

The Achievement Gap in US Education

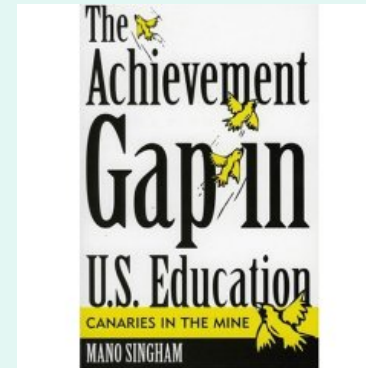
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Case Western Reserve University

Thursday, August 25, 2011

Greater Cleveland Congregations

First Baptist Church, Shaker Heights



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The fundamental puzzle

- Learning is natural and enjoyable
- Very young children love to learn
- By upper elementary school, learning has become a chore for *nearly everyone* (including those in private and parochial schools)
- Very few people retain or recover their childhood pleasure in learning

Why and what can we do about it?

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“All men by nature desire to know”
- Aristotle, *Metaphysics*



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Outline of talk

1. Framing the discussion
2. Why things are this way
3. Success stories
4. Lessons from success stories
5. Myths about the causes of the gap
6. More promising analyses of causes

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NAEP 12th grade mathematics

Benchmarks (0-300 scale)

- 141 - Basic level (partial mastery of knowledge and skills that are fundamental for proficient work)
- 176 - Proficient level (solid academic performance, demonstrates competency over challenging subject matter). **NAEP believes all students should reach at least this level**
- 216 - Advanced level (superior performance)

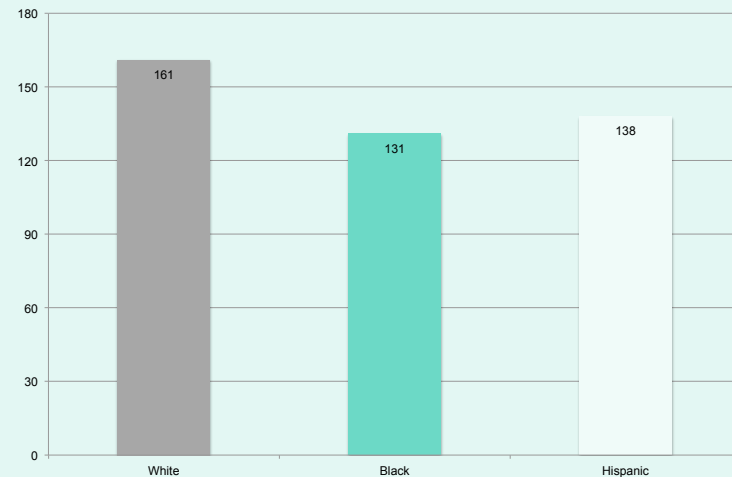
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Results in 2009

- Average scores:
 - Whites 161
 - Blacks 131
 - Hispanics is 138
- Proficiency:
 - Whites 33%
 - Blacks 6%
 - Hispanics 11%
- Advanced:
 - Only 3% of whites reached advanced level
 - number of blacks and Hispanics is *too small to measure*.

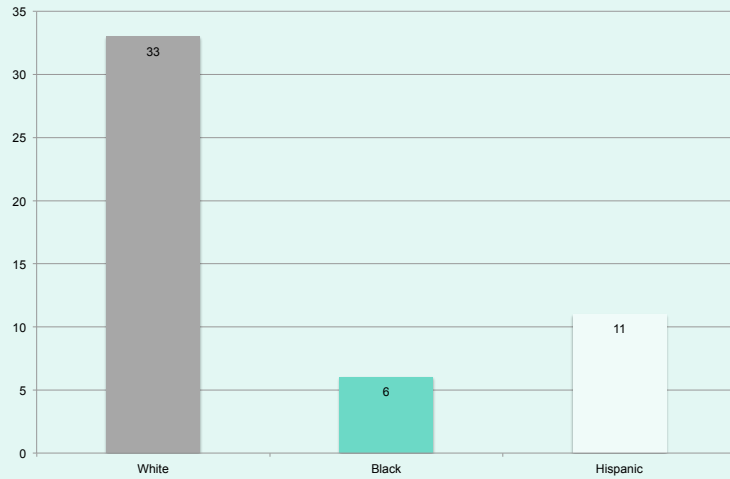
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2009 NAEP Grade 12 average-math



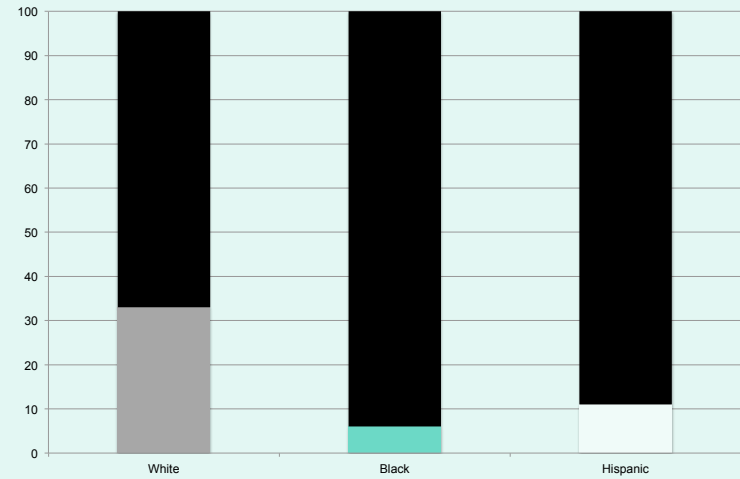
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% that attain proficiency



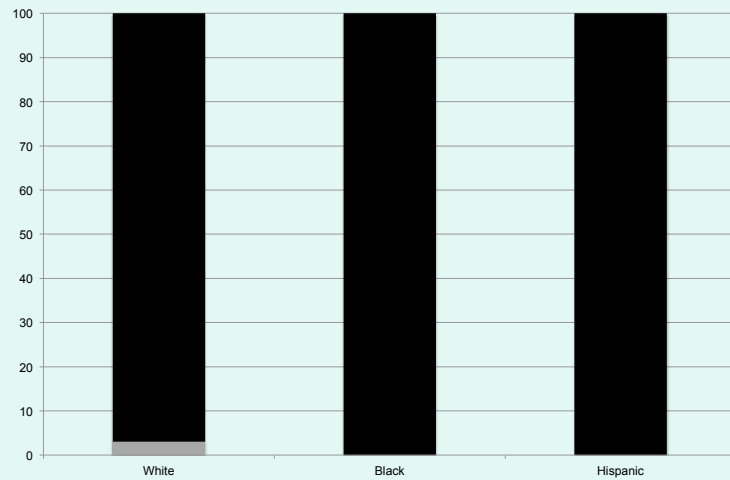
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% below proficiency



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% below advanced



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Problem: Misguided
Ignores the fact that a large number of white students are also *seriously underachieving*

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Problem: Divisive

“The starting point of American racism is the assumption that white people and their institutions represent the proper, normative standards against which all other people and institutions are judged. Once the white normative assumption is internalized, a racist worldview flows from it as surely as water to the sea, polluting every social space in its path.”

- Glen Ford

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CONCLUSION

Educational underachievement is
deep,
across all communities,
and endemic

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Part 2

Why things are the way
they are

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Standard hypothesis:

System has good intentions but has gone awry in implementation.

Alternative hypothesis:

System has bad intentions and is very successful

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Voltaire: “The comfort of the rich depends upon the abundance of the poor.”

Dr. Martin Luther King, Jr.: “Depressed living standards for Negroes are not simply the consequence of neglect... They are a structural part of the economic system in the United States. Certain industries and enterprises are based upon a supply of low-paid, under-skilled and immobile nonwhite labor. Hand assembly factories, hospitals, service industries, housework, agricultural operations using itinerant labor would suffer economic trauma, if not disaster, with a rise in wage scales.”

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Malfunctioning schools
are the way they are
because
present society
needs
a lot of low-achieving students

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Three functions of education (Dewey)

- Developmental: Grow in physical, cognitive, emotional, moral, and aesthetic qualities
- Egalitarian: Give everyone a chance to compete equally
- Integrative: Enable a smooth transition into occupations and political and social life

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Q: What happens if “occupations and political and social life” of integrative goal conflict with the developmental and egalitarian goals?

A: The first two goals are ignored in order to meet the third.

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U.S. Bureau of Education (1872)

Expresses concern that
“‘inculcating knowledge’ teaches
workers to be able to ‘perceive and
calculate the grievances,’ thus
making them ‘more redoubtable
foes’ in labor struggles.”

- John Taylor Gatto, *The Underground History of American
Education*, 2003

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Report of the Senate Committee on Education (1888)

“We believe that education is one of the
principal causes of discontent of late
years manifesting itself among the
laboring classes.”

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Elwood Cubberly (future Dean of Education at Stanford) (1905)

Schools should be factories “in which
raw products, children, are to be shaped
and formed into finished products ...
manufactured like nails, and the
specifications for manufacturing will
come from government and industry.”

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Rockefeller Education Board (1906)

“In our dreams...people yield themselves with
perfect docility to our molding hands. The
present educational conventions [*intellectual
and character education*] fade from our
minds, and unhampered by tradition we work
our own good will upon a grateful and
responsive folk. We shall not try to make
these people or any of their children into
philosophers or men of learning or men of
science.

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Rockefeller, continued:

“We have not to raise up from among them authors, educators, poets or men of letters. We shall not search for embryo great artists, painters, musicians, nor lawyers, doctors, preachers, politicians, statesmen, *of whom we have ample supply*. The task we set before ourselves is very simple...we will organize children...and teach them to do in a perfect way the things their fathers and mothers are doing in an imperfect way.” (emphasis added)

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William Torrey Harris, U.S. Commissioner
of Education (1889-1906)

“Ninety-nine [students] out of a hundred are automata, careful to walk in prescribed paths, careful to follow the prescribed custom. *This is not an accident but the result of substantial education*, which, scientifically defined, is the subsumption of the individual.” (emphasis added)

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President Woodrow Wilson

“We want one class to have a liberal education. We want another class, a very much larger class of necessity, to forego the privilege of a liberal education and fit themselves to perform specific difficult manual tasks.”

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Schooling in Capitalist America

Bowles and Gintis (1976)

“These differences in the social relationships among and within schools, in part, reflect both the social backgrounds of the student body and their likely future economic positions. Thus blacks and other minorities are concentrated in schools whose repressive, arbitrary, generally chaotic internal order, coercive authority structures, and minimal possibilities for advancement mirror the characteristics of inferior job situations...

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“...Similarly, predominantly working-class schools tend to emphasize behavioral control and rule-following, while schools in well-to-do suburbs employ relatively open systems that favor greater student participation, less direct supervision, more student electives, and, in general, a value system stressing internalized standards of control.”

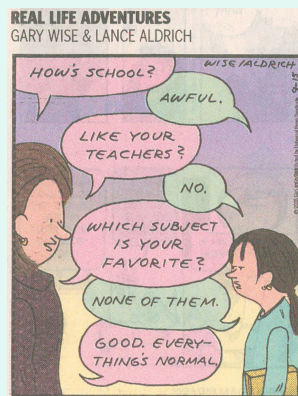
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Smooth integration

Present day schools are a ‘success’ not a failure, because they produce students whose *negative attitude towards school is the same as adults’ negative attitudes towards work*

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Unfortunately true



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- Good **public** schooling is the bedrock of a just and equitable society, but
- ‘Accountability’ and high-stakes, high-frequency testing are being **used to undermine support for public schools** by making them seem like failures

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Why the canary metaphor?

- If these policies had produced huge disparities that were *indiscriminate* with respect to ethnicity and gender, there would have been no problem.
- People would have shrugged that some people were smart but most were stupid.

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- But the plan to create an educational system to produce a large number of ‘failures’ had a *differentially negative impact on students based on ethnicity*, and thus created a *political* problem.
- Hence the achievement gap serves as a ‘canary in the mine’, alerting us to what is really going on.

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Part 3: Success stories

- Pittsburgh study - Schoenfeld
- Berkeley study - Treisman
- HS&B study - Adelman
- Xavier University

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Pittsburgh math study

- 40,000 students (B-56%,W-44%, 60% free lunch)
- Strong implementation teachers (used NCTM standards-based reform curriculum, manipulatives, and cooperative learning)
- Compared strong implementation ***schools*** vs weak implementation ***schools***

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Strong-weak comparison

- Basic skills (W:48→72%;B:30→75%)
- Problem solving (W:18→54%;B:4→32%)
- Concepts (W:20→60%;B:4→40%)
- The results show that use of the reform curricula increased the performance of **both** groups in **all** categories, with black improvements being proportionately greater

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Berkeley study-Treisman

- Compared Asian and black student practices
- Created heterogeneous groups
- Provided challenging problems (NOT remedial)
- Created conditions for active, collaborative work

Result: Black student performance improved by a letter grade

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HS&B study-Adelman

This study followed a national sample of 28,000 students HS sophomores in 1980 until 1993 (roughly age 30) to see the factors that affected college graduation rates.

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- Socioeconomic status provides very modest contribution
- Race/ethnicity matters very, very little
- Students in lowest two SES quintiles with the highest academic resources (composite of HS curriculum, test scores, and class rank) graduated at higher rates than the majority of students in the highest SES quintile.
- Impact of HS curriculum is far more pronounced positively for black and latino students than any other measure.

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- Most important variable is academic intensity and quality of HS curriculum. This consistently overwhelms demographic variables (gender, race, SES).
- Of HS curricula, the highest level of mathematics has the strongest influence on degree completion. Finishing a course beyond the level of Algebra 2 (for example, taking trigonometry or pre-calculus) more than doubles the odds that a student who enters college will complete a bachelor's degree.

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Xavier University

- Planned program that stresses the importance of higher-level thinking skills (Whimbey)
- Challenging nature of the academic program
- Emphasis on excellence not remediation

Result: Xavier is single biggest supplier of black graduates to medical schools, despite its relatively small enrollment

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Main conclusion:

Good teaching for *all* students reduces achievement gaps while poor teaching increases them

=> Size of the achievement gap is a measure of the quality of educational system

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Part 4

Lessons from success stories

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Lessons learned

- Success stories are ethnicity-neutral
- Focus is on challenge, not remediation
- Cooperative learning is key component
- ***All students improve but black students improve more, thus reducing the gaps***

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GENERAL CONCLUSION

It is possible to greatly reduce (and in some areas eliminate) the gap in achievement through educational measures that are not directly targeting the achievement gap. The successful educational remedies adopted were not race-specific. The reductions in gaps were achieved by a general focus on ***improving the education of all students, whatever their ethnicity, gender, or socioeconomic status.***

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TEACHERS MATTER!

- Effective teachers produce as much as **six times** the learning gains produced by least effective teachers
- 81% of black v. 28% of white females, 62% of black v. 32% of white males want to please the teacher more than they do the parent

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Why teachers matter

- Teachers have lower expectations for black students than for white students *but* teachers expect less of blacks than of whites because black students' past performance and behavior have been worse
- Once set, teacher expectations do not change much.
- Teachers need professional development programs in which they can actually see disadvantaged black children performing at high levels.

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MYTH

We could be better teachers if we only had better students

REALITY

We will have better students if we have better teaching

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“Motivation is a product of good teaching, not a prerequisite for it.”

- John Biggs, *Teaching for Quality Learning at University* (1999) Why things are this way

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What it will take to achieve success

Teachers who have:

- Strong content knowledge
- Pedagogical content knowledge. (e.g. discipline-specific learning obstacles)
- Generic teaching skills (cooperative learning, inquiry-based, active engagement, immediacies, creation of classroom atmosphere conducive to learning)

How People Learn: Brain, Mind, Experience, and School
(National Research Council, 1999)

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Good teaching practice:

- Uses metaphor of teacher as gardener
- Emphasizes learning for its own sake
- Uses knowledge of how brain works (prior knowledge, learning cycle)
- Focuses on creating *expert learners* and not ‘experts’ (meta-cognition)
- Aligns goals, methods, assessments

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- Minimizes and varies assessments
- Measures only the things worth measuring, not those that are easily measured
- Emphasizes formative assessments and prescriptive feedback
- Focuses on creation of conditions for enhancing *intrinsic* (as opposed to extrinsic) motivation
- Uses cooperative learning methods

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It takes a very skilled teacher to make students realize that only they can learn, to create in them the desire to learn, to provide them with the resources to learn, and to help them develop the skills they need to learn.

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What Teachers Need

- professional development more than equipment and supplies
- clear goals and standards at benchmark levels
- more autonomy and respect as professionals

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What it takes

- Better *pre-service* training with a strong content knowledge emphasis
- About *ten* years of sustained support and professional development (collaborative study, observation, curricular knowledge, and lesson refinement as part of their *ongoing daily responsibilities*) for *in-service* teachers
- More teacher autonomy, and less central control and direction

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We also need to:

- Create an awareness that achievement gap is a symptom of *widespread* educational failure, not a problem that lies buried in minority students alone
- Create a high quality teaching force that understands that learning is voluntary, knows what conditions make people want to learn, and have the skills to create those conditions and support the students in their efforts
- Create school environments that supports such teachers in their efforts

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Part 5: Myths about achievement gap

- Socio-economic status (SES)
- Genetic
- Socio-pathological
 - unstable families, lack of parental involvement in education, negative peer-pressure, poor role models from popular culture, drugs and crime

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Other myths

- Biased standardized tests
- Tracking/leveling/ability grouping
- Large class sizes
- Insufficient numbers of black teachers
- Low teacher expectations of black students
- Teacher bias against black students

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- Different learning styles of black students
- Different kinds of intelligences not measured by standard assessment practices.
- Low self-esteem of black students

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Problems with SES

- Test score gap shrinks only a little when black and white children attend the same schools, when families have the same amount of schooling, the same income, and the same wealth. **Usual SES (income, wealth, parents' education) 'explains' only 1/3 of gap**
- **Broader SES** (grandparents' education, mother's household size, mother's high school quality, mother's perceived self-efficacy, children's birth weight, children's household size) **explains 1/2 of gap**
- Same average amount spent per student
 - Jencks and Phillips, *Black-White Test Score Gap*

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- SES and ethnicity do not explain college graduation rates
- Black students from families with incomes of more than \$100,000 had a mean SAT score that was 142 points below the mean score for whites from families at the same income level.

**'FAILURE' OF SES EXPLANATION
IS GOOD NEWS!**

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Case against socio-pathology

- Academic social costs/benefits same
- Single mother household results not inferior
- Black parents support higher level classes
- Homework time same for all
- Differences negligible for skipping school

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Case against other myths

- Overt standardized test biases eliminated
- Black students earn lower college grades than whites with same SAT scores
- Race of teacher has little effect on student performance.
- Class size effect is small (reducing from 23 to 15 in K-3 raised reading and math scores by 1/3 standard deviations for blacks and 1/6 standard deviations for whites). Effect is even smaller in higher grades
- Self-esteem issue is complex
- Learning style/different intelligences issues complex

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Genetics

Evolutionary pressures have resulted in black people having lower intelligence (as measured by IQ) and this barrier cannot be overcome by education

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“Once hereditarianism percolates into popular culture, it can easily become an excuse for treating academic failure as an inescapable fact of nature.”

- Christopher Jencks and Meredith Phillips

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The case against genetics

- ‘Race’ rejected as a biological concept
- Meaning of IQ scores is unclear
- IQ scores show dependency on education (~2.5 points/year)
- IQ scores have risen rapidly over last 50 years (~5 points every 15 years)
- Black students have gained 4-7 IQ points over non-Hispanic whites from 1972 to 2002
- Black students IQ is 95.4 at age 4, 90.5 at age 12 and 87.0 at age 18
- Buraku and Korean students in US and Japan

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Part 6: More promising analyses

- ‘Raceless’ behavior and group identity - Ogbu/Fordham
- Isolated study patterns - Fordham
- ‘Stereotype threats’ - Steele/Aronson
- Minority-dominant relationships and effort-reward perceptions - Ogbu

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What students need

- Classroom conditions conducive to learning and intrinsic motivation
- Autonomy and respect
- Diagnostic, prescriptive, neutral feedback
- Active learning opportunities
- Opportunities to work collaboratively
- Choices and options in what they learn, how they learn, how they are assessed
- Challenging curriculum and support to meet goals
- Hands-on activities
- Inquiry-based lessons
- Alignment of goals, teaching methods, and assessment

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Black students are:

- four times as likely to be assessed using hands-on activities only once or less per grading period
 - twice as likely to have a science teacher who does not emphasize development of data analysis skills
 - three times as likely to engage in hands-on activities less than twice a month
 - less likely to have a teacher who participated in professional development the previous year
 - much less likely to have a certified teacher who has subject competency
 - much less likely to have all the necessary materials
- *Education Trust report*

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STUDENT ATTITUDES abstract /optimistic

(attitudes that reflect mainstream ideology about education)

- Education is the key to success in the future
- If everyone in America gets a good education, we can end poverty
- Achievement and effort in school lead to job success later on
- The way for poor people to become middle class is for them to get a good education
- School success is a clear path to a better life
- Getting a good education is a practical road to success for a young black/white man/woman like me
- Young black/white men/women like me have a chance of making it if we do well in school
- Education really pays off in the future for young black/white men/women like me

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STUDENT ATTITUDES realistic/fairness

(attitudes that represent doubt and ambivalence)

- Based on their experiences, my parents say people like me are not always paid or promoted according to their education
- All I need to learn for my future is to read, write, and make change
- Although my parents tell me to get a good education to get a good job, they face barriers to job success
- When our teachers give us homework, my friends never think of doing it
- People in my family haven't been treated fairly at work, no matter how much education they have
- Studying in school rarely pays off later with good jobs

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Result

Black students express greater agreement than whites with abstract/optimistic but are less hopeful about fairness. This may explain why black students behave in ways that show less commitment to mainstream success.

Ronald Ferguson, *Teachers' Expectations and the Test Score Gap*, in Jencks and Phillips, eds., *The Black-White Test Score Gap*

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Ogbu study of Shaker Heights

- When asked what it takes to succeed in school, the black students recited a list of things that they needed to do that would make any traditional educator proud: go to class regularly, listen to the teacher, work hard, do the homework, etc.
- ***But when asked if they actually did any of those things, they said they didn't.***

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Aristotelian Pledge for Educators

- We pledge to have as our fundamental goal in teaching any subject, to create in our students a love of learning for its own sake.
- We pledge to work towards growth in the physical, cognitive, emotional, moral and aesthetic qualities of children.
- We pledge to give everyone a chance to compete equally, by enabling education to overcome differentials in income and family background.
- We pledge to work with our students to create a society where children nurtured by the first three goals can achieve a smooth transition into compatible occupations and political and social life, so that they may lead fulfilling lives.

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Questions? Comments?

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