majority of African American students to produce these results? Our findings suggest that it is the converging of all the variables in this study within largely African American populated districts that may be responsible for race being such a strong predictor of school accountability ratings. There are strong correlations between the percentage of African American students and the percentage of alternatively certified and non-certified teachers in the school district, as well as the percentage of African American students and poverty. In short, we suggest that race is such a strong predictor in Mississippi because serving larger percentages of African American students also means serving larger percentages of poor students with a less qualified teaching force.

Decades of research (Chetty et al., 2014; Clotfelter et al., 2007; and Subedi et al., 2011) suggests that teachers are the most important school related factor associated with student achievement and that there is an inequitable distribution of qualified teachers serving low-income and high minority schools. Findings from this

study related to the distribution of qualified teachers echo this research. School districts with the highest concentration of African American and poor students employed lower percentages of traditionally certified teachers. Additionally, Mississippi school districts with higher percentages of alternatively certified teachers were more likely to have higher concentrations of non-certified teachers. This finding is consistent with Clotfelter et al. (2007), who found that the most qualified teachers are not assigned to or are not interested in teaching the students who are most disadvantaged. This holds significant implications for the state of Mississippi due to its large African American population, widespread poverty, and challenges staffing high need schools with certified teachers.

With the school accountability formula's strong reliance on student test scores and the literature indicating that teacher licensure type impacts student academic performance, we expected to find that licensure type would be a statistically significant predictor of school accountability rating (Clotfelter, et al. 2007). Our research, however, yielded different results. Teacher certification type (traditional and non-certified) proved to have strong correlations with school accountability rating, but both variables fell short of being statistically significant predictors in the Enter/Force regression model. This finding further supports our assertion that singular factors, such as teacher quality, significantly impact school ratings; but it is the convergence of multiple factors within African American districts that is responsible for continued achievement gaps.

Limitations and Implications for Future Research

This study has several limitations which must be acknowledge and discussed. First, we analyzed a single academic year of data and literature suggests that variables beyond those included in our model may provide further insight and clarification into factors influencing school accountability scores. Therefore, further research examining multiple years of data and including additional variables may provide deeper insight into the factors impacting school accountability ratings. Furthermore, the study focused on Mississippi school district level data and did not account for differences in teacher type, poverty, or performance ratings within each district's individual schools. Further research examining school level data in majority African American school districts should be conducted to explore if the models produce similar results. Finally, our quantitative approach identified the relationships that exist between variables, but it cannot fully address why those relationships exist and continue. This research should be extended to incorporate a mixed methods approach including qualitative data to provide a nuanced and robust explanation of why race is such a strong predictor and what is occurring within largely African American school districts in Mississippi.

Implications for Policy

While our research suggests that addressing the gap in teacher quality will ease the burden on lower performing school districts, it does not suggest that this alone can erase the performance gap. After years of study and initiatives designed to close the achievement gap, race and poverty are still predictors of school accountability and student performance in Mississippi. This research can be useful to policy makers in Mississippi and beyond in crafting practical solutions to mitigating academic opportunity and achievement gaps along racial, socioeconomic, and school district lines. Educational policy makers must address the issue of inequitable distribution of qualified teachers. It is the simplest of the factors to address through equity focused policy change. Poverty and racial composition of school districts are situated in historical and entrenched legacies of racism, race-based residential segregation, and cycles of economic inequality in Mississippi, but educational policy makers can address the gap in access to teacher quality through targeted efforts to reduce the number of non-certified teachers and increase the number of traditionally trained teachers in poor and majority-minority school districts. Since traditionally trained teachers are highly correlated to success in Mississippi, policy makers should gear more resources towards producing and steering traditionally trained teachers to poor and minority school districts through university based grow your own programs designed to develop local talent and incentivizing teaching in poor and minority school districts.

Additionally, policy makers should consider the use of the school accountability formula as a means of reallocating resources to school districts to close the achievement gap, rather than as a tool of maintaining the status quo. Currently, teachers in "A" rated Mississippi school districts and districts improving a letter grade based on the accountability formula are eligible for additional financial incentives through the Teacher Incentive Pay Plan. The accountability formula should be used as a means of directing state resources such as professional development and performance based incentives (based on the academic growth of students) to the districts in the greatest need.

Conclusion

Doing education equitably in Mississippi is a complex endeavor. History and the current moment both confirm that race, poverty, and teacher type overlap to create multifaceted challenges for largely African American school districts to overcome. In light of this reality, how will Mississippi educators and policy makers respond to the call to educate an increasingly diverse population of PreK-12 students? How will the gap ever be closed if the school

districts and students with the greatest needs consistently receive fewer resources and fewer qualified teachers? An important first step is to view and understand school accountability ratings and the achievement gap at the intersection of race, poverty, and teacher type. From there, the work continues with the willingness of policy makers and stakeholders to act on data and to develop policies and programs that funnel human and financial resources to the schools where they are most essential. In short, improving African American student achievement and making forward progress in terms of Mississippi's overall school district accountability ratings will require a staunch commitment to educational equity—a commitment that embraces the necessity of strategic investment of resources in school districts that are majority-minority and high poverty.

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