The Effect of Stereotype Threat

on the

Success of Minority Students on the PSAT.

Ву

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Abstract

The purpose of this study was to determine what effect stereotype threat might have on student success on the PSAT when the students attend a school composed primarily of minority students. The participants were enrolled in a county school's Gifted and Talented and Honors Geometry classes during the 2013-2014 school year. The first measurement tool had participants complete a survey on stereotype threat and student performance. These answers were linked to the student PSAT scores, which was used as a second measurement tool. This study implemented a descriptive design. The data collected was analyzed for patterns based on student responses and the mean PSAT scores of students that felt similarly. Findings showed that the participants that felt the pressure of stereotype threat and felt that they were accountable for their actions had higher mean PSAT scores than their peers on the PSAT.

CHAPTER I

INTRODUCTION

Overview

Today's schools are striving to produce successful students. School systems plan to accomplish this by installing a series of rigorous standardized tests that students are required to pass for graduation. Furthermore, their scores will reflect not only upon the success of the school, but on how successful the child is as a student, determining not only the student's aptitude for the curriculum, but their level of preparation for college and career. However, this wave of tests will cause problems for minority students struggling with stereotype threat. Stereotype threat is the fear that one's actions will perpetuate and reinforce stereotypes about a group of people. This can, in turn, enforce the thought process that minority students are low achieving and unsuccessful.

In their original study Aronson and Steele (1995) showed that when students were asked to identify their ethnicity during testing, students who struggled with their racial identity were more inclined to answer fewer questions. These students also answered fewer questions correctly than their white counterparts. This has since fueled studies where researchers have examined to what degree does stereotype affect student performance, and researchers have discovered that students are more likely to struggle under stereotype threat when they are being tested on their knowledge and judged as a result. It has been shown that students are capable of counteracting stereotype threat by developing strong racial and individual identity. However, this requires the trials and tribulations of time, and this is not a luxury to which students have access.

As a result many minority students will struggle under the new educational accountability

measures instead of thrive. These struggles will potentially cause schools composed primarily of minority students, and those students themselves, to appear as failures. The question, therefore, is to what degree did these students fail and how much of it is their fault. Since the county in which the research was conducted has several schools composed almost entirely of racial minorities it is important to consider how much impact stereotype threat will have on their student performance.

Statement of the Problem

The purpose of this study is to determine what effect stereotype threat will have on students success on the PSAT for students that attend a school composed primarily of minority students.

Research Question

To what degree do students experience stereotype threat and is there a difference in their academic performance when compared to non-minority peers?

Operational Definitions

Stereotype Threat

Stereotype threat is the fear that negative stereotypes about a collective group will be perpetuated and reinforced.

Student Success

For the intent of this study, student success will be defined as meeting or succeeding the national average on the Preliminary SAT (PSAT).

CHAPTER II

REVIEW OF THE LITERATURE

This literature review examines issues involving stereotype threats effect on student achievement and success in the classroom setting. The first section evaluates stereotype threat. Specifically it focuses on why it occurs, how and why it is maintained, and ways to combat it. The second section discusses ways that student achievement and success can be measured as well as alternative measures to consider. The third section will examine the noted effects of stereotype threat on student test performance and work ethic.

Evaluation of Stereotype Threat

When a person needs to collect their thoughts about a certain object or individual it is easier to do when those objects or individuals can be placed into a categorized group with which that the person is familiar. This allows the person to use their previous knowledge and discoveries to draw conclusions about the object or individual in question. However, this is how stereotypes are formed.

Stereotypes are a shared belief that certain characteristics, traits, beliefs and behaviors are shared by a categorized group (Encyclopedia of Cognitive Science, 2005). Using stereotypes not only allows people to draw quick conclusions about how new individuals encountered will behave, but it allows for comparisons to be made between the groups to which the judged and the judging belong. These groups are called in-groups, groups to which the judging belongs, and out-groups, groups to which the judged belong. Furthermore, the power of a stereotype on a person's opinion can be staggering. Multiple experiments have shown that even if two members of different groups behave in an identical fashion the severity of their judgment is based on the stereotypes that the observers have about those groups.

This is how stereotyping becomes stereotype threat. Stereotype threat is the fear that negative stereotypes about a collective group will be perpetuated and reinforced, and it is the tendency of human beings casting speedy judgments that perpetuate stereotype threat (Aronson, Cohen, McCloskey, Montrosse, Lewis, & Mooney, 2009). This is due to people not taking the time to examine the difference between their perception of an individual and the reality of that individual causing many people are unfairly judged and criticized.

The tendency to examine an individual's behavior as part of a larger demographic is also something of concern. This means that anyone that belongs to an out-group that frequently has judgment cast upon it must be ever vigilant of their behavior, appearance, and speech for fear of unjust conclusions about their person. This tendency can cause a large amount of anxiety among individuals within groups that are frequently judged, especially if they do not pander to the stereotypical norms of their groups (Smith & Hung, 2006).

Stereotyping itself begins at an extremely early age (Encyclopedia of Cognitive Science, 2005). Children younger than five have been overheard vocalizing gender roles, and within a few years they are endorsing racial stereotypes as well. This leads to the conclusion that stereotypes are easily passed along to children from various means including both parenting and popular culture. Therefore, children are potentially being told what they are capable of achieving academically before they even begin their academic careers.

As time progresses, people may begin to use stereotypes to shape a child's future in subtle ways. A black student may display a proclivity for athletics and they, in turn, are encouraged to pursue athletic endeavors at the cost of their academics (Czopp, 2009). Although this encouragement is playing to the strengths of the child, it is still implementing stereotypes and encouraging the growth of stereotype threat. This student will now feel pressure whenever

they step onto the field instead of into the classroom. They will be expected to be stronger, faster, and better than their counterparts and, if they are not, they will be viewed as a failure. Their classroom performance may also become poor if they emphasize their athletic progress more than their academic progress. Therefore, their test scores and grades will play into the mythos that African Americans are less capable than their White counterparts academically.

This example shows that even encouraging students in ways that emphasize positive stereotypes can create situations of stereotype threat (Czopp, 2009). When a student eschews their academics in exchange for athletics it allows them to fall into a stereotypical bubble. Furthermore, they are creating a situation that is more intense for their peers that are trying to detach themselves unfair judgments and stereotypes in general.

Students are a product of the environment in which they are asked to learn. This means that if a teacher perceives that their students will perform based on stereotypes about their ingroups, the children will most likely do so (Encyclopedia of Cognitive Science, 2005). This is not only true for children of color, but it is also true for children coming from impoverished backgrounds and female children. If students feel that their educators are seeing them through lens tainted with stereotypes, they will likely begin to perform based on those stereotypes. This means that if a student feels that their teacher thinks that they incapable of doing well in their class, the student will most likely perform poorly.

As stated previously, stereotype threat is about the fear of living up to stereotypes. This means that whenever a student in an out-group is placed in a situation where their performance is going to be evaluated they have more to consider then their in-group counterparts. A minority student sitting down to take an exam will have to wonder if their performance will be examined based on an individual level or if it will be used as a reflection of their own in-group as a whole

(Steele, 1997). This adds a level of pressure that those in the majority do not have to worry about.

The situation that many people need to consider is how you remove stereotype threat from the classroom situation. This is a layered and complex concept to consider because even small actions can activate stereotype threat. While removing performance assessments is impractical, it would certainly lower the pressure for many minority students when it comes to being assessed; however, since that is an educational improbability other means must be considered.

Educators should, for instance, be very careful to make their students feel that tests and assessments are about measuring a student as an individual and not as a member of any selective group. This means they should not be comparing scores between groups of students at any time. Doing will this will make the students feel that comparisons should be made and they will begin to think about how their performance is seen when viewed against other students from various groupings, thus activating stereotype threat.

Breakdowns that focus on gender or racial background should also be avoided. It has been shown that when female or minority students mark their gender or ethnicity on a test, they answer fewer questions correctly or fewer questions overall (Claytie, Aronson, & Salinas, 2006). This means that collecting demographic information that is essentially used to help determine where aide and improvement need to be made is in fact helping create the very problems that they are seeking to improve. Therefore, demographic information should be collected in more subtle ways in order to decrease the risk of creating a stereotype threat situation.

Student Success and Achievement

Determining if a student is successful is a complex and varied process. Success is

defined as the accomplishment of an aim or a purpose, but one needs to consider whose aims and purposes are considered when determining a student's ability to be considered successful. The same consideration also needs to be given to the term achievement, which is defined as a thing done successfully. This means that a student must achieve in order to be considered successful linking these two terms inextricably.

It is essential that time is taken to explore how student success is commonly measured and who defines this measurement. Many studies that have been done on stereotype threat and its effects on student success using standardized assessments (Aronson et al., 2009; Claytie et al., 2006; Scherbaum, Blanshetyn, Marshall-Wolp, McCue, & Strauss, 2010; Steele, 1997). These tests, ranging from county issued performance assessments to the Graduate Record Examination, are designed to diagnose a student's knowledge or to assess to level of preparedness for continuing education. They are not only expected, but are mandated by many institutions because they are easy to assess and used to draw conclusions.

This creates a high stakes scenario. Students who wish to be successful will strive to succeed in these situations, but students from minorities will have to worry if their demographic information will be used against them if they do poorly (Claytie et al., 2006). With the current academic trends including more standardized tests being used to assess student knowledge and progression even more deeply, this could develop the risk of students developing chronic issues with stereotype threat (Steele, 1997). Students are aware that these tests are designed to separate those that know and those that know not so that colleges and other secondary institutions can determine who is worthy of their time. Furthermore, the larger number of tests produces a larger number of scores to be considered and each one is the opportunity to succeed or fail.

When one considers the definitions of success and achievement, additional measures

must be considered beyond standardized tests. There are many areas that can be examined to determine how successful a student has been at achieving the goals and standards set by the educational institution. There is more to a student then a string of standardized test scores, and it is possible for students to feel the pressure of stereotype threat at other times than when taking a test.

In one of the studies provided by Aronson et al., (2009) the researchers examined student GPA's after they were given a treatment asking them to evaluate the things that defined their self-worth outside of the classroom. This validates the idea that there are other important things besides standardized test scores that educators and facilities can examine to determine the success of a student.

Other measures have also been examined. The way students approach problems and the cognitive effort they put into their work is something that was examined by Scherbaum et al., (2010). They examined how students reacted to different test taking scenarios such as extended time and the number of corrections made during testing.

These skills were examined to measure a student's ability to monitor their own progress and work, and to see if stereotype threat had an effect on these conditions. However, it also demonstrated that when the pressure of an exam being considered diagnostic was reduced, students were able to display more positive behaviors than when the pressure was high. The results did show an improvement when the students were under less pressure and able to model positive testing behaviors, which shows that examining how a student takes a test is also a critical key to determining if they are capable of being successful.

The studies described begin to show that student behaviors also play a key part in their ability to be considered successful. Students have a tendency to play to their strengths and the

educators they interact with are inclined to help them pursue these strengths in order for the students to feel successful (Czopp, 2009). However, encouraging students to play to their strengths may in fact lead to their downfall. A high school football player only has a 0.09% chance of making it professional at any level. This tiny chance may not register with a student that is focused on athletics over their academics, but these behaviors can lead to struggles for many students. Black male athletes usually enter and leave college less prepared than their white counterparts. This means that if educational leaders are allowing their students to focus on their athletics first, they are setting their students up for disappointments later in life.

Effects of Stereotype Threat on Student Success and Achievement

The greatest effect stereotype threat may have on student success and achievement is in the area of standardized testing. This is where we see the greatest divide between minority students and everybody else. It is not uncommon to have the achievement gap discussed in reference to SAT or ACT scores when comparing minorities students to their White majority counterparts; however, these discussions do not usually mention the additional pressures that the minority students are forced to deal with.

When it comes to test taking, one must consider to what degree is student affected by negative stereotypes. There are four designated stages of racial acceptance that have varying degrees of effect on a student's ability to test well (Claytie et al., 2006). The first stage, Pre-Encounter, is associated with a denigration of one's race and has a measured correlation with anxiety and psychological distress. As a person progresses, they move into the Encounter stage which is marked by various encounters that cause a person to reevaluate their view of the world. The form of the encounters in the second stage can push people into the Immersion-Emersion stage where they become more in tune with their own culture and will sometimes limit their

contacts to members and organizations composed of their own race. This acceptance of racial identity can add buffers that aide them in test taking; however, the overwhelming acceptance of one's own culture can heighten the influence of negative stereotypes as well actually boosting the effects of stereotype threat. The final stage of Internalization helps an individual embrace a racial identity that is not exclusionary, this allows the effects of stereotype threat to be lessened as an individual is able to view themselves as more of an individual and not as a member of a collective body.

However, students can avoid the effects of stereotype threat if they do not feel that an assessment is diagnostic in a capacity (Aronson et al., 2009). Informing students that a test measures their abilities can make students feel that their performance will be measured against others and can serve as a reflection of their ethnicities negative stereotypes as whole. This is especially true if students are aware that the test they are taking has been sensitive to group differences in the past. By avoiding these situations, students and educators may be able to narrow the achievement gap that could lead to even further positive gains for minority students.

Even in situations that lack stereotype threat, students need to be held responsible for their own work ethic and the amount of effort they place in their own work. One way that students manage to cope with the results of poor test scores is to protect their self-esteem through dis-identification (Whaley, & Noel, 2011). By convincing themselves that their test scores and academic work are not important, students are capable of harboring their feelings and saving themselves the concern of how poor scores reflect on themselves or the other members of their race. Although this protects the students, it does not aid in lowering the risk of stereotype threat for students that are trying. This is because the students' choosing to protect themselves through dis-identification are in fact building up negative stereotypes for their peers.

Dis-identification ties closely to a student's self-efficacy skills. Self-efficacy is how much someone believes in their own individual skills and capabilities. It is not surprising that students with high self-efficacy are less inclined to suffer under stereotype threat when the possibility arises (Schweinle & Mims, 2008). Students with high self-efficacy will also be less inclined to use dis-identification as a tool. This means that they will take credit for their part in their failings and learn from such experiences. When students take credit for their mistakes in the classroom, they are working to improve themselves fighting against negative stereotypes associated with their in-groups.

While many minority students claim that they enjoy mathematics and science when questioned, and that the majority claim that their teachers make these classes pertinent and entertaining, they still fall behind the white majority in testing (Maholmes, 2001). This means that students' test taking skills should also be considered. Students that are testing under stereotype threat conditions have a tendency to spend more time on fewer items (Scherbaum et al., 2010). Furthermore, they are incapable of or unwilling to monitor their own progress. This means that students suffering from stereotype threat are answering fewer questions, less accurately, and are disabled enough by fear to keep from using good testing habits.

Various studies have been completed looking at how manipulating the conditions where there is the potential for stereotype threat can affect the achievement gap between groups.

Multiple studies have indicated that by removing conditions that make students aware of a tests diagnostic nature the achievement gap between white and black students will decrease dramatically (Aronson et al, 2009; Claytie et al., 2006; Steele, 1997). Further studies have shown that reducing the risk of stereotype threat to low promotes positive test taking skills, and increases the number of questions that minority students were willing to monitor and change

(Scherbaum et al., 2010). These studies show that by reducing the risk of igniting stereotype threat in a testing situation will not only improve the scores of minority students, but will increase the positive behaviors needed to make improvements.

Other studies have indicated ways to help counteract stereotype threat. The studies discussed in Aronson et al., (2009) examined ways to counteract stereotype threat before it was initiated. Their first study discussed teaching students about having a growth mindset, meaning that mind was expandable and will grow when it is worked. They found that all students in the study had mathematics scores that decreased over time, but those in the intervention group decreased less than those that were in the control group. In their second study they worked with students to discover that challenges were normal and not unique to any racial group, and their findings discovered that students that received incremental intelligence messages made greater gains than those that received messages that focused on the attributes students already had. The final study they examined helped students to reflect on the things they valued in life beyond school in order to help them build self-worth. Students that were placed in groups that received the affirmation interventions all had increases in their GPA scores. These studies show that even if we cannot eliminate stereotype threat, there are multiple ways that educators can go about helping students overcome this obstacle and still earn positive gains both for their scores and their self-esteem.

Summary

The review of this literature has evaluated stereotype threat, analyzed what defines student achievement and success, and considered the effects that stereotype threat has on student success and achievement. This discussion shows that it is possible to reduce the effects of stereotype threat on a student in a testing situation and that promoting the idea that challenges are

common for all students will help students close the achievement gap. It also shows that there are multiple ways that educators can examine if a student is achieving and becoming successful.

A student must truly believe that they are a unique entity and are judged as such in order to escape the downfalls of stereotype threat.

CHAPTER III

METHODS

Design

This study uses a descriptive design and was conducted using a voluntary convenience sample. Students participating in the study answered a series of questions involving stereotype threat. These results were compared to their PSAT scores and the scores were analyzed. This study used a convenience sample as the nature of the study is sensitive, and it is important that the students trust the teacher. The students who participated in the study did so at their own volition. This study does not have an independent or dependent variable nor does it have a pre-or post-test.

Participants

Participants were selected from the teachers' 80 students that have acquired PSAT scores. These students were drawn from Honors Geometry, Gifted and Talented (GT) Geometry and Pre-College Mathematics courses. The sample was made up of a total of 16 students, of which 2 were male and 14 were female. The average ages of the students range between 14 and 17 with the mean age of both male and female students being 15. While all students were identified as racial minorities, there were as African-American, Nigerian, Jamaican, and Hispanic.

Instruments

The questionnaire used a Likert-type scale to measure the student responses. The questionnaire was designed based on the researchers understanding of the literature and the focus of the paper. Each question focused on stereotype threat and racial identity. Students are asked the level at which they identify with the question and they must select one of five numbers whose range varies from "Not At All" to "Always." The responses also contain the scale of

"Strongly Disagree" and "Strongly Agree," and "Not At All" and "Extremely" one time each as well. Furthermore, the students are asked to identify their age, gender, and ethnicity in order to further analyze trends. Students must also give their name in order to link their answers with their PSAT scores.

The Preliminary SAT/National Merit Scholarship Qualifying Test is an assessment that is sponsored by College Board and the National Merit Scholarship Corporation. It assesses students in critical reading, math problem-solving, and writing skills in an effort to help students determine how ready they are to take the PSAT. It provides students with areas of strength and weakness in order for them to create an action plan on how to best become equipped to prepare for the SAT. Furthermore, the test informs students of their percentile ranking, which allows students to see how their performance compares to their peers on a national scale.

Procedure

Students were sent home with permission slips that they needed to have signed by both parents and themselves. Once students volunteered to participate in the study, they were sent the questionnaire to answer and submit. The student responses were then logged in a spreadsheet, and then linked to their PSAT scores. The researcher examined the data for trends and patterns in the data linking student reactions to stereotype threat and their PSAT scores. These patterns and trends were analyzed for meaning and discussed.

CHAPTER IV

RESULTS

The purpose of this study was to determine the effect that stereotype threat has on students' performance on the PSAT in a school composed primarily of minority students. Students that elected to participate in the study were asked to answer a series of questions regarding stereotype threat and behaviors related to their academic performance. These responses fell into one of three categories, disagree, agree, and neutral. Data was collected regarding the participants PSAT data in Critical Reading, Mathematics, and Writing. Scores were matched to each student's response for every question in the questionnaire, the mean score for each category was determined, and the means for each question were totaled. The results for this process are shown in the following tables.

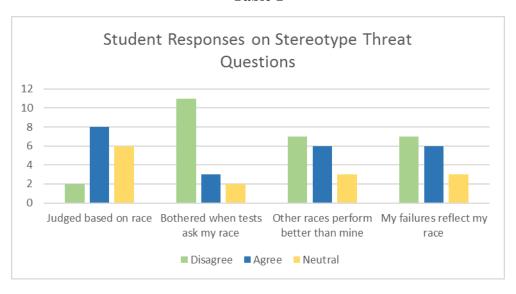
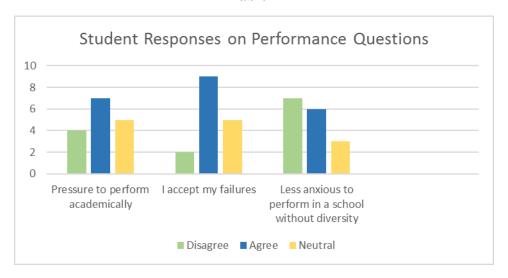


Table 1

Based on student responses we can see that students tend to disagree with the questions regarding stereotype threat, with the exception of feeling that they are judged by their racial background. It should be noted that a vast majority of the students took issue with being asked to

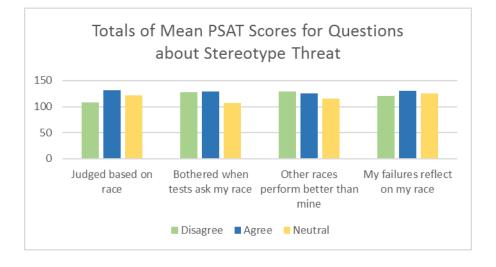
identify their race when taking standardized tests such as the PSAT. Furthermore, the number of responses for the last two questions are equivalent.

Table 2



Based on the student responses students had a tendency to agree with the performance-based questions. The exception here is that a slight majority of students tend to disagree that they feel less anxiety about their performance because of their enrollment in a school without racial diversity.

Table 3



In this chart students that had a tendency to agree with the questions about stereotype threat had slightly higher mean scores than students that had the inclination to disagree or remain neutral. There is an exception to this finding. The students that agreed that other races perform better than their own race did in fact have a lower mean test score than those that disagreed.

Totals of Mean PSAT Scores for Questions about
Student Performance

150
100
50
Pressure to perform | accept my failures academically | Less anxious to perform in a school without diversity

■ Disagree ■ Agree ■ Neutral

Table 4

This table shows that students who accepted their failures and felt that a school lacking racial diversity lowered anxiety about performance actually performed better than their peers. However, students that remained neutral about feeling pressure to perform outperformed both those that disagreed and agreed with the question.

CHAPTER V

DISCUSSION

The purpose of this study was to examine the patterns between stereotype threat and students' success on the PSAT in a school composed primarily of minority students. The results of this study show that students that attend a school in a minority setting and feel the pressure of stereotype threat have a tendency to perform better than their peers on the PSAT. Furthermore, the data shows that this is also true for students that accept their own mistakes and feel that a school lacking racial diversity lowers anxiety about test performance.

Implications of the Study

The results of this study indicate that students in a school setting composed primarily of minority students perform better on the PSAT when they feel the pressure of stereotype threat. This runs contrary to studies previously performed on stereotype threat that say that students perform worse on tests when they are under the pressure of stereotype threat. These studies say that when students are pressured by stereotype threat, they under-perform their peers who are not feeling this pressure.

However, it should be noted that less than half the students claimed that they felt the pressure of stereotype threat for all of the questions except for one. On that question, exactly half of the students felt that they were judged based on their race. Furthermore, the students that felt that other races out-performed their own, race were actually out-performed by their peers that did not share this feeling.

The results also indicated that students who accepted their failures out-performed their peers on the PSAT. This does agree with studies that say that students who do not suffer from

dis-identification can overcome the pressure of stereotype threat. Furthermore, students who felt that attending a school with a lack of racial diversity relieved the pressure to perform actually did perform better than their peers. However, when students felt that they were under pressure to perform academically, they actually were out-performed by their peers who did not feel this way.

In this case a slight majority of the overall student population felt that they accepted responsibility for their academic failures. Also, more students disagreed that attending a school without racial diversity relieved the pressure of testing than those that agreed. However, the number of students that disagreed with this question represented less than half the total population surveyed. Finally, the majority of the students surveyed did feel that they were pressured to perform academically, but this population was still less than half of the total population.

The question still remains, however, how did this student population perform compared to their peers at the national level? Results for the sophomores that took 2013 PSAT/NMSQT were examined (College Board, 2014). These results were used because they reflected the mean age of the students taking the test. The demographic data indicated 41.6% of the students that took the test identified with races similar to those of the students participating in the study. Furthermore, the sum of the national mean score was 127.3. When compared to the sum of the mean score of the students that participated in the survey, the highest mean score for each question was higher than the national mean. However, it should be noted that the sum of the mean scores for the entire student population was lower than the national sum of the mean score.

Theoretical Consequences

The student survey results contradicted studies by saying that they felt the pressure of stereotype threat, but then they performed better than their peers that did not feel the pressure. On the contrary, those students that felt that they took responsibility for the own mistakes academically did perform better than their peers which agrees with current studies. This could mean that the students feeling the pressure of stereotype threat are also the same ones that take responsibility for their actions. However, the number of students that agreed that they feel the pressure of stereotype threat are fewer than the number of students who feel that they accept their own failings academically. It is more likely a few students that felt the pressure of stereotype threat and were self-actualized enough to overcome this pressure that their scores acted as outliers for the stereotype threat PSAT scores.

Threats to Validity

The greatest threat to the validity of this study is the number of students that participated. While this number made up twenty percent of the total student population, it was a small number of students overall. This means that the data would only provide a minute glimpse in the overall possibilities of the student population.

Furthermore, the sample was not selected randomly and does not represent the overall student population. The majority of the students surveyed, 87.5%, were female greatly skewing the data towards the female population. This idea of not representing the total student population could be taken further. The students surveyed were all members of Gifted and Talented and Honors Geometry classes. No students participated from the enrollment in Standard Geometry.

Because of this, the results were skewed toward students that were considered to be more mature, responsible, and self-actualized than their peers.

Finally, because students were asked to answer a survey involving their own personal opinions, the data may suffer from response bias. Response bias occurs when participants do not respond to a survey with their true thoughts and feelings. This may mean that many students felt differently than the way they did but chose not to respond with their true thoughts for various reasons. Due to the possibility of response bias, the data may have resulted in results that do not reflect the actuality of the situation.

Implications for Future Research

This study could lend itself to future research on stereotype threat. Future research could include: larger sample sizes, students from a more diverse academic background, survey questions that probed more deeply into the student's outlook on stereotype threat and academic performance, and minority populations from more racial diverse schools.

By enlarging the student population and including students from a more diverse academic background, the researcher could gain more insight into how the overall student population feels about stereotype threat and their own personal accountability. This would also allow for a more accurate idea of what mean total PSAT scores look like among the student population. Gaining access to this information would allow stronger conclusions to be drawn. Furthermore, if the survey itself was expanded to ask students more diverse questions, researchers could look for other relationships. This would allow them to determine if, for example, the way students felt about other ethnicities played a large role in their feelings about stereotype threat and PSAT

performance. Finally, examining the minority population at a more diverse school could show entirely different results due to the relationships of the student population.

Conclusion

Even though there were minor anomalies, the research showed that students that tended to feel the pressure of stereotype threat and took credit for their own academic failings had a higher total mean score on the PSAT than their peers who felt differently. However, far fewer students said that they felt the pressure of stereotype threat than those that felt they understood their own academic failings. This anomaly leads to data that doesn't help the researcher draw many strong conclusions. Therefore, the researcher knows that, in the future, a much larger more diverse student population should be pulled to help draw stronger, more concrete conclusions.

REFERENCES

- Aronson, J., Cohen, G., McCloskey, W., Montrosse, B., Lewis, K., & Mooney, K., (2009).

 Reducing stereotype threat in classrooms: A review of social-psychological intervention studies on improving the achievement of Black students (Issues & Answers Report, REL 2009-No. 076). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Education Laboratory Southeast. Retrieved from http://ies.ed.gov/ncee/edlabs.
- College Board. (2014). *PSAT/NMSQT 2013-2014 College Bound High School Sophomores*Summary Report. Retrieved from:

 http://media.collegeboard.com/digitalServices/pdf/research/2014/MD_14_05_03_01.pdf
- Claytie, D., Aronson, J., & Salinas, M., (2006). Shades of threat: Racial identity as a moderator of stereotype threat. *Journal of Black Psychology*, *32*, 399-416. doi: 10.1177/005798406292464.
- Czopp, A., (2009). Studying is lame when he got game: Racial stereotypes and the discouragement of black student-athletes from schoolwork. *Social Psychology of Education*, *13*, 485-498. doi: 10.1007/s11218-010-9129-8.
- Malhomes, V. (2001). Revisiting stereotype threat: Examining minority students' attitudes toward learning mathematics and science. *Race, Gender & Class, 8*. Retrieved from ProQuest. Retrieved from http://search.proquest.com/docview/218839571?accountid=11164.
- Scherbaum, C., Blanshetyn, V., Marshall-Wolp, E., McCue, E., & Strauss, R., (2010).

 Examining the effects of stereotype threat on test-taking behaviors. *Social Psychology of Education*, *14*, 361-375. doi: 10.1007/s11218-011-9154-2.

- Schweinle, A. & Mims, G., (2008). Mathematics self-efficacy: Stereotype threat versus resilience. *Social Psychology of Education*, *12*, 501-514. doi: 10.1007/s11218-0099094-2.
- Smith, C. & Hung, L., (2006). Stereotype threat: Effects on education. *Social Psychology of Education*, 11, 243-257. doi: 10.1007/s11218-008-9053-3.
- Steele, C., (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, *52*(*6*), 613-29. Retrieved from Education Resources Information Center, EBSCO. Retrieved from http://web.ebscohost.com/ehost/search/advanced.
- Steele, C., Aronson, J., (2009). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69, 797-811. doi:10.1037/0022-3514.69.5.797
- Stereotypes. (2005). *Encyclopedia of Cognitive Science*. Retrieved from http://www.credoreference.com/entry/wilerycs/stereotypes.
- Whaley, A. & Noel, L., (2011). Sociocultural theories, academic achievement, and African American adolescents in a multicultural context: A review of the cultural incompatibility perspective. *Social Psychology of Education*, *14*, 149-168. doi: 10.007/s11218-010-9142-y.