

A Review of Two Ethnic Groups, African Americans and Asian Americans, Competing for a Place in Stem Programs

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ABSTRACT

This position paper seeks to shine a spotlight on the urgent challenges that African American students encounter in their pursuit of STEM (Science, Technology, Engineering, and Mathematics) programs. It will also delve into the contentious debates between advocates for Asian and Black students regarding school admission policies. A crucial case that will serve as a focal point for fostering dialogue on this important issue is the recent court case, *Students for Fair Admissions v. Harvard*. By examining these complexities, we can better understand the need for equitable opportunities and support for all students in their educational journeys.

Introduction

The struggle for racial equity has deep historical roots in Black America, where both STEM education and social justice issues remain high priorities for African American students. Renowned historian Barbara Sizemore highlighted an urgent concern for educators regarding these students. She insisted on the necessity to “lobby against any school organizations that allow students to fall below national standards in reading and mathematics and to demand the implementation of more effective routines” (p. 78). Sizemore’s passionate advocacy for African American students also encompassed initiatives in STEM. STEM education was originally designed with a primary focus on upper- and middle-class white students, aiming to prepare them for lucrative careers in fields such as science, statistics, and psychology [1,2].

Alarming, a report from the U.S. Department of Education (2018) and the Office for Civil Rights found that, during the 2015-2016 academic year, African American students represented only 15 percent of participants in STEM programs. A study involving 5,000 high school students revealed that Black students were disproportionately funneled into low-level math and science courses, creating a systemic barrier to higher-level academic opportunities. Furthermore, research by Arcidiacono et al. indicated that Black students may have achieved better

graduation rates had they attended lower-ranked schools rather than high-ranking ones (p. 525). To combat these disparities, scholars such as Ramley, Marginson et al., and Tyler et al. advocate for a transformative approach: integrating science, mathematics, engineering, and digital technologies throughout the entire school curriculum. This integration is essential not only for empowering marginalized students but also for unlocking their potential to excel in the fields of science and technology. We must prioritize equitable access to STEM education for all students to cultivate a diverse and innovative future.

This position paper aims to highlight the pressing challenges faced by African American students, particularly their struggles with STEM (Science, Technology, Engineering, and Mathematics) programs. It also addresses the disagreements between advocates for Asian students and Black students regarding school admission policies. Lawyers representing Asian students have criticized current civil rights legislation, claiming it disproportionately benefits African American students, as seen in *Chu et al. v. Rosa*, case. Hatfield examined the academic records of 110,000 students from six large universities and found a significant disparity between those who succeeded in taking and passing introductory STEM courses and those who did not. Chen et al. further indicated that the likelihood of a student

earning a STEM degree increases substantially if they pass these introductory courses.

The data revealed that successful students were predominantly white, with a passing rate of 48.4%, while Black females and males had much lower passing rates, at 28.9%. This grade disparity between white and Black students is crucial for understanding the decline in enrollment numbers for Black students in STEM fields. In some instances, teachers who assigned lower grades to Black students acted as gatekeepers, hindering their chances of succeeding in obtaining a degree in science, technology, engineering, or mathematics.

The Problem

Rogers highlights a pressing issue: the racial disparity among African American students is significantly influenced by the discomfort expressed by white and Asian students regarding civil rights laws that promote the academic advancement of Black students. To enhance the representation of African Americans in STEM fields, it is vital to encourage them to take advanced math courses as early as the 8th grade (p. 1). Yet, a substantial barrier remains: the unwelcoming atmosphere that Black students often encounter from their peers of other ethnic backgrounds. According to a PEW Research Center report, a survey indicated that many African Americans perceive the fields of engineering and science as particularly hostile and uninviting [3]. In response, one effective strategy African American students can adopt is the cultivation of "grit," a resilient mindset in the face of adversity. Robin's study of 140 Black male college students at predominantly white institutions demonstrated that these students displayed remarkable perseverance and determination despite experiencing racial oppression.

However, it's crucial to acknowledge that "grit" does not always translate to success in STEM environments. A study examining collaborative learning among Black students revealed that many developed strong resentments towards their white classmates, primarily due to feelings of being overlooked in the classroom. Dortch et al. stressed that the effectiveness of collaborative learning hinges on mutual respect between all participants. To foster an inclusive and supportive educational landscape, we must address these challenges head-on, ensuring that every student, regardless of race, can thrive in STEM.

Review of the Literature

Malcolm et al. shed light on the critical issue of social injustices that African American women face in the science sector, exposing the deep-seated prejudices that persist. The American Association for the Advancement of Science (AAAS) emphasizes that increasing the representation of Black women in scientific fields requires collaboration with other ethnic groups, including Asian Americans. Yet, there are troubling instances where misconceptions about discrimination against Asian Americans have inadvertently obstructed the advancement of African Americans. A striking example of this can be seen in a lawsuit filed against African American students in New York. In this case, advocates for Asian American students claimed that they were being unfairly treated by the New York Board of Education due to its admission policies that prioritized low-income Black and Hispanic students. This narrative, however, is not supported by the evidence presented in multiple court cases.

According to a National Science Board report (2018), Asian students are achieving more baccalaureate degrees in science and engineering than their African American counterparts, and they enjoy a life expectancy that exceeds that of African American students by 11 years. Moreover, the recent Supreme Court case, *Students for Fair Admissions v. Harvard*, underscores the complexities of racial considerations in education. While the court ruled the practice of "racial preference" as unlawful, it also affirmed that race can be considered when it serves a compelling interest. This ruling highlights the ongoing need for a nuanced understanding of equity in educational admissions and the importance of fostering collaboration across different communities to ensure fair opportunities for all students.

According to population surveys conducted between 1989 and 2004, it was found that "blacks were the first to be fired when the economy weakened and the last to be hired during periods of economic growth" (p. 245). Furthermore, the unemployment rate for African Americans in the U.S. has consistently been nearly "double that of whites for several decades" (p. 227). Another significant challenge faced by Black individuals in the labor market has been the issue of immigration. Borjas et al. examined data from the U.S. Census spanning 1960 to 2000 and discovered that African American males in the labor force were disproportionately affected by the influx of immigrants in urban areas.

One reason for this negative correlation was the increased supply of workers (immigrants) with specific skill sets, which directly impacted African American males with similar job skills. The influx of immigration between 1980 and 2000 indirectly contributed to an "8 percentage point" drop in the employment rate of low-skilled Black men (p. 39). In contrast, Asian Americans faced little competition from other immigrant groups in the labor market. According to a report from the U.S. Bureau of Labor Statistics, Asians with a bachelor's degree or higher have a median income of \$1,834, which exceeds that of individuals with similar qualifications from other backgrounds. Additionally, Asian Americans are disproportionately represented in high-paying fields such as computer science, mathematics, engineering, and business. Data from the Bureau of Labor Statistics shows that Asian Americans constitute 36.4 percent of computer hardware engineers, 43.1 percent of medical scientists, and 73.1 percent of manicurists in the job market.

Discussion

This paper delves into the intricate dynamics between African American students and Asian American individuals in STEM fields and the larger labor market, spotlighting the fierce competition for career advancement that characterizes these interactions. The pivotal Supreme Court ruling on Affirmative Action in 2023, as elaborated by Walsh (2024), carries profound implications for STEM programs across the nation. To address disparities, the New York State Education Department launched a model designed to elevate the representation of disadvantaged students in high school admissions. However, this well-intentioned initiative has ignited significant controversy.

A coalition of Asian parents, students, and advocacy groups has united to file a lawsuit against the New York State government, asserting that the proposed changes constitute a violation of the

14th Amendment and the Equal Protection Clause. They argue that such adjustments unfairly privilege African American and Hispanic students at the expense of Asian American students. This heated debate has catalyzed urgent discussions within the New York public education system and throughout the Asian American community. It highlights the pressing need for inclusive dialogue. Ultimately, the competition among Asian Americans, African Americans, and Hispanic groups for access to STEM resources and opportunities underscores the vital importance of equitable representation in education and career advancement. It is essential to recognize that fostering fairness in these areas is not just beneficial—it's necessary for building a just and equitable society for future generations [4,5].

Conclusion

African American students in STEM programs face a myriad of challenges, not least of which is the active opposition from certain Asian American communities. The landmark case, **Students for Fair Admissions v. Harvard**, alongside various New York State education cases, has manipulated civil rights laws to unjustly diminish the representation of Black students in higher education and public-school admissions [6-10].

Research conducted by Robins highlights the experiences of 140 Black men in STEM, revealing a disturbing trend of hostility and lack of support from faculty and staff at predominantly white institutions. Yet amid these adversities, a powerful narrative of resilience emerges: many African American students exhibit remarkable "grit," enabling them to rise above racial oppression. This resilience not only underscores their determination but also points to the urgent need for systemic change that fosters their success and promotes equity in education. To truly understand and empower African American students in STEM, future research must delve deeper into the concept of grit, expanding the study to include a larger population [11-15].

This can unveil coping mechanisms that could benefit other ethnic groups facing similar challenges in non-inclusive environments. Furthermore, it is imperative to investigate the motivations behind the opposition from some Asian community members regarding African American students in the court system over admission policies. This inquiry is crucial, especially in the context of recent legal debates surrounding whether race-conscious programs in public university admissions infringe upon the 14th Amendment's promise of equal protection under the law. The Supreme Court's forthcoming decision will not only impact admissions policies but also shape the future landscape of educational equity for all [16-23].

References

1. Milner HR, Farinde-Wu. Lessons from Prek-12 Support Black Students in STEM Higher Education. In E.O. McGee & W.H. Robinson (Eds.), *Diversifying; Multidisciplinary perspectives on race and Race and Center*. 2020. 169-191.
2. Arcidiacono P, Aucejo EM, Hotz VJ. University Differences in the Graduation of Minorities in STEM Fields: Evidence from California. *American Economic Review*. 2016. 106: 525-562.
3. Funk C. How we did this. In *Black Americans' Views of and Engagement with Science: Black Americans have largely positive views of medical researchers' competence; majority concerned about the potential for misconduct*. 2022. 4.
4. Campbell C, Speldewinde C, Howitt C, MacDonald A. *STEM Practice in the Early Years*. Creative Education. 2018. 9: 11-25.
5. Chen X. *STEM Attrition: College Students' Paths into and Out of STEM Fields (NCES 2014-001)*. National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. 2013.
6. Chu Yiatin, Betty A. Rosa. 1:2024cv00075 | U.S. District Court for the District of New York. 2024.
7. Couch KA Fairlie RW. Last Hired, First Fired? Black- white unemployment and the Business Cycle. *Demography*. 2010. 47: 227-247.
8. Elizabeth Todd-Breland. Barbara Sizemore and the Politics of Black Educational Achievement and Community Control, 1963-1975. *The Journal of African American History*. 2015. 100: 636-662.
9. Griffin A, Hobson CJ, Novak JM, Mitchell MB, Szostek J, et al. Department of Education Data Document a declining 17-Year Trend in Black College Student Graduation Rates. *Journal of Underrepresented and Minority Progress*. 2022. 6: 1-22.
10. Gersen JS. The Uncomfortable truth about Affirmative Action and Asian Americans. *The New Yorker*. 2017.
11. Hatfield N, Brown N, Topaz CM. Do introductory courses disproportionately drive minoritized students out of STEM pathways? *PNAS nexus*. 2022. 1: 167.
12. Ladeji-Osias JO, Coleman ST, Davis J. Increasing the representation of Black Male students in STEM through Culturally Grounded Curriculum, Instruction, Mentoring, and Professional Learning Communities. *JAAME*. 2020. 11: 1-7.
13. Malcolm SM, Hall PQ, Brown JW. *The Double Bind: The price of Being a Minority Woman in Science*. American Association for the Advancement of Science. 1976.
14. McGee E. Black Genius, Asian Fail. *The Detriment of Stereotype Lift and Stereotype Threat in High- Achieving Asians and Black STEM Students*, *AERA Open*. 2018. 4: 1-16.
15. Norman O, Pinder P, Ragland Shelley S, Norman VMP, Shakwa G. Toward a solutions approach to the problem of Black underrepresent in STEM. *Young, Diversity in Higher Education*. 2022. 25: 11-22.
16. Priddie C. An Exploration of Collaborative Learning Experiences for Black STEM Students. *Journal of College Student Development*. 2024. 65: 101-106.
17. Chu et al v. Rosa 1:2024cv00075 | U.S. District Court for the ... <https://dockets.justia.com/docket/new-york/nyndce/1:2024cv00075/141933>.
18. Rogers KD Jr. What's Math Got to Do with It? Emphasizing Math as an Impediment to STEM Excellence for Black Students. *Education Sciences*. 2024. 14: 855.
19. Sizemore B. *Walking in Circles: The Black struggle for School Reform*. Third World Press. 2008.

20. Students for Fair Admission v. University of North Carolina, 600 U.S. 181 (2023).
21. Todd-Breland E. Barbara Sizemore and the Politics of Black Educational Achievement and Community Control, 1963-1975. *Journal of African American History*. 2015. 100: 636-662.
22. *United States Chu V*, 99 F. 4th 610 - Court of Appeals, 3rd Circuit. 2024.
23. U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Completions component, fall 2021 and Fall 2022.