

# **The Effects of Poverty on Achievement Gap: A Quantitative Analysis Using Stratification Theory**

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## **Abstract**

The achievement of students in America's educational system has always been a topic of discussion. The number of children who excel in many other nations has always been higher than that of American pupils. Moreover, American students who are raised in wealthy families have greater success rates than those who are raised poor (see, for example, Dicker-Conlin and Rubinstein, 2007). The achievement gap among groups of students is determined by factors such as standardized test scores, grades, dropout rates, college enrollment, and college graduation percentages (see, for example, Attewell, 2007). The Stratification Theory has three aspects, which direct the distribution of power: (1) class, (2) status, and (3) party. Through this conceptual framework, it is hypothesized in this study that those students who live in poverty, compared to those who are wealthy, are taught to differing standards. Data were collected, with the utilization of the archival method, from books, scholarly journals, and online media sources. These sources were augmented by expert interviews. A quantitative analysis of the data shows a strong statistical relationship between power and accomplishment. The findings suggest that where the affluence stands, substantial triumph also stands.

**Keywords: Public Education System, United States, Poverty, Education Reform**

## **1. Introduction**

The children are the future. They are the individuals who are next to lead society. Consequently, it is essential that they be provided with an outstanding education. This however is not the case with all of America's children. It is also not a new epidemic. Every year students drop out or are kicked out of schools. Many of those who actually graduate can barely read, write, or solve basic math problems. There has been a disparity of achievement between those who have high socioeconomic statuses and those who do not. With the development of No Child Left Behind, it is even more imperative that we work harder to make sure that all children have the opportunity to become scholars.

Utilizing the theory of stratification this paper examines how class division allows for a distinction in the standards to which students are taught. Factors such as standardized test scores, grades, dropout rates, and college attendance and graduation rates are used to measure educational success. While some research may hold the school system itself responsible for lack of student achievement, others look towards the families of those students. Moreover, analysis of educational policies has found it to be partially a cause; above all, there is a strong statistical relationship between power and accomplishment.

The evidence of an achievement gap amidst the wealthy and the poor shows an inequality in the education system. As a result of inadequate instruction, students suffer not only in their present states but also in their futures. Individuals who received unsatisfactory schooling often face unemployment, welfare, and low standards of living when they are adults. Research has shown that low performance in school is directly related to drug abuse. Drug

abuse further correlates with health issues. Educational achievement is thus not only a matter in school but life overall (as shown in the data analysis section).

This paper analyzes the effects of poverty on educational achievement and a successful life. Success is defined here as achieving something attempted, desired, or planned; and poverty is defined as having little or no money, goods, or means of support. The paper focuses on the following questions: (1) How exactly is achievement defined? (2) How do different races compare the education system? (3) What effects do living conditions have on learning? (4) What changes can be made to improve education in the United States for all students? The study will primarily focus on public education from the past ten years to what the future holds for students. Investigating these questions allows the reader to come to terms with the issue in full detail and also understand its effects. It is important that the way students are taught is amended. The environment they are raised in must see an improvement as well. Discovering what allows for prosperous intellectuals and implanting this across the board will be the foundation for equal chance nationwide.

## 2. Literature Review

Although there has been much research on the educational system of the United States, there has not been much progress. Statistically, it has been shown that wealthy students excel more than those who are poverty-stricken. Many studies have determined why this is; however, there has not been a change that has allowed for less privileged students to compete with those who have an advantage. The following is a thematic review of a sample of works that have examined this pressing issue.

In the book, *City Schools and the American Dream: Reclaiming the Promise of Public Education* (2003), Pedro Noguera focuses on “finding hope among the hopeless.” He investigates how schools are working to provide equality and close the achievement gap. The city of Oakland, California, known for being a dangerous city, is used as a case study, proving the need for safety in schools. The ultimate question is “what will it take to improve America’s urban public schools?”

In the novel, *Teaching With Poverty in Mind: What Being Poor Does to Kids’ Brains and What Schools Can Do About It* (2009), by Eric Jensen, the impact of poverty is discussed. Jensen observes what poverty does to children, families and communities in the United States. Moreover, he shows how the lives of students can be improved through greater academic achievement, preparing them for life overall. The key point is that the mind has the potential to change over time and enables one to understand how disadvantaged kids can learn to think outside of their circumstances. A brain that can deal with situations that are detrimental can also take on conditions that are beneficial. Furthermore, Jensen explains the steps needed to make necessary changes that will inspire and enrich young minds.

Higher education is what powers upward mobility. However, not all students are able to grasp even a percentage of this power to the standard that they are able to make progress in life. In *Economic Inequality and Higher Education: Access, Persistence, and Success* (2007), Stacy Dickert-Conlin and Ross Rubenstein study the connection between differing income levels and unequal access to higher education. They question the disconnection state-mandated exams have with college placement exams, therefore calling for a change. There should be similar qualities of teaching from K-12 through college to prepare students for their futures.

The achievement gap has not always stayed the same. Between 1970 and 1988, the achievement gap between African American and White students decreased by 50 percent. After the year 1988, however, all forward movement stopped. Kati Haycock in “Closing the Achievement Gap” (2001) centers the attention of this issue on accurate data. She worries about all the educators who make decisions based on false information as to why there is an achievement gap. Haycock explains the gap, gives lessons on advancement, and provides examples of school systems where these lessons have worked.

In New York City, there are several schools that follow the “open admissions” policy. Students who have graduated from a New York City high school are accepted into one of the City Universities of New York. Paul Attewell, in *Passing the Torch: Does Higher Education for the Disadvantaged Pay Off Across the Generations?* (2007), researches generations of students under this policy. He examines identifies whether or not children of parents who have degrees are more likely to attend college or not. Policies such as affirmative action, open admission, and need-based financial aid have been criticized over time. It has been stated that schools are admitting students who are not qualified and will not benefit from a college education. These guidelines, nevertheless, allow for a reduction in educational gaps, creating a better life for students who live on the poverty line.

Is a difference in IQ only the result of environmental differences and the cultural bias of exams? Arthur R. Jensen explains the concept of IQ in his study “How Much Can We Boost IQ and Scholastic Achievement?” (1969) He

describes the separation of IQ into genetics and environmental elements. Arthur R. Jensen believes that genetics plays a bigger factor in IQ than one's surroundings. In addition, he is convinced that students can achieve more by having educational programs focusing on other issues rather than one's IQ.

Adding to one's cognitive ability, Guang Guo questions the timing of poverty and its influence on the mind. Ability is determined by the environment and genes received from a student's parents. Achievement is acquired. Guo's essay "The Timing of the Influences of Cumulative Poverty on Children's Cognitive Ability and Achievement" (1998) proves that long-term poverty has a great effect. However, poverty experienced in older years has more of an impact than poverty experienced in earlier years. Again, the point is made that the mind can be altered.

"An Attributional Analysis of Achievement Motivation" (1970) conducted by Bernard Weiner and Andy Kukla is composed of several experiments. The first three experiments center on achievement and its relation to a student's effort and ability. Social class and self-judgment were also considered. Experiments four and five incorporate individual differences. Results show that those who have much motivation take more responsibility for success rather than low achievement.

Being proficient in mathematics is necessary in life. In elementary school, pupils are taught to add, subtract, multiple, and divide. These are the basics to math. Poor funding and child poverty affects the mathematical achievement of students in American schools. Bruce J. Biddle and Kevin J. Payne research review this topic in the article "Poor School Funding, Child Poverty, and Mathematics Achievement" (1999). They offer new evidence on these effects and provide suggestions for improvement.

Life math, being literate is essential to making a substantial living. Approximately 107 first and second grade classrooms in 17 high poverty schools were investigated on students' reading skills. Classrooms were rated on the time the teachers spent on literacy and its effectiveness. This information was used to predict students' reading and spelling outcomes. Barbara R. Foorman and several researchers use this examination to compile "The Impact of Instructional Practices in Grades 1 and 2 on Reading and Spelling Achievement in High Poverty Schools" (2006).

Studies have been conducted with the focal point of improving achievement for students. Researchers have worked to close the achievement gap, specifically for low-income and minority students who live in high percentages of poverty. This study adds to this literature by showing that exemplary education is a prerequisite to success.

### **3. Theoretical Framework and Research Methodology**

The theory used to guide this study is that of stratification, which categorizes individuals socially and economically with regards to their class, status, and party. Stratification applies this theory to poverty and educational achievement to say that, these aspects have a direct relation to the academic attainment of pupils.

This theory is useful because it enables the analysis of strong statistical evidence of American students who are raised in affluence in comparison to those who are raised in poor households. Students in social classes with a great amount of power are considered to be elites and consequently are allowed the opportunity to attend prestige schools. Status also ties in with class. Those whose families hold high positions in society have better connections and access to superior educational institutions for their children. In reference to party, republicans usually consist of the upper class while democrats normally include the middle and lower classes that work harder to support their kin.

This conveys why stratification is important to this study. This paper stands on the position that students who hold certain characteristics excel in relation to those who possess inferior attributes. It does not matter whether a schoolchild is well off or needy, it is the chance they receive to do superbly in the classroom that is important.

The methodological approach used in this study is quantitative, which a usage of structured questions, with a focus on descriptive and informative explanations on the matter. Quantitative methodology refers to the systematic empirical investigation of quantitative properties. It produces a connection between empirical observation and mathematical expression of quantitative correlations. The examination of numerical data allows an in-depth analysis of how demographic characteristics have caused a difference in the educational achievement of youth.

In terms of quantitative research, the proposed variables are race, sex and gender. These aspects will be used in coordination with one's family income level. The research design used is Post-Test Only with nonequivalent groups and consequently pre-experimental as a result of the factors analyzed. The population investigated consists of students in the United States public education system.

The hypothesis tested in this study is as follows: Students who live in poverty as compared to those who are wealthy, are taught to differing standards consequently, students are not allotted an equal opportunity in their schooling. The level of analysis is macro; multiple systems in the Department of Education are reviewed.

Data were collected, with the utilization of the archival method, from books, scholarly journals, and online media sources. Reports by research institutions were used to augment these sources. The information found was used to understand why there is an inequality in the educational department. These techniques were chosen because one needs to know the foundation that stands as the base for this problem.

#### 4. Data Analysis

The research findings of this study are thematically grouped into two subsections. The findings and statistics are of the public education system in terms of race, sex, and age. The first set of data displays the number of children living in poverty. Following is the breakdown of test scores. Last is the almost guaranteed outcome of receiving a substandard education for many years. The second part is the effects and aftermath of the facts found during the data analysis. The purpose is to provide a breakdown of the effects of poverty on education. These findings are found from the U.S. Department of Education Institute of Educational Sciences and the U.S. Department of Education's National Center for Education Statistics (1999-2008).

##### 4.1. Statistical Findings

In 2007, African Americans held the highest percentage of children under 18 living in poverty. They were followed by Hispanics and lastly Whites. There was a 24% difference between the percentages of African American children whose family's total income was less than the federally set threshold and the rate of white offspring. This shows that a majority of those students who live in penury are black. The more a population is in poverty, the less likely there is to get an above standard education.

Table 1: Percentage of children under age 18 living in poverty, by race/ethnicity 2007

| Race/ethnicity | Percent of Children |
|----------------|---------------------|
| Total          | 17.5                |
| White          | 10.1                |
| Black          | 34.1                |
| Hispanic       | 27.1                |

Source: U.S Department of Education Institute of Educational Sciences

Table 2: Average reading scale score, age 17, by sex and race: Selected years, 1999 through 2008

| Selected student and school characteristic | 1999      | 2004      | 2008      |
|--|-----------|-----------|-----------|
| 17-year-olds                               |           |           |           |
| All students .....                         | 288 (1.3) | 283 (1.1) | 286 (0.9) |
| Sex  |           |           |           |
| Male .....                                 | 281 (1.6) | 276 (1.4) | 280 (1.1) |
| Female .....                               | 295 (1.4) | 289 (1.2) | 291 (1.0) |
| Race/ethnicity                             |           |           |           |
| White .....                                | 295 (1.4) | 289 (1.2) | 295 (1.0) |
| Black .....                                | 264 (1.7) | 262 (1.9) | 266 (2.4) |
| Hispanic .....                             | 271 (3.9) | 267 (2.5) | 269 (1.3) |

Source: U.S. Department of Education's National Center for Education Statistics

Table 2 depicts the average reading scale scores by sex and race of 17-year-olds through selected years of 1999 through 2008. Females show the greatest drop in score between 1999 and 2008. The scores of whites stay the same at 295 while, blacks raise 2 points to 266. This is a 29-point difference. Hispanics fall 2 points from 271 to 269. Blacks have the lowest results in reading. Tests serve to show how well a student can perform in a subject after being taught such material.

Table 3 displays the percentage of students at or above selected mathematics proficiency levels by age, sex and race/ethnicity in selected years 1999 through 2008. Female students start off leading males in 1999 in numerical operations and beginning problem solving. They score lower than males in moderately complex procedures and reasoning and multistep problem solving and algebra and continue to do worst than males through 2004 and 2008. Except for 2004 when they are .3 above males in beginning problem solving. Black students once again score lower than both White and Hispanic students in all levels in the years 1999, 2004, and 2008. In multistep problem solving, very low standing is shown among African Americans.

Table 3: Percentage of students at or above selected mathematics proficiency levels, age 17, by sex, and race/ethnicity: Selected years, 1999 through 2008

| Selected characteristic | 17-year-olds                                       |        |   |        |                                       |        |
|-------------------------|--|--------|---|--------|---------------------------------------|--------|
|                         | Numerical operations and beginning problem solving |        | Moderately complex procedures and reasoning |        | Multistep problem solving and algebra |        |
| <b>Total</b>            |  |        |   |        |                                       |        |
| 1999 .....              | 96.8   | (0.45) | 60.7  | (1.63) | 8.4                                   | (0.83) |
| 2004 .....              | 95.8   | (0.40) | 58.3  | (1.12) | 6.1                                   | (0.47) |
| 2008 .....              | 96.0   | (0.37) | 59.4  | (0.87) | 6.2                                   | (0.40) |
| <b>Male</b>             |  |        |   |        |                                       |        |
| 1999 .....              | 96.5   | (0.81) | 63.1  | (2.12) | 9.8                                   | (1.09) |
| 2004 .....              | 95.6   | (0.45) | 60.8  | (1.31) | 7.3                                   | (0.68) |
| 2008 .....              | 96.2   | (0.47) | 62.9  | (0.96) | 7.6                                   | (0.61) |
| <b>Female</b>           |  |        |   |        |                                       |        |
| 1999 .....              | 97.2   | (0.40) | 58.5  | (1.89) | 7.1                                   | (1.06) |
| 2004 .....              | 95.9   | (0.58) | 55.9  | (1.18) | 4.9                                   | (0.48) |
| 2008 .....              | 95.7   | (0.43) | 55.8  | (1.25) | 4.6                                   | (0.34) |
| <b>White</b>            |  |        |   |        |                                       |        |
| 1999 .....              | 98.7   | (0.40) | 69.9  | (1.96) | 10.4                                  | (1.07) |
| 2004 .....              | 97.5   | (0.28) | 66.8  | (1.08) | 7.6                                   | (0.63) |
| 2008 .....              | 98.2   | (0.26) | 70.5  | (1.09) | 8.1                                   | (0.55) |
| <b>Black</b>            |  |        |   |        |                                       |        |
| 1999 .....              | 88.6   | (1.95) | 26.6  | (2.70) | 1.0                                   | (---)  |
| 2004 .....              | 89.1   | (1.63) | 29.4  | (2.07) | 0.4                                   | (---)  |
| 2008 .....              | 90.6   | (1.42) | 31.8  | (1.60) | 0.8                                   | (0.23) |
| <b>Hispanic</b>         |  |        |   |        |                                       |        |
| 1999 .....              | 93.6   | (2.21) | 37.7  | (4.15) | 3.1                                   | (1.12) |
| 2004 .....              | 92.3   | (1.05) | 38.1  | (2.12) | 1.9                                   | (0.60) |
| 2008 .....              | 92.2   | (1.10) | 41.1  | (1.69) | 1.5                                   | (0.41) |

Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), NAEP 1999 Trends in Academic Progress; and 2004 and 2008 Long-Term Trend Mathematics Assessments, retrieved May 4, 2009, from the Long-Term Trend NAEP Data Explorer (<http://nces.ed.gov/nationsreportcard/naepdata/>). (This table was prepared June 2009.)

Minorities, Whites and Hispanic show the biggest numbers of dropouts of 16 through 24 year olds in selected years of 2000 through 2007. In 2000, Whites had a total of 6.9% of dropout while Hispanics had 27.8%. This is almost four times as much. Whites hold a lower percentage as compared to Blacks and Hispanics in every year. Due to poor living conditions and consequently failing schools we can conclude that minorities tend to give up in school as a result of factors many Whites do not face in their schooling.

Table 4: Status dropout rates of 16-through-24-year-olds, by race/ethnicity: Selected years, 2000-2007

| Year | Total | White | Black | Hispanic |
|------|-------|-------|-------|----------|
| 2000 | 10.9  | 6.9   | 13.1  | 27.8     |
| 2004 | 10.3  | 6.8   | 11.8  | 23.8     |
| 2005 | 9.4   | 6.0   | 10.4  | 22.4     |
| 2006 | 9.3   | 5.8   | 10.7  | 22.1     |
| 2007 | 8.7   | 5.3   | 8.4   | 21.4     |

Source: U.S. Department of Education, National Center for Education Statistics. (2009). *The Condition of Education 2009* (NCES 2009-081).

## 4.2. Effects and Aftermath

Those who live in poverty have been shown face emotional and social challenges, acute and chronic stressors, cognitive lags, and health and safety issues. Children who are raised in poverty behave differently from those who do not. The challenges they face are overwhelming and are some affluent children will never even have to imagine. These obstacles affect academic and social success.

Students whose families are poor may “act-out”, be impatience and impulsive and show less empathy for others who may face misfortune. Impoverished children may be subject to health and safety issues such as malnutrition, dangers in the home, and insufficient health care. This may lead to more absences from school, tardiness, and undiagnosed illnesses and disabilities, which may hinder their learning process.

Schools in high-poverty areas are given less funding than schools that already thrive in wealth. Furthermore, these schools are more likely to have teachers who teach subjects that are outside of their concentration. When given standardized tests, these pupils have shown a correlation between poverty and low cognitive achievement (Jensen, 2009). Given the preceding findings, it is not farfetched to suggest that poor achievement then relates to self-esteem. In essence, students with low expectations set themselves up for very little success in life.

## 4.3. Expert Interviews

Two experts who have worked in the United States education system for many years were interviewed to strengthen this research. The first was interviewed on December 20, 2010 and the second on December 21, 2010. Dr. Michael Wallace is the Assistant Director in the Office of Institutional Assessment and Evaluation at Howard University. The Office of Institutional Assessment and Evaluation works to develop and conduct assessments at Howard University which are used to examine academic programs and provide assistance to improve these programs in the effort to work towards the University’s mission. Matthew Meyerson is the Assistant Principal of the Health and Physical Education Department at Clara Barton High School in New York. He has nine years of teaching experience and two years of administrative experience in the New York Department of Education.

Dr. Wallace explained that according to test scores in well-documented literature Blacks and Hispanics have been shown to fall below Whites. “This is called the achievement gap and when people say they want to close the ‘gap’, this is the gap they are talking about,” stated Dr. Wallace. He also added that at times in subjects such as math, Asians tend to outperform Whites. He pointed out that this might be a result of the Asian culture in which there is a major focus on education. There was also agreement that poverty affects children very much. “Children in poverty have a multitude of barriers to overcome. Children need proper shelter, food, and may have health disadvantages caused by poverty,” he added. Poverty affects the whole family. Parents who have to work long hours just to feed their families spend less time at home and thus this affects the nurturing that the child receives. Exposure to drugs and/or alcohol also affects the child, even before they may start school. This also puts more pressure on their teacher (personal interview, December 20, 2010).

Meyerson named four key reasons he believed caused students drop out of high school. (1) Peer pressure, (2) Gang involvement, (3) Family issues, (4) Being emotionally disturbed. Students who follow the “wrong crowd”, have no time for school because they are taking part in a gang, have to work to support their families, or just cant mentally function in school all tend to not complete high school. At times, students are not open with school administrators about their social status and thus may miss the opportunity to receive assistance from the school. Meyerson also noted that poverty affects the child in a strong emotional form. “Students may not be able to keep up with the latest clothing trends or attend school events like their classmates. Students are at most times embarrassed by this” (personal interview, December 21, 2010).

Dr. Wallace and Meyerson both agree that the United States Department of Education needs to stop moving in a circular manner when making changes to education policy. “We, as a nation, have to make the things that we say happen,” stated Dr. Wallace. Research has been done for decades that points to the exact issues within the system. Meyerson believes that “teachers need to teach”. He does not agree with the department’s method to pressure teachers. This causes teachers to be overworked and unpaid, not addressing the student’s needs. Meyerson declared that “basic teaching” should be the department’s focus. Through a collective effort including students, teachers, administrators, and policy makers, the necessary modifications to the school system can be made to benefit all those involved.

## 5. Conclusion

The main objective of this study was to show the effects of poverty on educational achievement. In addition, the findings show that socioeconomic factors add to differing learning environments. The use of Stratification Theory shows how African Americans have held the lowest position on the ladder over a great period of time. This claim is supported by the findings in the data analysis section.

Many African American children live in poverty and attend schools that are below standard. There must be changes made to fix this issue. The communities in which these children are raised must first be improved. Parents should be able to provide the best for their children. Also, the schools must be reformed allowing children to learn at the same level as their counterparts. Assistance through financial needs and in planning must be given from the government to help the people in America who deserve equal treatment. High poverty neighborhoods and schools that are inferior to others do not enhance the life of needy children but rather make their chances at prosperity falter. Every human being in the United States should be granted the opportunity to achieve the “American Dream” and to begin this dream; an outstanding education must be attained.

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