

**Tracing the Relationship of Overpopulated Public School Classrooms to Minority  
Students' End of Year Testing**

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**Abstract:**

The primary goal of this research is to detect any signs of larger class sizes negatively affecting the end of year scoring for minority students. By exploring this question through the framework of public school 4th graders, the author seeks to determine if minorities are significantly more threatened than white students. Through case studies and participant observation, this research will critically analyze the behaviors and mannerisms used by minority students in classrooms designated as overpopulated and those as appropriately sized. One classroom will be small and the other two will be overpopulated. The author will be present during class times and meticulously observe and document the behaviors of the children. Nine minority students were selected for this research (three from each class). The research will operate under critical race theory as to explicitly discern whether minority students are disproportionately harmed by class size. The findings show that the students tested above the state average but that this is directly tied to broader symptoms of oppression in the school system. There are many other elements involved in the classroom and beyond that have an equal impact on the overall development of minority students. These findings are important because they highlight how nuanced the issue of race in US education is; it can't simply be blamed on one problem but must be fully accounted for.

## **Introduction:**

Six years after the devastation of Hurricane Katrina, Tamica McClarty Pollard investigated the displacement caused by Hurricane Katrina and its long term effects on the educational development of children. The evacuations led to the displacement of 348,000 K-12 students who relocated to surrounding counties in outer reaches of Louisiana, Alabama and Mississippi. Coupled with this mass relocation were the facts that those primarily affected by displacement were minorities and that 40% of adults did not possess critical literacy skills. The damage of Hurricane Katrina threatened to perpetuate the cycle of illiteracy by failing to provide sustainable educational support for minority children displaced (Pollard 2011, 3).

While the events of Hurricane Katrina reflect a major issue regarding education and reintegration within the United States, this is an extreme case that does not share all the same dilemmas as other narratives. From a broader perspective, the issue lies with not providing minority students the foundation to succeed and develop in K-12 education. Students in larger classroom are given less room to succeed due to poor staffing and limited funds (Krueger 2003, 32). The current situation fails to be a positive, safe environment for minority students to excel.

My research question is *do larger class sizes lead to minorities performing worse on end of year testing?* Furthermore, this question posits whether larger class sizes have a detrimental effect on the development of minority students. This question warrants further research because of the economic and developmental reasons that not only plague the education system, but other systems as well. For as much as the United States spends annually on education, we are nowhere near the top of international rankings for multiple subjects. Part of this stems from a lack of action from government officials and school boards to distribute the money fairly between

counties. There is a glaring economic problem that results in fewer teachers for certain districts, which leads to larger class sizes. This results in students not having access to the necessary tools to further develop their skills (Kreuger 2003, 35). Within the framework of this research, theories centered on race and power will be emphasized. More specifically, the research will explore critical race theory to analyze how these structures put in place affect the long term development of students moving through the education system.

The plan for conducting research on the development of minority students in overpopulated classrooms is to utilize both qualitative and quantitative methods. The two methods intended for this research were case study and participant observation. I will reach out to three 4th grade classrooms that are defined as overpopulated and select a random sample of students to observe. Through these selected students, the goal is to detect themes in the behavior and mannerisms exuded. The number of students observed between the three classrooms will be nine. Participant observation ties into the case study in that I will be actively present in the classroom during sessions. My position will be in the back of the room observing any characteristics or behaviors from the students. The second half of my research will be collecting the students' previous test scores and their final standardized test scores at the conclusion of the class. From this point, I plan to plug the scores into SPSS and run the statistics through there in order to receive a quantifiable number.

The content of the research details the current state of education in the United States and certain instances that highlight voicelessness for minorities. After that brief intro, I will explain the structure of the classes as well as a general description of the students being studied. From there, I will compose my literature review which highlights the work I've annotated and to

demonstrate connections I have made with my content. After the literature review, I will expand upon the research methodology providing more specific reasons for studying these subjects. Following the methodology will be my list of results. To conclude, I will finish my research with some traditional closing remarks.

### **Critical Race Theory:**

In order to understand the narratives surrounding race and education, one must recognize the role of critical race theory. Given today's political climate, critical race theory is becoming an increasingly popular school of thinking in response to issues targeted towards minorities. The scholarship highlights that critical race theory is rooted in legal studies and the pursuit for social and cultural reform. Critical Race Theory challenges scholars and readers to remain aware of the societal pressures that exist to stifle the development of minorities. It is a social theory that arms minorities and activists with the tools to combat systems of oppression and recognize their existence (Ford 2010, 530). This theory is the framework from which I'll approach oversized classrooms that disproportionately affect minorities.

Further studies of this theory highlight that it promotes civic engagement and social responsibility. From a historical perspective, critical race theory was born out of the Civil Rights Era when legislation was being pushed forward that combated the long term effects of Jim Crow and Plessy v. Ferguson. Jim Crow existed to prevent equal access to developmental opportunities for African Americans; the legislation introduced in the 50s and 60s was a direct response to those years of oppression. In addition, it was rooted in a critical race ideology that encouraged activism and resistance of oppressive, white supremacist institutions. The primary goal was equality, and that position has not shifted over the years as oppressive structures still operate

under different guises. Critical race theorists still seek to address the social and cultural oppression that mainstream<sup>1</sup> society seems to regularly ignore or not even recognize. Radical reform of decades-long oppressive policy is the end-goal and continues to be since the beginning of Jim Crow (Price 2010, 150).

As social hierarchies are more realized and the economic gap between rich and poor increases, the more relevant the application of critical race theory becomes. Racism continues to exist and scholars and citizens alike are constantly reminded of it. However; there exist more subtle forms of racism that are more difficult to articulate to larger swaths of people. It is through these that critical race theorists continue to operate. (More specifically, through the context of US education, racism still exists, so in understanding critical race theory I hope to apply this research to addressing any forms of oppression encountered.

### **Class Size and Class Size Reduction:**

One of the most influential experiments conducted on class size was Project STAR. Conducted between 1985-1989, this study placed kindergarten into one of three class types, small, large and large with teaching aide, and observed their academic development. Across the four years, research indicated that students in smaller classrooms performed better in reading, writing and mathematics than those in the larger classes. The smaller classrooms more readily equipped students with the knowledge to fully comprehend the source material and perform very well with end of year testing (Milesi & Gamoran 2006, 290).

Project STAR addressed ongoing concerns that classroom sizes played a role in the development of student's education. Applying critical race theory to this experiment reveals that

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<sup>1</sup> Mainstream, in this context, can be also understood as "white".

students affected the most by crowded classroom settings are minority students. However, further scholarship into Project STAR suggests that there may be other underlying conditions affecting the performance of students. There are concerns as to whether or not the causal relationship posited by researchers for classroom size and scoring are misguided (Miles et. al 2006, 293).

There are hardly any gaps in the research for education and class size. Project STAR ushered in massive interest and since then the topic has been approached from multiple perspectives. Even scholars with an international scope are applying these types of studies into their school systems (Zhou et al. 2014, 85). Despite this, the education system still continues to fail large populations of students. With this in mind, it is important to continue conducting research on the subject matter in order to further analyze the issues surrounding education.

### **Hypotheses:**

Given the history of racism that exists in US education and the myriad of sociopolitical dilemmas surround minority development, it is difficult to pinpoint one singular contributing factor. Critical race theory teaches engaged citizens to remain constantly vigilant of any signs of racism. Racism manifests itself in many unique ways each requiring a different set of skills to combat. The issue of overpopulation in public school classrooms and its relationship to minority students' end of year testing is one such topic that is nuanced.

End of year testing can be linked to larger class sizes due to the lack of resources and management to properly equip students with the right knowledge. And this directly affects minority students at a far greater rate than white students since overpopulated classrooms primarily consist of black and latino students. But to see class size as the only contributor

towards lower test scores fails to understand the other social factors involved. The lack of school resources, low-quality teaching and parental involvement are other problems that weigh just as heavily on a student's progress. Minority students placed in environments within those contexts are just as likely to struggle with their education than solely their class size.

In summation, the primary hypotheses are:

1. There is a direct link between poor test scores for minority students and the size of the class they were in.
2. Class size is not the sole issue regarding poor test scores for these students.

Minority students are equally threatened by sociopolitical factors like school funding, strength of teachers and the quality of their home life.

### **Methodology:**

Before commencing the research, I had to apply for a special IRB form specifically offering me the opportunity to carefully observe the students in a classroom setting. Following that application, I needed to reach out to local public schools in Alamance County to determine if they were willing to participate in the study. It was beneficial towards my study if the school was sufficiently above the state averages for school population and 4th grade class size. The school chosen for this study, Highland Elementary<sup>2</sup>, fit this criteria.

In the state of North Carolina, the average student population of a public school is 499. In the district of Alamance County, where this research is being conducted, the average student population within public elementary schools is 518. Highland Elementary has a school population of 669 students, nearly 200 more than the state average. Their 4th grade classrooms

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<sup>2</sup> Highland Elementary is located in Burlington, NC. It goes K-5 and operates under the traditional calendar designated by the district



were reported to hold an average of 29 kids, which is eight more than the state average<sup>3</sup>. With that said, Highland Elementary fit the criteria for this research and was in support of the study (NC School Report Cards, 2012-2013).

I decided to target 4th grade class sizes for this research because it is one of the primary levels that helps transition students into middle school. There is sufficient education experience for these students to discern whether they are at grade level and to determine if trends can be identified as to their below average results. Choosing this grade provided more evidence for this research and offered a broader perspective of the types of students encountered at that level. Three classrooms were chosen to provide a balanced perspective from different teachers. 28% of teachers have 0-3 years of experience at Highland Elementary, which is 10% higher than the state average. This research seeked out one class with such a teacher so as to recognize all factors surrounding overpopulation (NC School Report Cards, 2012-2013)<sup>4</sup>.

Two classrooms would have over 29 students and one would have less than. The two larger classrooms had 32 and 35 students while the smaller classroom had 24. No teacher aides were involved within the classroom; the only person in a leadership position was the teacher. This dynamic was decided upon because it is important to compare class sizes for the overall development of minority students. The minority students would be randomly selected and there would be three for each of the classes observed. No other students will have data collected on them; the research will solely be on those nine students and their actions/behaviors alone.

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<sup>3</sup>Also mentioned is that the Alamance County School District suffered data entry issues for its “school report cards”. This means that even though Highland Elementary’s population is alarmingly high, there may be other schools in the district struggling unnoticed.

<sup>4</sup>See the chart in the Appendix for further data

The dependent variables for this research are understood as test scores and student behavior. The independent variable is understood as class size. Students were observed on two separate levels: one consisting of general observations of behavior and the other documenting how many times a student performed a certain action. The general note taking would highlight the course material of the day along with the mannerisms of the students. Posture, seat location, and attentiveness are concepts that fall under this portion of the observation (see Appendix for specifics of the note taking process). The second portion of the participant observation focused on the student's actions during the class session. Did the student raise their hand on a consistent basis? How did the student respond to a teacher question? Did the student take notes and/or write the assigned down in an agenda? A tally would be kept of how many times a student would complete these actions during a class session, through a week and through the semester (again, see the Appendix for a more detailed document). From there, the research will also collect the previous test scores of these students and match them up against state averages via SPSS. In addition, the test scores for their 4th grade end of year grading will undergo the same process and comparison.

### **Results:**

Critical Race Theory was the accurate approach to understanding the effects of class size on minority students. Especially in regards to the student behavior was critical race theory most prominently visible. When observing the behavior of the students, the majority of them were not active participants in the class setting. Of the nine students, only two contributed more than twice on average in class discussions. Out of the remaining seven, six would only speak if called upon

by the teacher. These responses were consistent in lacking eye contact, strong posture and other positions of engagement. In addition, these students also were prone to being easily distracted.

With that said, in a shocking result, the class dynamics did not reflect how well Highland Elementary scored in terms of proficiency. While not an explicit measurement of end of year scoring, it is still another scale to base development on. The proficiency results across elementary schools were:

#### PROFICIENCY<sup>5</sup>

Elementary

State: 56.3%

ABSS: 49.3%

South Mebane: 71.7%

Highland: 71.2%

Smith: 71%

E.M. Yoder: 65.4%

A.O.: 65%

E.M. Holt: 63.3%

Elon: 61.6%

Sylvan: 60.1%

Garrett: 57.1%

B. Everett Jordan: 47.2%

Hillcrest: 44.2%

Pleasant Grove: 41.4%

South Graham: 40.6%

Andrews: 40.1%

Grove Park: 38.8%

North Graham: 37%

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<sup>5</sup> Source - (Groves 2015, 1-2)

Haw River: 33.7%

Newlin: 29.5%

Eastlawn: 25.2%

Despite being in a position that was threatening to the overall development of students, there were many reasons beyond class size that the scores reflected this way. The overwhelming majority of students (66%) at Highland Elementary are white. There was 12% represented for both black and latino students. Even though the classes were larger, the fact that they were predominantly white is reflected in their proficiency scores. While it is difficult to discern that, the fact that only 31.2% of students require reduced lunch assistance, compared to the nearly 60% statewide, shows that the school is situated in less poor area ([elementaryschools.org](http://elementaryschools.org)).

The results reflect that, even if the scores remained high, that other factors are at play. Further research beyond the classroom showed that over 50% of citizens had at least a high school diploma with Highland's zip code (Movoto 2015). Highland Elementary also has a diversity score of 0.52 compared to the state average of 0.91 ([publicschoolreview](http://publicschoolreview) 2015). This proves the surrounding community of Highland elementary operates under a level of privilege neighboring schools cannot afford.

In terms of end of year scoring, from a statewide perspective the average number of black students that score above or the grade level is 14.2%. For hispanic students the numbers are slightly higher at 19.3%. From a district level Alamance County is below average scoring 13.3% and 16.6% for blacks and latinos respectively. Despite this, black students at Highland elementary scored at 30.% while latino students were at 21.2%. Doubling the state average is an amazing feat, but there are still issues present. White students still managed to perform

exceptionally well, having over 50% of students at grade level. This 20% percent gap at a privileged school opens an interesting dialogue about race in the classroom (NC Report Cards 2013). It presents the questions of what other pressures exist in the classroom beyond size? Minority students observed were far more reluctant to speak and quieter. They seemed less engaged with class discussion. Future research needs to explore other dynamics in the classroom to receive a better picture.

### **Conclusion:**

The results of this research indicate that there needs to be further work into the other factors contributing to poor scoring. Within the classroom alone, there were many other probable factors for their higher grade results. The research was limited to observing the nine students and their mannerisms; future research should be directed towards other elements of the classroom. While the research did present the preliminary hypothesis as accurate, it ignored other elements that additionally factor in.

With this in mind, the approach of critical race theory remains the standalone method of understanding these issues. The literature backing it recognizes how commonplace racism is that it just simply can't exist in one form. In addition, the research proves that Project STAR and subsequent iterations of it are outdated and lack the proper tools to address poor testing. Project STAR has succeeded in addressing class size as an issue but has failed to go even deeper (Mazzoni 1998, 26). Furthermore, researchers are commenting that the issue of class size is irrelevant compared to other problems within education. The estimated 12 billion dollars that could be saved is suggested to be better off applied to supporting stronger teacher registration or aid the plight of educational faculty more substantially (Finn & Petrilli 1998, 27). Other journals

have been published about these issues, but there still is a lack of an experimental model like Project STAR. There are many layers to oppression within the education system and it requires delicate observation and a critical eye in order to root it out. Progress cannot be truly made until we provide minority students the resources they need to excel in the classroom. White students continue to be catered to in a manner that places pressure on minorities. Future research must present alternatives to this model of understanding and provide a stronger support system for minority students to exceed.

## Appendix

Charts:

National Board Certified Teachers<sup>6</sup>

Highland Elementary	3
District	5
State	6

Years of Teaching Experience

	0-3 years	4-10 years	10+ years
Highland Elementary	28%	28%	44%
District	21%	31%	48%
State	18%	32%	50%

Student Evaluation Criteria<sup>7</sup>:

How many times did the student raise there hand?

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<sup>6</sup> Following two tables acquired from the 2011-2012 Quality Teachers Report Card

<sup>7</sup> for when the researcher was present in the room observing student behavior

What types of comments did the students make? Were they primarily answers? Or did the student emphasize asking questions?

What was the student's body language like?

Did he/she make eye contact with the teacher?

How audible was the student when speaking?

Did the student mumble?

Did the student make any physical tics when responding to a question/comment?

Where was the students attention directed towards?

What did the student have on their desk?

Where was the student seated? Was there assigned seating?

Who was the student sitting next to?

How did the student participate in class activities?

Did he/she take on leadership roles?

Did the student demonstrate any semblance of confidence in the material?

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