

About 70 Years After The Historical “*Brown v. Board of Education,*” Where Are American Institutions At?

An Educator’s Plea For Little Black Girls and Boys to Matter More In the Discourse on Race and Culturally-Connected STEM Teaching

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This short essay was written during this time of: “rising coronavirus cases, particularly among Blacks and other minorities,” “increased racial tension,” and the call for “justice and fairness in all systems within the UNITED States of America (U.S.)” As a highly concerned educator, I am here renewing the “call for more equality and the addressing of the needs of Black People within the U.S. systems, specifically focusing my attention on Little Black Girls and Boys (our children/our students) within the American K–12 Educational system. . .”

Within the past few years and months, we saw the numerous protests across the world and specifically across the various U.S. states, protests which called for *social justice, equality, and fairness* for Blacks within American systems. When analyzing data from the *criminal justice system, health care system, economic strata, and the K-12 school system*, Blacks continue to be place at a disadvantage within the U.S. Two years ago, we saw and read about the popularized killings of Mr. George Floyd on May 25, 2020 in Minneapolis, Minnesota, then Mr. Rayshard Brooks on June 12, 2020 in Atlanta, Georgia, and other young Black men; all of whom were reported to be killed by White police officers. Statistical reports reveal that Black people make up about 13% of the U.S. population, and although Blacks make up only 13% of the American population, they are the racial and ethnic group 3X more likely to be killed by the police than White people and 2X more likely to be killed by police than Hispanics. Moreover, 99% of those killings, which occurred during 2013–2019 resulted in police officers not being charged (<https://mappingpoliceviolence.org/>).

With respect to the healthcare disparity and specifically the increased coronavirus incidents among Blacks within the U.S., statistics show that although Blacks represent about 13% of the population, they have accounted for 24.3% of known COVID-19 deaths. In data drawn from across all states including the District of Columbia, it was reported that for COVID-19 deaths, Black Americans represented 1 in 1,625 or 61.6 deaths per

100,000 of the population; whereas, Asian and White Americans represented about 1 in 3,800 or 26.3 deaths per 100,00 of the population. So, Asian and White Americans were 2.5X less likely to die from covid-19 than Black Americans (<https://www.apmresearchlab.org/covid/deaths-by-race>).

Economic and financial data are as equally dismal for Blacks as are the healthcare and criminal justice statistics just mentioned. According to the U.S. based Economic Policy Institute, the rate of poverty for Black Americans fell by 12.7% over a 48 year period from 1968–2016. However, the rate of poverty for White Americans was significantly lower than that of Blacks (<https://www.epi.org/publication/poverty-persists-50-years-after-the-poor-peoples-campaign-black-poverty-rates-are-more-than-twice-as-high-as>).

Besides the aforementioned plights of Blacks within the U.S. criminal justice and health care systems, the educational system also speaks to an equity issue. Poorly funded school districts and the plight of Black students within the K–12 school system is another issue of concern. According to an article written in the *Atlantic* entitled “*The concentration of poverty in American schools*” written by **Boschma and Brownstein (Feb. 29, 2016)**, they reported that most African American and Latino students attend schools where three-quarters of all students qualify as low-income to poor. **Lombardo (2019)** in a National Public Radio (NPR) Report entitled “*Why White school districts have so much more money*” revealed that:

- White school districts received \$23 million more than non-white school districts in 2019,
- For each student, the average non-white school district receives \$2,226 less than a white school district,
- And, more than 50% of students attend “segregated” or “racially concentrated” schools where either three-quarters of the students are White or three-quarters are non-white.

On May 17, 1954, almost 70 years since the landmark legal case “*Brown v. Board of Education*,” the U.S. Supreme Court ruled that “separating children in public schools on the basis of race was unconstitutional,” which was to bring “racial segregation” in the schooling system in the U.S. to an end. But, about 70 years post legal ruling of 1954, educators might ask, have the ruling of the U.S. Supreme Court been truly upheld? Do we see evidence of this in 2022? Additionally, given the bleak and dismal statistics on Blacks being:

- The most likely to be arrested or killed by a police officer,
- The most likely to die of health crisis, such as the coronavirus,
- The most likely group to experience high rates of poverty and poor schooling,

As a concern educator of color, I ask, will the American education system ever evolve? And to the point, where equality of ALL people within the various U.S. systems will occur, will be achieved? The aforementioned alarming statistics outlined, particularly, the focus

on the alarming educational statistics for Black minority children have led to this my focus on “little Black children within the American K–12 school system.”

Thus, this short essay stresses the necessary first step in levelling the learning playing field to be “*the promotion of more culturally-connected and culturally-sensitive teaching and learning processes for Black students.*” This essay uses a combination of empirical studies, literature and theoretical peer-reviewed articles, and reflects upon two important key research pieces labelled *The “Black Girl Turn” in Research on Gender, Race, and Science Education: Toward Exploring and Understanding the Early Experiences of Black Females in Science*, and *Cultural-Ethnic Differences, Parental Involvement Differences, and Educational Achievement of African Heritage Students: Towards Employing a Culturally Sensitive Curriculum in K–12 Classrooms, A Literature Review*. Moreover, reasons for Blacks being seemingly “segregated” over the years and not fully included in the science teaching and learning processes are highlighted as are strategies that educators should employ in their teaching in order to create science/STEM teaching that is more culturally-connected to Black students’ lives.

The Reasons for Blacks Being Seemingly “Segregated” and “Denied Full Access and Inclusion” in the Science/STEM Teaching and Learning Processes

Reasons for Blacks being seemingly “segregated” and “denied full access and inclusion” in the science/STEM teaching and learning processes might be due to *historical* and *cultural* reasons.

Historical-Biological Reasoning

The historical exclusion of Blacks and minorities from science/STEM and the legitimizing of it was considered linked to historical-biological beginnings (**Norman, 1998; Pinder, 2020; Pinder, 2008**). Historical-biological findings, such as published studies on the “*race and brain-size debate*” were popularized by the Canadian researcher Philip Rushton and his colleagues. These studies favored and legitimized the role and place of the “White male” in science/STEM and disallowed “Blacks” from taking up a place within the science/STEM arenas—in the science classroom as *active participants* (*science students*) and as *deliverers of science knowledge* (*science instructors*). **Rushton (1997)** cited the research work of Robert Bennett Bean in his report. **Bean (1906 as cited by Rushton 1997; Pinder, 2020; and Pinder, 2008)**, a Virginia physician, published a study; in which, he found that Blacks had less convoluted brains than Whites. He also reportedly found that Whites had larger genu to splenium ratios (front to back part of corpus callosum) than other racial and ethnic groups, which to him seemed to imply that Whites had more activities in their frontal lobes than Blacks. The frontal lobe being considered the site of intelligence. Thus, at the time, these early craniometrical and skull research data findings led to the placement of European women, Black males, and Black females in lower hierarchies than the White male. So, European males were placed at the top of the skull-size continuum; whereas, Black males and Black females were placed at the

lower points of the skull-size scale, and this seemingly led to the favoring of the White or European male role or place in science/STEM fields (*Pinder, 2008*).

Black Students' Inability to Learn and Master Two Incompatible Cultures

From the 1960's, arguments have been made that some Black students may underperform in their schooling because of their inability to master two dissimilar cultures—their inherited *African culture* (African American culture is derived from African culture) and the *European culture* of the new world that their forefathers were brought to as slaves in 1619. Socio-cultural researchers contend that some Black students may underperform in relations to some of their White peers because of their inability to master two incompatible cultures and their rejection of the sharply different European culture that appears to be the dominant culture of the American K–12 school system (*Boykin, 1986; Ogbu & Simons, 1998; Ogbu, 2003; Norman et al., 2009; Norman et al., 2006; Pinder, 2013; Pinder, 2012; Pinder, 2010*). *Woodson (1933 as cited by Wiggan, 2007, & Pinder, 2013)* argued that Black students may feel alienated and underperform in schools because their own experiences have been ignored in the various formal classroom academic discourses in favor of the singular focus on the experiences and lived world views of the dominant group.

Culturally-Biased Curriculums, Textbooks, and Media

Pinder (2020 & 2008) stated that cultural factors, such as schools' culturally-biased curriculums and textbooks that are steeped in negative cultural norms and stereotypes are possible cultural factors that may explain why some Black children might not connect to the science/STEM teaching and learning processes. Additionally, *Gray (2013)* feels that “the preponderance of imagery in textbooks and media perpetuate the notion of scientists as predominantly male and White (p. 77).” Similarly, *Sadker et al. (1989)* reported that some minorities are less likely to be studied in history, read about in literature, and additionally, math and science problems are more likely to have underlying hints of White male stereotypical terms and illustrations. According to *Gray, (2013)*, critics of the traditional science curriculum have held several negative positions:

- Some see science as being presented as a series of discrete, random facts that students are forced to memorize,
- Some see it as one in which the contributions of women, people of color, and non-westerners are excluded,
- Others see science as being presented and taught from a deeply European and westernized perspective.

Strategies Educators Should Employ In their teaching In Order To Promote Racially and Culturally-Connected Science/STEM Teaching

It is felt that popular images portrayed by television, print ads, and films of Blacks as entertainers, athletes, and thugs might lead to Black students unconsciously developing an affinity to these representations of Black success rather than developing an affinity to representations of success portrayed by scientists, mathematicians, and engineers (**Gray, 2013**). In beginning to address the cultural-disconnection of Black students in the science process, Gray feels that several things need to happen: 1) educators need to first examine and reflect on ways to counter the negative images and stereotypes of Black people, and (2) educators need to actively seek to dispel the notion that being Black and being a scientist are incompatible thoughts.

Similarly, **Pinder (2013)** expressed “a need for culturally-sensitive curriculums to be utilized that truly serve the needs of students of African descent.” Thus, it is felt that “rather than employing a one-curriculum fits all approach in teaching,” teachers and administrators need to realize that in order for ethnically diverse students to do well, the standard curriculums have to be revamped to be more inclusive. To this end, **Pinder (2020 & 2008)** offered several critical strategies for teachers to use to eliminate racial and culturally-biased teaching and to improve students’ intrinsic (internal) and external motivational desires to learn (**Blackwell & Pinder, 2014**):

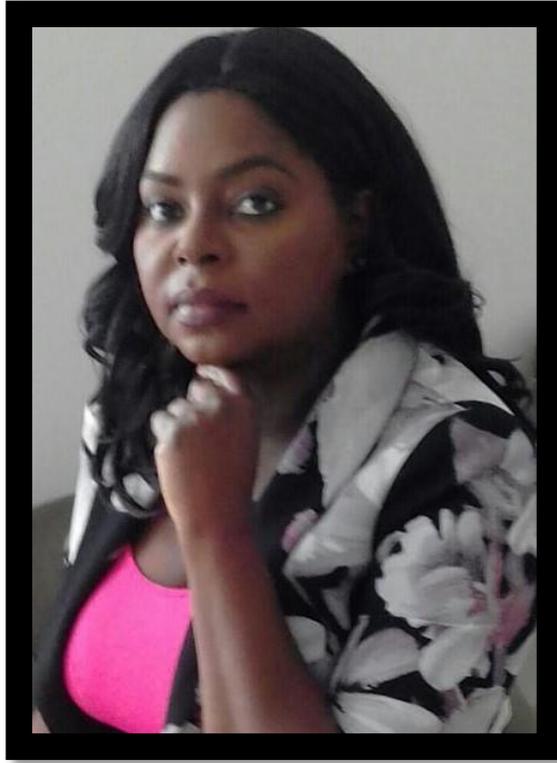
- learn about students’ culture through observations of students’ behavior in the classrooms and on the playgrounds,
- ask students questions about their cultural practices and preferences,
- talk to parents about their cultural practices and preferences,
- study published research on student groups to learn more about each student’s group type, and
- study the history of slavery and the adaptation of descendants of slaves to learn more about the ancestral background of Black and African students; those students of African ancestry.

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About the Author



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Dr. Patrice Juliet Pinder, is a recognized World-Class Educator/Education Research Scientist, recently listed among the “*Best Education Scientists in the World*” for 2021 and 2022 (First Ever, AD Scientific Index of World Scientists & Universities, 2021 & 2022). For 2021, she has also been identified by the U.S. *National Council for Black Studies’* (NCBS’) Publication Committee as a “*Leading Scholar*” and “*Expert*” for her work which advocates for the advancement of Black and African children in K-12 schools. A multitalented, multidimensional scholar, Dr. Pinder created educational games and strategic game-based learning interventions for teachers, students, and thus schools in the U. S., Archipelago of the Bahamas, and the twin islands of Trinidad and Tobago.

Dr. Pinder is a native of The Bahamas and was educated and trained in the United States of America. Specifically, Dr. Pinder has earned an A.A. degree in Biology from the College of the Bahamas, a B.Sc. (Honors) degree in Biology with a minor in English from Jacksonville State University, a M.Sc. degree in Plant and Soil Sciences from Alabama A

& M University, and a Doctoral Degree in Education with a specialization in Science Education from Morgan State University. She did further research training in the areas of STEM education and Environmental Planning. She did two postdoctoral research fellowship training in STEM education at Indiana University, the University of the West Indies in Trinidad and Tobago, and did postgraduate training in Urban and Regional Planning with a specialization in Environmental Planning at Alabama A & M University. She also participates in continuous Professional Development Global conferences, workshops, and webinars with institutions worldwide in the areas of Sciences, STEM, Technology, Literacy, and Educational areas of program and institutional accreditation at the K-12 and college/university levels, programs and curriculum reviews. She has completed professional development and continuing education events with the likes of the University of California at Berkeley's Lawrence Hall of Science (led by Associate Director of Lawrence Hall of Science, Dr. Jacqueline Barber, *Literacy and Science Education*) and Florida International University's (FIU's) Professional Development and Continuing Education Department (*Technology Education*).

Dr. Pinder has 16 years of training and work experiences in the field of education, specifically Science/STEM education. Additionally, her research work and industry experience began in the Bahamas in 1998 at the Princess Margaret Hospital (PMH) where she served in two areas; first, the Medical Microbiology Unit, and later the Pharmacy Department. She has given academic lectures, presented at Brown Bag sessions, and has presented at regional and international conferences in countries such as: the U.S., Bahamas, China, Trinidad and Tobago, and Greece (Europe). She has published peer-reviewed journal articles, and a STEM Education Research Book "*Issues and Innovations in STEM Education Research: Theoretical and Empirical Studies by Early Career Researchers.*" Currently, Pinder is an International Education Consultant, University Professor, and PhD Advisor with Global Humanistic University (GHU), Dutch Netherlands Curacao. She is also an Editor-in-chief for the *International Journal of Education and Culture (IJEC)*, Associate Editor of *China, US Education (CUED) Journal*, and has been invited to serve as a peer-reviewer for Top Ranked International Journals, such as: Wiley's *Journal Science Education*, Elsevier and University of North Carolina's *Social Science Research Journal*, Springer and University of Toronto's School of Education *Canadian Journal of Science, Mathematics, and Technology*, Howard University's School of Education's *Journal of Negro Education*, and has served as an invited Article Editor and Reviewer for *SAGE Open Journal*, STEM Education Articles Reviewer. Dr. Pinder looks to continue to excel in her field and to build a series of legacy programs and projects to advance ALL children in STEM especially underrepresented children of color, both little girls and boys. She wants to be that "*Professor, Research Scientist, and STEM Educator without Borders Who Never Wants to Be Defined or Confined by the Limits Posed by Geographic Borders.*"
