

**The Extent of Implicit Bias in Gifted Students: Utilization of the IAT to Inform Diversity  
Education**

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## Introduction

The National Association for Gifted Children position statement on “Identifying and Serving Culturally and Linguistically Diverse (CLD) Gifted Students” suggests that educators need to change their view of CLD students from a “deficit to a strength perspective”. In addition, it states that “schools should create support programs to help gifted students from diverse backgrounds develop strong academic identities, learn coping strategies for dealing with negative peer pressure and discriminatory practices, and gain resiliency for responding to challenging life circumstances”. One approach to support and retain CLD students that can be utilized by both educators and gifted students is understanding one’s own implicit bias. “Implicit bias refers to the attitudes or stereotypes that affect our understanding, actions, and decisions in an unconscious manner...it is the mental process that causes us to have negative feelings and attitudes about people based on characteristics like race, ethnicity, age and appearance” (Rudd, 2014). These biases are typically involuntary and unconscious; most individuals are unaware that they even exist (Blair, 2002; Rudman, 2004; Rudd, 2014; Pearson, Dovidio & Gaertner, 2009). Research suggests that these thoughts and attitudes are formed early in life based on experiences with parents, teachers, peers, school, and church, and then reinforced with messages from the media (Adams, Bell, & Griffin, 1997).

According to the literature, implicit biases exist everywhere in America, including educational institutions; it is referred to as the “equal opportunity virus” (Levinson, 2007; Rudd, 2014; Rudman, 2004). Ohio State University’s Kirwan Institute for the Study of Race and Ethnicity states:

A teacher may say—and explicitly believe—that he or she has equal expectations for all students, while in fact, implicit racial bias lowers expectations for students of color and stimulates subtle differences in the way the teacher behaves toward these students—less praise and recognition and more discipline...often driven by implicit racial bias, can affect a student’s self-esteem, motivation and academic performance (Rudd, 2012).

Ultimately, these implicit biases grow, leading to more severe injustices, such as stereotyping and profiling. Thinking about this in terms of giftedness, CLD students are less likely to be identified as gifted and talented by teachers and administrators and if identified, retention becomes an issue; which some may attribute to implicit bias (NAGC). The biases originally form from a lack of diversity and how people are socialized, and often, they favor

one's own group. This means that people automatically set other groups beneath them (Reskin, 2005). Dr. Freeman Hrabowski states that "implicit biases, favorable or unfavorable, are developed over a lifetime, beginning in childhood, and when examined and unaddressed lead to disparities in health care, criminal justice, economic opportunity and more" (2015). Implicit associations are essential to understanding the origins of stereotypes and social profiling based on race, gender, and sexual orientation. Intentional programming that focuses on understanding one's own implicit bias and embracing the perspectives of others; along with having a conversation with another group may provide insight into the inaccuracy of one's implicit biases. When this recognition of bias happens, change can occur (Hrabowski, 2015)!

### **THE IMSA PILOT PROGRAM**

The Illinois Mathematics and Science Academy (IMSA) sought to better understand the biases that exist within the gifted student population in an effort to promote diversity and inclusion in the academy. Furthermore, IMSA strived to be proactive in addressing biases that exist within the gifted student population so there is an environment in which all students feel valued and equal. In an effort to understand the extent of specific associations within the gifted and talented student community, IMSA developed a Diversity and Inclusion: Examination of Implicit Bias pilot program that included pre and post testing of Skin-tone, Gender- Science, and Sexuality Implicit Association Tests (IAT) and two diversity based educational interventions. The Skin-tone IAT assessed preferences between light-skinned individuals and dark-skinned individuals. The Gender- Science IAT assessed presumptions regarding females' association with liberal arts and males' association with science. Finally, the Sexuality IAT tested for preferences regarding heterosexuals and homosexuals. At the conclusion of each test, a score was given, ranking the student in one of seven categories. They either had a strong, moderate, or slight preference for the majority or minority preference. There was also the possibility of little to no preference, which is ultimately the desired preference of this pilot program.

### **Results**

The pre-test results demonstrated the following: the Skin-Tone IAT showed a preference for light-skinned individuals, the Gender-Science IAT displayed an inclination for males with science and females with the liberal arts and the Sexuality IAT illustrated a preference for

heterosexual persons, all defined by the IAT as “majority groups”. Although the gifted students had a preference for the majority groups, approximately half of the students landed in the “slight preference” or “little to no preference” categories. Following the pre-test, students participated in two diversity based educational interventions (described below) focused on addressing stereotypes and bias with the ultimate goal of facilitating change and moving students who had “majority” and/or “minority” preferences in the pre-test to “little to no” preference in the post-test.

*Diversity Intervention 1*

The first intervention focused on getting students to think about stereotypes and the typical respective different groups. Students were provided sheets of paper with pre-determined stereotypes including, but not limited to:

Always studying very hard	Parents very strict about academics	Good at mathematics
Most likely to know martial arts	Ghetto	Most likely to be terrorists
Listen to rap music	Never on time/not punctual	Lazy
Are the most confused about their identity	Most likely to abuse alcohol/drugs	Promiscuous/Have a lot of sexual interactions
Benefit from Affirmative Action families/neighborhoods	Flamboyant/Flashy	They are cheap
Most likely to be college graduates	Least likely to be college graduates	They place the most emphasis on education
Commit the most crimes	Are disrespectful to their parents	They can't dance well

Students then had to connect each stereotype with the group they believed the stereotype referred to such as:

Hispanic/Latino	European-Americans/White	African-Americans/Black
Asian	Indian	Native Americans
LGBTQIA (lesbian, gay, bisexual, transgender, queer, intersex, asexual)	Males	Females
Low-Income	Middle Class	Upper Class
Undocumented Citizen	Nerds/Geeks	Jocks/Athletes
Suburban	Urban	Rural
Jewish	Christians	Muslims

This five-round exercise was interactive in nature; students took a paper with a stereotype on it and stood under the heading of the group they feel it most closely refers to. The available stereotypes range from ones that could be considered lighthearted and fun, to some that are more serious and offensive. The purpose of the activity was not to point out what certain

stereotypes are to students, but to show how they negatively impact others and how the meaning may differ based on their experience, knowledge, and background. The point of the activity was to lead students beyond simply acknowledging stereotypes and recognizing how damaging they can be, but to also make students more aware so they don't perpetuate the stereotypes. Upon completion of the five rotations, there was an in-depth discussion that addressed the following questions:

- Where do stereotypes come from?
- Why do stereotypes exist?
- Who are the people making and/or perpetuating those stereotypes?
- Why are stereotypes being perpetuated?
- How do people feel when the stereotype refers to a group you belong to?

### *Diversity Intervention 2*

The Peer Multicultural Educators (PME), IMSA's student-led diversity education group created a video, <https://drive.google.com/open?id=0B7ywJQVWCa5AWIBEMWI5MnIMVEU> that focuses on social injustices. It shows actual situations that students have encountered that were submitted to the PME students anonymously. In the video, two renditions of each scenario were presented, focusing on topics such as affirmative action, "the tiger mom", the "N" word, Asians in STEM (science, technology, engineering and mathematics), English Language Learners, LGBTQ Community, and persons with disabilities. The video first demonstrated how the scenario occurred producing a negative impact, then a retake showed how the scenario could have occurred that would result in a positive outcome. The PME students showed the video and held 30 minute discussions with groups of no more than 25 students. The discussion questions included:

- a. How do you think this scenario impacts your peer?
- b. What can we do as an IMSA community to address stereotypes and decrease bias incidence?

The goal of this program was for students to gain a better understanding of issues that students have faced and how to reduce bias/improve diversity and inclusion at IMSA.

### *Key Messages for Diversity Interventions*

The ultimate goal of these interventions was to impact change and move students who had “majority” and “minority” preferences to “little to no” preference. The key messages that students received at the completion of the programs included:

- 1) Those who have been victims of stereotypes are sometimes guilty of victimizing others, perpetuating the behavior (i.e. someone used the “N” word to talk about a Black person in a negative way, but the Black person uses the “N” word with friends and think it’s okay...it’s not okay),
- 2) Even “good” stereotypes are harmful; especially to those who don’t meet those standards (i.e. there is a stereotypical perception that Asians are good at math, but that may not apply to all Asian students),
- 3) Question the source of a stereotype instead of their validity or invalidity,
- 4) Our behavior may affect others in ways we did not intend. The negative impact of someone else’s behaviors may not have been intentional,
- 5) Even if some people within a group use offensive language about themselves, it’s still demeaning to many people inside and outside the groups. It is often more highly charged if stated by an outsider,
- 6) The affirmation, appreciation, and inclusion of multiple cultures are vital to ensure that all students, faculty, and staff and the IMSA community will be able to thrive in a multicultural academic and residential environment. From this perspective it is important that community members be effective at interacting across cultures, which is essential to IMSA’s vision of “*igniting and nurturing creative, ethical scientific minds that advance the human condition*”. IMSA’s diverse cultural groups also include the political orientations, statewide regional cultures, and the multiplicity of beliefs, ideas, and visions that are critical to fostering an educational environment where students, faculty, and staff exchange ideas freely, encourage critical thinking, and reexamine their personal perspectives.

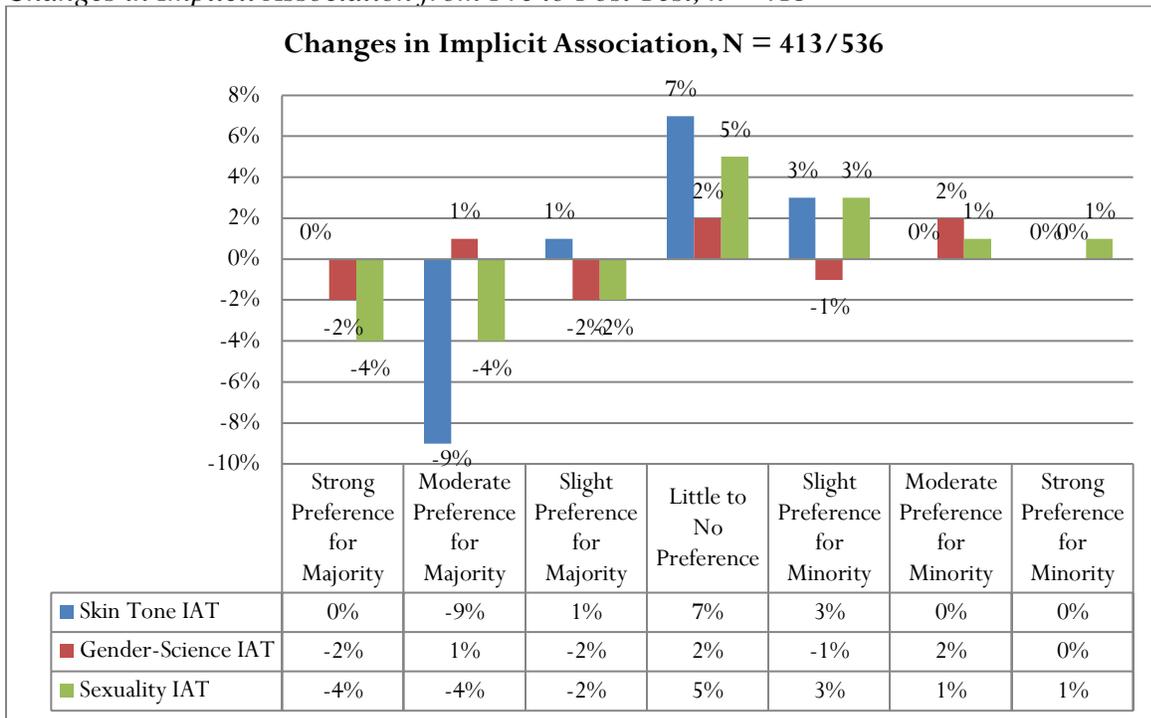
Following the interventions, the post IAT tests were administered, revealing that the gifted and talented students still have a preference for majority groups in each of the categories, skin-tone, gender-science and sexuality. Although, the gifted students enrolled at IMSA have a preference for the majority groups; after the interventions the number of those students with strong and moderate “majority” preferences decreased, while the number with “little to no

preference increased”. This suggests that students who receive diversity-focused education/interventions can reduce their bias towards targeted groups.

### Conclusion

The assessments given both before and after the intervention showed the following: students showed a preference for light-skinned individuals, displayed an inclination for males with science and females with the liberal arts and illustrated a preference for heterosexual persons, all defined as “majority groups”, within the IMSA community. However, after the interventions there was a marked shift from those who associated with strong and moderate “majority” preferences to those who associate with “little to no preference” in all three IAT’s. There was also a slight shift to “slight” and “moderate” minority preference. The table below that depicts the change in implicit bias for IMSA students who took both the pre and post Implicit Association Tests:

*Table 1  
Changes in Implicit Association from Pre to Post Test, n = 413*



This pilot suggests that students who receive diversity focused education/interventions can reduce their bias towards targeted groups, as previously suggested by Dr. Freeman Hrabowski. The Illinois Mathematics and Science Academy will continue its’ diversity initiatives in an effort to produce significant change in implicit bias. Below are some steps that IMSA has

implemented and encourages educational institutions to adopt as a means to promote diversity/inclusion and resolve issues of implicit bias that exist within gifted/talented student populations:

- 1) Develop a Diversity committee to develop a plan (see IMSA's diversity plan at <https://www.imsa.edu/discover/diversityatimsa>) that demonstrate the institution's commitment to diversity, equity and inclusion.
  - a) This committee should include representation from various departments and include voices of faculty, staff, students, parents and alumni.
  - b) The state of Diversity should be assessed utilizing instruments such as the Global Diversity and Inclusion Benchmarks: Standards for Organizations Around the World (<http://diversitycollegium.org/downloadgdib.php>) or Council for the Advancement of Standards (CAS) in Higher Education (<http://www.cas.edu/standards>).
  - c) Develop an education-based system to promote equity and resolve social injustices/bias incidents; utilize Great Lakes Equity Center as a resource (<http://glec.education.iupui.edu/>).
  - d) There should be a sub-committee that specifically focuses on recruitment and retention strategies for gifted and talented culturally and linguistically diverse students; refer to National Association for Gifted Children position statement on Identifying and Serving Culturally and Linguistically Diverse Gifted Students <https://www.nagc.org/sites/default/files/Position%20Statement/Identifying%20and%20Serving%20Culturally%20and%20Linguistically.pdf>).
- 2) Provide Diversity, Inclusion and Equity training for faculty, staff and students.
  - a) Resources include the Illinois Mathematics and Science Academy (<https://www.imsa.edu/discover/diversityatimsa>), the Illinois Safe Schools Alliance (<http://illinoissafeschools.org/>), and Tier 1 Educational Coaching and Consulting Services (<https://www.tier1education.com/Team/dwayne-d-williams/>).
- 3) Integrate Diversity Inside and Outside the Classroom.
  - a) Research has found that:  
*“critical engagement of issues of diversity in the curriculum and in the classroom has a positive impact on students’ attitudes toward racial issues, fostering opportunities*

*for interacting in deeper ways with diverse perspectives and cognitive development. In a multicultural democracy and an interconnected world, curriculum transformation is not only an academic responsibility; it is a moral imperative and social responsibility...When students are taught from an inclusive curriculum they are eager to learn; they are more engaged in the teaching/learning process. They want more inclusive course content throughout the education process. Faculty who are involved in integrating diversity into their curriculum report that their teaching is revitalized, their student evaluations improved, and their overall job satisfaction increased” (Ukpokodu, 2010).*

- b) Outside the classroom, it is important to develop a cultural/educational program series that corresponds with the Heritage Month Calendar (<http://www.diversitycentral.com/calendar/heritagemonthguide.php>) to promote inclusion and celebration of all the various cultures within the educational community.
  - i) Resources include Teaching Tolerance (<http://www.tolerance.org/>), Paul Kivel, (<http://paulkivel.com/>), The Safe Zone Project (<http://thesafezoneproject.com/>), and The History Makers (<http://www.thehistorymakers.com>).
- 4) Develop a Student-centered Diversity Education Program to address issues/concerns.
  - a) Administer the Harvard University Project Implicit Association instrument, (<https://implicit.harvard.edu/implicit/takeatest.html>), to understand the implicit bias of the student population.
  - b) Administer a diversity climate survey to determine diversity issues/concerns utilizing an instrument such as GLSEN Local School Climate Survey (<http://localsurvey.glsen.org/>).
  - c) Conduct focus groups by culture to understand the extent of those issues/concerns.
  - d) Get involved with National Association for Multicultural Education (NAME), “the premiere national and internal organization that is committed to issues of equity, inclusion, diversity, and justice in schooling” (<http://nameorg.org/>).
- 5) Celebrate Diversity, Equity and Inclusion Every Day!!

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Adrienne Coleman possesses a Doctorate in Educational Leadership from Argosy University and a Master of Science Degree in Health, Physical Education and Recreation with an emphasis in Health Education as well as a Master of Science in Educational Administration and Foundation with an emphasis in College Student Personnel Administration both from Illinois State University. Currently, she is employed at the Illinois Mathematics and Science Academy (IMSA), a three-year residential high school for gifted students, as the Multicultural Education Specialist. She previously worked at Rutgers University as a Program Development Specialist and at Illinois State University as a Health Educator. Adrienne has served as an AmeriCorps member and has been part of the United States delegation team to assist Moldova (Eastern Europe) in addressing issues of human trafficking and inadequate health education. Her areas of interest include social justice/diversity and inclusion education, higher/gifted education and public health,

***Kyle Thomas, IMSA Alumni/Previous Student Inquiry and Research Student***

Kyle Thomas graduated from the Illinois Mathematics and Science Academy in 2015. In his three years at the academy, he has worked heavily with both the president's and the admissions' offices in order to create and implement diversity education for his peers. Amidst his studies, he volunteered his time to gifted yet underprivileged younger students, encouraging them to pursue their passions in the areas of STEM. During his junior year, he did research on the long-term effects of stroke on the eye muscles at the Rehabilitation Institute of Chicago. For his senior year, he observed the extent of implicit associations on his school's campus. From the research opportunities, he has gained experience in both working with subjects and data analysis. He is currently continuing his education at Washington University in St. Louis, planning to earn a degree in biomedical engineering.