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## The Impact of Self-Regulated Learning Tutoring and Mentoring Program on Black Males in Eighth-Grade Science

Julie Liddle Lott

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THE IMPACT OF SELF-REGULATED LEARNING TUTORING AND MENTORING PROGRAM  
ON BLACK MALES IN EIGHTH-GRADE SCIENCE

by

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## DEDICATION

This journey has been a difficult and fulfilling one that the Lord started me on about twenty years ago when He called me into education. I would like to thank my family for standing by me and encouraging me to continue on during the times when I was not sure I could make it. To my husband, Chris, thank you for the push that I needed to get started. To my children, Gabryelle, Christopher and Will, for always believing that I could do anything and for being patient when I could not always be there for you when I was working on my degree. To my mom for always reminding me that I can do anything I put my mind to because I am so stubborn, I just wish my dad could be here to see this. To my sisters and brother, Becky, Bart and Carla, for always being there when I need any of you and loving me no matter what, I am very blessed to have you all as my family. To my school family, for all the times you would lift me up when I was down and for your unfailing encouragement and help, especially Anna, Keena and Lindsey. Thank you all for being there for me and I thank God every day for putting you all in my life. I love you all to the moon and back!!

## ABSTRACT

The problem of practice described in this paper was identified by the state testing gaps between White and Black male students at a middle school in central South Carolina. This identified problem of practice led to the development of the research question: What is the impact of a tutoring and mentoring program using self-regulated learning strategies on my Black male students and their academic achievement in eighth grade science? The purpose of this study is to determine if a tutoring and mentoring program will affect the academic achievement of my Black male students in science.

The action research model being followed for this is by Mertler (2014). The four phases being followed are titled: planning phase, acting phase, developing phase, and reflecting phase. Chapter One of this paper begins with the identification of the problem, problem statement, research question, and the purpose of the study. Chapter Two is a review of the literature related to the topics identified in the problem of practice to determine what other researchers have discovered completing similar studies. In Chapter Three, the action research methodology acknowledged within this study is discussed in depth. Chapter Four contains the findings of the action research study along with the discoveries, reflections, and data analyses. Finally, Chapter Five contains a summary, which reveals the conclusions of the research and suggestions for further research related to the DiP.

*Keywords:* academic achievement, achievement gap, African American, Black, mentoring, self-regulated learning, self-regulation, tutoring

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## CHAPTER ONE: INTRODUCTION

Developing a soft spot for students who do not get along with other teachers has become a prime motivator for me in the classroom. Other teachers discuss how bad a particular student is, and it is my goal to make a positive impact upon that student. My oldest son struggled in school from kindergarten through eighth grade; sometimes it felt like more time was spent in his school for conferences than my own. I told him that if it kept up, I was pulling him from his school and putting him at my school. In the eighth grade, I did just that. If there were to be any conferences, they would be down the hall. He was a young man with a lot of energy and intelligence, but he did not qualify as having ADD or ADHD; however, he did have a learning disability. I could not understand why his teachers would not try to figure him out. It became my goal to accomplish this with my most difficult students, no matter what their background is.

One year, I watched a young man in seventh grade constantly in the hallway, wasting time. If I spoke to him, he was always disrespectful. Of course, I hoped that I would not get him the next year in eighth grade, but I did. I remembered some advice one of my past principals had given in a beginning-of-the-year meeting: if you have a student who you think will give you a hard time all year, find a reason to call home and give a good report at the beginning of the year. If you do this, you will have the parent on your side for the rest of the year. I thought that with this young man, I did not have anything to lose by trying it. I called his mother the first week of school and let her know how much I

enjoyed having him in my class and how well he participated in class. After that call, he was mine. I did not have to call her for misbehavior very often, but when I did, she would tell me to do whatever I needed to do to him. I had developed a positive relationship with him and was able to see when he was in need. For example, he would have trouble opening his locker. I went to help him and every time after that day, I would watch him, he would try to open it and then just give me a look. I would walk to his locker open the lock and go back to my door. His mother told me when I spoke with her, when she was coming to collect his things from his locker because he was going to an expulsion hearing, that she had ask for help with his locker every year and no one would help. I had to open the lock for her that day, and I knew his combination by heart. He was expelled and did not get to finish the year with me. Whenever I would go to the high school for events, if he saw me, he would always come and give me a big hug, and I would always ask about his mom. One of the times I ran into him, he tried to avoid me. He had fallen into trouble and ultimately was arrested for strong armed robbery and kidnapping. He did not want to face me. I made sure to interact with him and remind him of the ultimate power of how we need to get back on track with his goals.

It has become my mission to provide a positive learning environment for these young men who come to my classroom. If I make my annual first week positive call, they are sometimes the only one they have ever received. This is saddening to me, that after eight years of schooling, my voice is the first one to provide their parents with something genuine and kind to say. Even to this day, I find that to be very sad and unforgivable that a teacher cannot find one positive aspect to call home about. I really make it a point to get to know all of my students but take a special interest in the young men, especially the

ones others label as trouble, because they need to be encouraged to do their best. We all need that positive voice and action to show us that our purpose can be so much more.

### **Summary of the Statement of the Problem**

With this in mind, this study focuses on the Black male students who did not score well on the state standardized tests and who need someone to encourage and be a positive voice for them. The test results indicate that eighth grade Black males in Northwoods Middle School (pseudonym), scored lower than White male students in the common core curriculum area of science in the eighth grade. Specifically, 48% Black males and 70% of White males scored on “grade level” on the ACT Aspire Summative assessment (ACT, 2015). The achievement gap for the Black male students is due to the gap in opportunity provided for them by the educational system today. The opportunity gap is defined as, the “disparity in access to quality schools and the resources needed for academic success, such as early childhood education, highly prepared and effective teachers, college preparatory curricula, and equitable instructional resources,” and this disparity between Black and White students continues to grow (National Opportunity to Learn Campaign, n.d., p. 1). Another reason for this opportunity gap is the biased associated with high-stakes standardized testing. “The use of high-stakes testing in an overall environment of racial inequality perpetuates that inequality through the emotional and psychological power of the tests over the test-takers” (FairTest, n.d., para 7). However, these high-stakes standardized tests are what schools and teachers are required to use when making the educational decisions for students today. During the 2015-2016 academic year, on the SCPASS test 79.2% of White students scored on grade level while only 47.7 % of Black students scored on grade level in eighth-grade science. Students

must complete science in the eighth grade in order to be promoted to the ninth-grade. For the state of South Carolina in 2011, NAEP reports White students scoring at grade level or above at 78%, Black students at grade level or above at 36%, Hispanic students at grade level or above at 50% in eighth-grade science thus showing the vast disparity between the races (National Center for Educational Statistics, 2011). The socioeconomic data from the NAEP report was not broken down by race, however, for the state of South Carolina of the students tested, 47% of the students who scored at grade level or above were eligible for the National School Lunch Program (2011).

The U.S. Department of Health, Education, and Welfare have continued to evaluate the availability of equal educational opportunities for children regardless of race, gender, and income. Webb and Thomas (2015) found that 85% of Black males who stayed in school until their senior year, scored below the national average on standardized tests compared to their White and Asian counterparts. This opportunity gap for Black males is not closing according to, the standardized achievement test results conducted by the National Assessment of Educational Progress (NAEP) between 2009 and 2011. The 2017 South Carolina reports from NAEP shows that Black students are showing no improvement in reading from 1998-2017. In math for 2017 difference in average scores for Black versus White students were 35 points lower compared to 30 points lower in 2000, showing slight improvement in closing the gap (NAEP, 2018). The 2015 science scores for South Carolina average score difference for Black versus White students was 32 points compared to 29 points in 2009, which showing a slight decline in improvement in science (NAEP, 2018). NAEP reports that upon entering American public schooling, Black males are already behind in comparison to their White and Asian counterparts.

This opportunity gap makes it difficult for these students to ever catch up throughout their school career, in order to lessen this gap something needs to be changed within the educational system (Web & Thomas, 2015).

Ten years ago, Howard (2008) revealed that the majority of Black males did not reach proficiency in math, reading, science and social studies in grades fourth, eighth, and twelfth. Today, this educational opportunity gap continues to broaden and thus it must be addressed for Black males in order for them to have the opportunity to become successful lifelong learners. According to Kunjufu (2011), “we haven’t created learning environments that meet the needs of *all* student, especially African American males” (p. 10). Kunjufu (2011) also discussed that lessons are created more for left-brain learners, when two-thirds of students are right-brained learners and where African American males make up an even larger percentage of right-brain learners. The learning styles of these type of students are visual-picture, oral/auditory, and tactile /kinesthetic, whereas the teaching styles are using textbooks and ditto sheets which do not have the ability to reach the majority of their learners, especially the Black males. Black males are largely tactile and kinesthetic learners and respond better when learning in cooperative groups or pairs and when there is competition among the groups (Kunjfu, 2011). The mandated curriculum for science does not focus upon the contributions made by traditionally under-represented communities. It merely highlights accomplishments; thus, minority students do not see themselves within the curriculum landscape. Many educators fail to see past the outdated curriculum resources and ultimately allow the pervasive inequities within our educational system. It is imperative that we allow our students to discover themselves within the life-changing scientific discoveries that have helped shape our world.

Culturally inclusive curriculum transformation will help assert students' cultural connectedness to historically significant events. We must go beyond the highlights and dive into who our students are. The purpose of the present Action Research study is to determine the effects of self-regulated learning strategies on the academic achievement of Black males in eighth-grade science. Self-regulated learning will be taught through a mentoring and tutoring program.

### **Problem of Practice**

The identified Problem of Practice is the opportunity gap for Black males in science at Northwoods Middle School in central South Carolina. The identified problem evolved from my desire to try to lessen the opportunity gap for my Black male students, specifically in eighth-grade science by tutoring and mentoring my students in self-regulated learning strategies. Given the broad base of literature on success of these strategies, I chose to use the self-regulated learning strategies in this study. The self-regulated strategies were demonstrated to work for students of varying cultural and economic backgrounds. A study conducted by Andrzejewski, Davis, Shalter Bruening, and Poirier (2016) used self-regulated learning strategies to determine the effect on the opportunity gap in ninth grade earth science. Their study found that the ethnically diverse students and the economically disadvantaged students achieved higher scores in all core subject area classes, not just science, compared to the white and middle-class students (Andrzejewski et al., 2016). In another study conducted by Cowan Pitre (2014), she found the following strategies present in all majority-minority low-income schools that were high performing: “meaningful learning experiences, academic rigor, cultural connections, and profound belief in students’ capabilities” (p. 214). All students have the

ability to learn, and as a teacher, one’s job is to try to close the opportunity gap, which is caused “by disparity in access to quality schools and the resources needed for academic success” (National Opportunity to Learn Campaign, n.d., p. 1). In 2015, the results from the ACT Aspire Summative assessment indicated that Black males in Northwoods Middle School in the eighth-grade scored lower than White males in the common core curriculum area of science (ACT, 2015). Specifically, 48% Black males and 70% of White males scored on “grade level” on the ACT Aspire Summative assessment (ACT, 2015). The 2015-2016 academic year results from the SCPASS show a difference in science achievement, 84.6% for White students on “grade level,” 44.9% for Black students on “grade level,” and 45.5% for Hispanic students scoring on “grade level” (South Carolina Department of Education, 2015). In 2016-2017 SCPASS scores continued to demonstrate a difference in achievement in science between Black and White students, 27.1% of Black students “meets expectations” or “exceeds expectations” compared to 68.7% of White students “meets expectations” or “exceeds expectations” and 21.6% of Hispanic students “meets expectations” or “exceeds expectations” (South Carolina Department of Education, 2017). As can be seen clearly from the data, Northwoods Middle School is not meeting the needs of their Black male students. The strategies or lack of strategies to cultivate the desire to learn and excel of our Black male students needs to be addressed. In this action research study, I aim to look at the impact on academic achievement for my Black male students involved in this tutoring and mentoring program teaching self-regulated learning strategies at Northwoods Middle School.

## **Research Question**

In an effort to help close the opportunity gap of Black males specifically in eighth-grade science, the following research question will be addressed:

RQ: What is the impact of a tutoring and mentoring program using self-regulated learning strategies on Black male students and their academic achievement in eighth grade science?

Sub-question: How do Black male students perceive the tutoring and mentoring sessions?

The goal of this action research study is to determine if self-regulated learning strategies have an effect on the academic success of my Black male students on a specific unit in eighth-grade science. The mentoring part of the program was achieved by creating a safe environment for these boys and by being an advocate for these boys during the school year. Due to scheduling concerns, the program was conducted in the mornings before school started. I used this limited time to administer the tutoring and mentoring program to my students involved in the action research study. The tutoring and mentoring program focused on the development of the self-regulated learning strategies needed to improve their academic performance, specifically in science. The impact of this tutoring and mentoring program was analyzed in order to determine if this specific program will be beneficial to other students with opportunity gaps.

## **Summary of Purpose of Research**

The purpose of this action research study was to determine the effectiveness of a tutoring and mentoring program rooted in self-regulated learning on the academic performance of my Black male students in eighth-grade science. Black males need



teachers who show empathy for them and their everyday life, who try to meet the students where they are, and understand their cultural and racial differences. According to Warren (2015), “exploring empathy as a tool for bridging the gulf in perception of Black males’ learning and interaction needs may be beneficial for improving their academic outcomes” (p. 156). Students of color learn better from teachers and in classrooms that create a culturally relevant environment (Williams, 2015). Teachers also must have high expectations for their students in order for them to feel like the teacher cares about them and believes they have the potential to succeed (Webb & Thomas, 2015). In a study conducted by Tyre (2012), on a school based educational support model, the researchers found that with tutoring, advocacy, and mentoring the students “demonstrated significant gains in reading fluency and comprehension” (p. 236).

According to Johnson (2012) and census data for 2010,

Black males continue to be among the students most likely to be referred to the office, suspended from school, sent to an alternative school, placed into special education, drop out of school, incarcerated in a state or federal prison, or be the victim of a homicide. (p. 3)

This problem stems from a problem with the educational system as a whole. There needs to be more emphasis on determining why certain populations of students do not succeed using the current system and focus on developing a means to meet the needs of all students.

During the action research project, there was a potential for my students who came to tutoring to be embarrassed or bullied by their peers because they were receiving

extra help. In order to make sure this was not causing any undue pressure on my students in this program, their perceptions were monitored throughout the program.

### **Research Positionality**

My background as a white female in a predominantly urban setting has provided me the lens of a perspective outside of my middle-class social standing. As a female educator with 20 years of experience with a diverse student population, I have realized that you need to meet the students where they are. The relationship that was developed with my Black male students has enabled me to see the true differences within our cultures. It has also prepared me to improve my ability to reach my Black male students. As a white female, I held dual roles as a teacher and researcher. Although I hold an outsider perspective because of my ethnic and cultural background, I believe developing a trusting relationship with my student participants allowed for little disruption in our work together. I was a person the boys trusted and they knew that their voice would be heard without judgement. When collecting my data, I used quantitative data in order to illuminate some of the biases. I also recorded the interviews with the students, in order to ensure the information recorded in my data was accurate.

### **Action Research Methodology**

In this action research project, a quantitative and qualitative experimental design was used. Quantitative data was collected through pre/post testing and qualitative data was collected through group interviews of my students.

A pre-test was given to the students to determine their levels of understanding and what their areas of greatest need for instruction were. As stated in Dana and Yendol-Hoppey (2014), “these measures can be valuable sources of data for the teacher-

researcher” (p. 120). The results on the pre-test were used to determine the areas of weakness in knowledge and skill. A post-test was given at the end of the instructional unit to determine the effects of the tutoring and mentoring program on my Black male students’ academic performance in science class. The standardized test scores were not used to determine the effects of the tutoring and mentoring program due to the test scores not being available in a timely manner and due to the standardized tests not covering the same standards in the seventh grade versus the eighth grade. There are a collective of different types of assessments to measure the student learning, for this action research study, pre/posttesting was determined to be the most effective due to the time constraints of the research.

The target population for this action research project was eighth-grade Black males in all average to below average science classes, who scored below basic or did not meet the standard on the state standardized tests in science. These students received the tutoring and mentoring program three to four days a week over the course of the study.

### **Dissertation Overview**

In chapter one an introduction to the DiP for this action research study was described. This chapter includes the Problem of Practice, research questions, purpose statement, related literature review, a description of the research design and the ethical considerations. In chapter two of this DiP there is a more in-depth review of the literature as it pertains to the problem of practice and the research questions. Chapter three discusses the action research methodology that was used for this study. Chapter four contains the findings of the action research study along with the discoveries, reflections

and data analyses. Finally, chapter five contains a summary, which reveals the conclusions of the research and suggestions for further research related to the DiP.

### **Conclusion**

My action research plan outlined above was an attempt to increase the academic achievement for my Black male students in eighth grade science. The purpose of the research was to determine if a self-regulated learning, tutoring, and mentoring program affected their academic achievement. The research question in this study was based upon a twofold query: What is the impact of a tutoring and mentoring program using self-regulated learning strategies on my Black male students and their academic achievement in eighth grade science?

### **Glossary of Key Terms**

**Academic achievement:** represents performance outcomes that indicate the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments (Steinmayr, Meibner, Weidinger, & Wirthwein, 2014).

**Achievement gap:** refers to the inequalities in academic performance between groups of students generally categorized by socioeconomic status (SES), race, ethnicity, and gender (Webb & Thomas, 2015).

**Action research:** any systemic inquiry conducted by teachers, administrators, counselors, or others with a vested interest in the teaching and learning process or environment for the purpose of gathering information about how their particular schools operate, how they teach, and how their students learn (Mertler, 2014).

**African American:** refers to Americans of African descent (Johnson & Champions for Peace Mastermind Institute, 2012).

Black: “generally, refers to a person with African ancestral origins” (Agyemang, Bhopal, & Bruijnzeels, 2005, p. 1014).

Mentoring: is a social relationship involving an inter-personal exchange influenced by both the mentee and mentor perceptions of the other (Pfund, Byars-Winston, Branchaw, & Eagan, 2016).

Opportunity gap: the disparity in access to quality schools and the resources needed for academic success, such as early childhood education, highly prepared and effective teachers, college preparatory curricula, and equitable instructional resources (National Opportunity to Learn Campaign, n.d., p. 1).

Self-Regulated learning: an approach to learning involving goal setting, strategy use, self-monitoring, and self-adjustment to acquire a skill (Zimmerman, Bonner, & Kovach, 1996).

Self-Regulation: self-generated thoughts, feelings, and actions that are directed toward attainment of one’s education goals (Zimmerman, Bonner, & Kovach, 1996).

Tutoring: assistance that is provided to students (“tutees or learners”) by nonprofessionals to help them attain grade-level proficiency in basic skills and, as appropriate, learn more advanced skills (Powell, 1997).

## **CHAPTER TWO: LITERATURE REVIEW**

The identified Problem of Practice is the gap in opportunity for Black males at Northwoods Middle School (pseudonym) in central South Carolina. When “there are real measurable differences among the levels of educational benefit that various groups receive,” it is an opportunity gap (Muhammad, 2015, p. 13). Black males’ opportunity gap has been well documented. These issues have become “so pervasive and common place that they have been normalized” (Norguera, 2008, p. xviii). This problem is occurring at my school and demonstrated by the performance of Black males on the 2015-2016 SCPASS test. Every year the teachers at my school analyze their test data. We spend hours talking about what needs to be done to move the students who are not meeting the expectations on the standardized tests, and there does not seem to be any follow through. After the meetings, the teachers go back to their rooms and continue on the same way. I did not want to do this; I want to help my students achieve. The continued opportunity gap for these students in science achievement was the purpose of this action research study. The study is aimed at determining if there was an impact on the academic achievement of Black males involved in the tutoring and mentoring program at Northwoods Middle School.

### **Historical Context**

Since the 17<sup>th</sup> century, historians have shown that the Black community have always pursued education since they entered the United States as enslaved labor. This

pursuit of education took the form of educating themselves individually and as a collective. African Americans were even able to start private schools of their own by the 18<sup>th</sup> century (Childs, 2017). They were able to accomplish this during a time of extreme resistance to the education of Black people who were enslaved. History teaches us that the African American community has always valued education, they were willing to put their life on the line just to learn how to read. Even though the schools for African Americans were poorly funded, with little to no resources, and with underpaid teachers, they were still able to educate their students. The schools were overcrowded and still able to educate their students, the students wanted to learn and receive the deep cultural education they were being taught. Which is unfortunately not the case in the educational system at present.

Education was eventually outlawed for enslaved African Americans in the South; however, they found ways to learn to read. Frederick Douglass learned to read by trading bread for lessons from the poor neighborhood White children. Others would be encouraged to play school with the master's children to obtain knowledge (Childs, 2017).

After the Civil War, the Anglo-Americans did not want the newly freed Black population attending their public schools (Spring, 2014). The schools that were created for African Americans were underfunded and in buildings that were not maintained (Spring, 2014). These schools were supposed to be separate but equal. The schools were anything but equal, these schools received much less than their White counterparts, the Black students had limited numbers of books, if any, the buildings were dilapidated and their teachers received less pay (Childs, 2017). Church organizations also helped in the education of African Americans after the civil war.

After the war, every former slave became a learner, every person a teacher, every place a school—or so it seemed. With torn spelling books and reading primers in hand, freed people gathered in homes, in cellars, in sheds, in corners of meetinghouses, even under shade trees during breaks from working their crops. African American children learned from teachers, and older family members learned from them. In one classroom, a six year-old girl sat alongside her mother, her grandmother, and her great-grandmother, who was over seventy-five years old. All of them were learning to read for the first time. (Sandifer & Dishong Renfer, 2003, para 5)

Many of the African American schools were overcrowded with students who wanted to receive an education. Education was seen as the great equalizer. The African American schools were rich in culture and in building the knowledge of their students. The African American school, A.H. Phillippi School in Pennsylvania only had forty-one students attending school there between 1890 and 1920, “many who did went on to become successful professionals” (Doane, n.d., para. 7).

Despite the unequal education, African Americans who were free prior to the Civil War “were instrumental in shaping U.S. policy throughout abolition and beyond” and “necessary for the U.S. to become a world power by the 20<sup>th</sup> century” (Toldson, 2014, p. 101). Post-Civil War, African Americans “influenced U.S. arts, agriculture, foods, textile, language, and invented technological necessities such as the traffic light and elevators, and parts necessary to build the automobile and person computer” (Toldson, 2014, p. 101). In the late 1800’s, there was still the oppression of the African Americans, at this time the Jim Crow Laws were in force, which were the first laws of



segregation. The *Plessy v. Ferguson* case that went to the Supreme Court and upheld segregation, it was fair and legal as long as it was separate but equal. During this time, it was separate but far from equal in the educational system. This was the case until *Brown v. Board of Education* in 1954, when the U.S. Supreme Court unanimously ruled public school racial segregation violated the 14<sup>th</sup> Amendment of equal protection (History.com, 2009). Desegregation of public schools was not welcomed, was slow to occur and sometimes ended in violence. African Americans have struggled throughout the history of the United States in their pursuit of a fair and quality education and are still struggling today.

The U.S. Department of Health, Education, and Welfare have continued to evaluate the availability of equal educational opportunities for children regardless of race, gender, and income. According to the standardized achievement test results conducted by the National Assessment of Educational Progress (2016) between 2009 and 2011, this gap in opportunity for Black males is not being closed by the educational system in place today. NAEP shows that Black male students are approximately two grade levels behind their White peers in math and reading (2016). NAEP reports that upon entering American public schooling, Black males are behind their White and Asian counterparts. This opportunity gap makes it difficult for these students to ever catch up throughout their school career (2016).

Some people believe that the opportunity gap should be closing and that minority students do not try hard enough or are not motivated enough in their education. As stated by Darling-Hammond (1998), some of the reasons for the negative outcomes for children of color

are much more a function of their unequal access to key educational resources, including skilled teachers and quality curriculum, than they are a function of race. In fact, the U.S. educational system is one of the most unequal in the industrialized world, and students routinely receive dramatically different learning opportunities based on their social status. (para. 3)

Eight years ago, Howard (2008) revealed that the majority of Black males did not reach proficiency in math, reading, science and social studies in grades fourth, eighth, and twelfth grades. According to NAEP (2018), today's opportunity gap in education continues to deepen, and therefore, it must be addressed to ensure that Black males in order for them to become successful lifelong learners. The education system must find ways to focus on the strengths of Black males, to encourage them and help them to overcome this opportunity gap created by unequal education.

### **Theoretical Base**

#### **Black Males**

Despite the unequal opportunities afforded to Black males, there have been many successful and influential Black males throughout history. Richard Allen was born enslaved, but eventually bought his freedom along with his families' freedom. He became a licensed preacher in the Methodist Episcopal Church. He was chosen as the first Bishop of the newly established African Methodist Episcopal (AME) Church in 1816 (Henretta, 1997). Frederick Douglass was also born enslaved; he ran away from his master and was free. Douglass was a force against slavery and was at the White House for President Abraham Lincoln's second Inauguration. Douglass believed in the Constitution and that it only needed to be amended to give all people the rights they deserved. He also helped to

build Black institutions including colleges (Gopnik, 2018). Booker T. Washington was another Black man born into slavery, who gained his freedom. Washington was educated at the Hampton Institute and founded the Tuskegee Normal and Industrial Institute in Alabama. Washington believed that this type of vocational education would give Black Americans a chance at economic freedom (Wormser, 2002). W.E.B. DuBois another important Black American, who disagreed with Washington's views, was instrumental in the civil rights movement. DuBois was educated at Harvard, was a visiting professor at Atlanta University, and an author. DuBois was also an officer for the National Association for the Advancement of Colored People (NAACP). He was also instrumental in the studying of the African American identity and culture in Philadelphia and in the south (Holt, 2008). There are so many other Black men who have overcome the adversities and impacted the history of African Americans, such as Thurgood Marshall, Dr. Martin Luther King, Jr., and Barack Obama. There are many African American males that are successful in business. One is Daymond John, who in 1989, launched his own clothing line, Fubu. John also is an investor on ABC *Shark Tank* and a marketing mogul (Belanger, 2018). Robert L. Johnson is another successful business man, as "the founder of Black Entertainment Television, or the BET network" and "has the title of America's first black billionaire" (Belanger, 2018, n.p.). Even with all of these successful Black males, there still seems to be a disconnect in the education system with them today. The opportunity for Black males in the educational system still is not equal.

In an article by Webb and Thomas (2015), they discussed the factors that contribute to the opportunity gap of Black males. The socioeconomic factors that are part of the cause of the opportunity gap are poverty and nutrition (2015). The lack of proper

nutrition and the lack of medical care has an impact on a students' ability to learn. Students who are hungry are not going to be focused on learning. Children who are poor also enter school with less exposure to enhanced vocabulary and also have limited access to reading materials, which leads to weaker language skills (2015). Other exterior factors discussed by Webb and Thomas (2015) were the media's influence on Black males. This research found that many Black males "get their view of what a man should be from television, magazines, newspapers, and the internet" (Webb & Thomas, 2015, p. 3). The problem with this for Black boys is that the news media often portrays Black males in negative ways, such as violent, threatening, disrespectful, and over sexualized (2015). The media distorts the images of Black masculinity and have thus projected that "African-American males are typecast as entertainers, clowns and super-athletes" (Gause, 2005. p. 19). These views can impact the way that boys see themselves and people perceive Black males and unfortunately this perception can also affect teachers.

Some of the methods teachers can use to help with closing the opportunity gap are found through forming strong social bonds with these students. Teachers need to have high expectations for their students, because research shows, the "teachers' beliefs of students are often what they believe of themselves regarding academics" (Webb & Thomas, 2015, p. 5). Teachers need to become culturally relevant teachers, by becoming familiar with cultural knowledge of African Americans and use this knowledge to modify our curriculum and instruction to focus on the students' strengths (Boutte & Strickland, 2008). Moreover, teachers can find time for additional instructional time for students who need to improve their academic performance (2015).

Tatum (2015) discussed how to engage Black males in reading in order to help with the gap in literacy. He adds that educators need to consider where the Black males are coming from and ground literacy in larger ideals (2015). He also stated that “neither effective reading strategies nor comprehensive literacy reform efforts will close the achievement gap in a race- and class-based society unless meaningful texts are at the core of the curriculum” (2015, p. 3).

Thomas and Stevenson (2009) in a review of research on gender risks and education of Black males, discussed the following: gender and racial disparities in classroom opportunities, interaction with teachers in the classroom, and finally recommendations for future research and interventions tailored to these students. One of their findings stated, “African American boys tend to perform more poorly in math and science than do students from other racial groups” (2009, p. 163). This disparity may be due in part by the teacher expectations, who “tend to have lower expectations for the abilities and performance of African American” male students (2009, p. 162). Teachers with low expectations are less likely to encourage Black males to enroll in advanced courses, such as math and science. Some interventions suggested for improvement are working with teachers on classroom management practices, addressing racial/cultural identification, that do not ignore “the gender and racial dynamics in the classroom,” and teaching socio-cognitive problem-solving skills to students (Thomas & Stevenson, 2009, p. 174).

In an article written by Holcomb-McCoy (2011), she discussed the incredible role ethnicity plays “in shaping behavior and has been identified as a significant factor in black student achievement” (p. 60). Black youth look to others within their ethnic group

as role models. An ethnic group is defined “as a group of persons distinguished largely by common culture, typically including language, religion, or other patterns of behavior and belief” (Cornell & Hartmann, 2007, p. 17). However, the images used by news media often portray Black youth as disproportionately negative. In K-12 public schools there is a precise scarcity of Black teachers who can be used as positive role models. In a national survey, 98% of 18-year-olds and 85% of 10-year-old Black youth selected either sports figures or athletes as their role models (Holcomb-McCoy, 2011). There is a serious need for more positive role models to engage within the school environment and climate from the community.

Black males are plagued with racism and stereotypes from society, and underachievement in traditional school environments. Muhammad (2015) described race as a social construct and people’s perception and ideas about race are socially constructed. Race only “has value in our minds and in our social systems;” therefore, race cannot be the problem, “The problem must be our *perception* about race and how race has played out in our society historically in a concept called *racism*” (p. 16). Racism manifests itself in governments, policies and systems, based on a doctrine or belief that “inherent differences among the various human races determine cultural or individual achievement” (p. 16). Usually one race believes the idea they are superior and have the right to rule over other races. These are some of the reasons more Black students are disciplined in the school and why the opportunity gap exists. According to Muhammad (2015),

Thus, our social view of race is a problem for both the perpetrator of racism and the victims of racism. In our journey to achieving equality in schools and closing

the achievement gap, the first step is to acknowledge that racism exists. Without this first step, recovery is nearly impossible. (p. 17)

Racism must be dealt with before African Americans, Native Americans, Pacific Islanders, and Latin students are able to achieve the equality in schools and society that they are guaranteed by the U.S. Constitution.

Holcomb-McCoy (2011) also discussed the cultural schisms between the Black students and their families' lack of trust for schools and school personnel which is not uncommon because some schools are unfriendly and uninviting with regards to their culture. Some Black parents feel their judgment is questioned by educators along with their parenting skills, as well as their values and their abilities (Holcomb-McCoy, 2011). In some cases, Black families interpret a cultural disconnect with schools, more so than other cultures, due to the "dominance of European American culture in public school curriculum," and the lack of diversity in the leadership of some schools (Childs, 2017, p. 44). Black males need support, loving discipline, and nurturing in the school environment, but are usually shunned, labeled and "treated in ways that create and reinforce an inevitable cycle of failure" (Noguera, 2008, p. xxi). Black students who hear two opposing messages; their families are encouraging them with hope and mobility, whereas the schools are giving them messages of helplessness and deficiency which does not encourage them or assist them in closing their opportunity gap (Holcomb-McCoy, 2011). Black parents need to be informed and involved in the educational process of their youth; therefore, they must ensure they are active and present. If parents are not active, problems arise for the student and teacher alike. Schools should ensure that information is delivered to parents in multiple forms, in order to make sure they receive it.

Harper and Davis (2012) conducted a study on Black males in college to find out how they were able to succeed when so many other Black males do not. Harper and Davis (2012) found that the participants in their study were constantly encouraged to get an education by their adult family members, including those who were “denied equitable educational opportunities themselves” (p. 117). The young Black men in their study believed that education was their way out and the great equalizer for them. The family members of these students were always reminding them to do their best and had high expectations for them. These young men were not allowed to be out late or not allowed outside; they were kept inside and out of trouble. Some of the parents moved to different neighborhoods to make sure their sons were safe. Some of the students would stay after school for hours to be around teachers and other peers who were as academically focused (2012).

Morris and Adeyemo (2012) discussed how Black males are not expected to excel in the classroom, and yet they are depended upon the athletic field. They discussed how Black males’ academic talents should be cultivated by the educational community and society as strongly as their talents are cultivated preparing them for athletics. There seems to be a paradox that a person can be either an athlete or intelligent, but not both. Black males “represent about 6% of the total U.S. population, but comprise over 66% of professional football players and 82% of professional basketball players.” However, Black males “represent only 3% of physicians and surgeons and 2% of attorneys” (Morris & Adeyemo, 2012, p. 30). Morris and Adeyemo (2012) highlighted that schools have athletic booster clubs to assist the athletes and their sports, but why not have academic booster clubs to assist these same students with their academics? When the father and



male figures were absent from Black male homes, these young men were being raised in a single-parent home usually by their mothers. The Black males who were being raised with the father present were less “likely to drop out of school, engage in risky behaviors such as drugs, sexual activities, or gangs” (Morris & Adeyemo, 2012, p. 32). Morris and Adeyemo (2012) expressed the need for the academic opportunity gap of African American male students to be addressed in a serious manner. All students’ academic needs should be addressed, “however, in comparison to black males, other students’ life chances are not as dismal, incarcerations levels are not as high, underachievement is not as horrific, and imagery as outstanding athletes instead of outstanding students is not as pervasive” (Morris & Adeyemo, 2012, p. 32). Policy makers, educators, and parents need to support the academics of Black males as fervently as the coaches and booster clubs support their athletics.

A case study conducted by Brown and Medway (2006) on a school in the state of South Carolina, that seemed to overcome the problems associated with teaching in a school plagued with poverty and race issues. The academic achievement upon statewide achievement tests of the school studied “was well above both the school district’s and the state’s average even though most students’ families had incomes at the poverty level” (Brown & Medway, 2006, p. 531). Most of the students attending this school were of low socioeconomic status and lived in federally subsidized housing. Also, 86% of the students received free lunch at the school because of their poverty status. The school’s special education students accounted for 34% of the school’s population. The racial diversity of the school was broken down to “71% African American, 28% Caucasian, and 1% Hispanic” (Brown & Medway, 2006, p. 531). There were seven themes that were

identified by the researchers: 1 - “sense of collegial cohesion”, 2 - “hands-on approach to curriculum instruction works best”, 3 - “overarching teaching philosophy that all children can learn”, 4 - “communicating that all students will be successful”, 5 - “high expectations for all students”, 6 - “parents play a vital role in student success”, and 7 - “teacher education does not prepare educators to work with diverse student populations” (Brown & Medway, 2006, pp. 534-535). The teachers’ classes and lessons were videotaped and most of the seven themes were apparent in their teaching. The main message that was sent to all of the students was that “all students can succeed” (Brown & Medway, 2006, p. 535).

### **Self-Regulated Learning**

Academic self-regulation, according to Zimmerman, Bonner, and Kovach (1996), “refers to self-generated thoughts, feelings, and actions intended to attain specific educational goals, such as analyzing reading assignments, preparing to take a test, or writing a paper” (p. 2). Self-regulated learning is a cycle. The students follow the cycle and adjust their strategies in each part of the cycle as necessary. The cycle described by Zimmerman et al. involves the following interrelated processes:

- *Self-evaluation and monitoring* occur when students judge their personal effectiveness, often from observations and recordings of prior performances and outcomes.
- *Goal setting and strategic planning* occur when students analyze the learning task, set specific learning goals, and plan or refine the strategy to attain the goal.
- *Strategy-implementation monitoring* occurs when students try to execute a strategy in structured contexts and to monitor their accuracy in implementing it.

- *Strategic-outcome monitoring* occurs when students focus their attention on links between learning outcomes and strategic processes to determine effectiveness. (p. 11)

By using these self-regulating strategies, teachers can help their students learn to determine the links between their study habits and behaviors with their learning and academic outcomes. The students will eventually become independent and use these strategies on their own without the teachers continued input.

In a study conducted by Daniela (2015) on the relationship between self-regulation, motivation and performance of secondary school students, the researcher found that “the competence of self-regulated learning has a strong impact on the level of attainment achieved by students, enhancing the relationship between motivation and performance” (p. 2549). This study was conducted on 270 students ranging in age from 12 to 14 years, consisting of 129 boys and 141 girls. The study had two objectives; the first was to determine what factors motivated middle school students, such as interest in subject, self-efficacy, and locus of control, and influenced their performance level in school; and the second was to determine if self-regulated learning had an impact on their school performance levels.

Self-regulation, as described in the research, is “listed as the child’s ability to ‘(1) control the response to stress, (2) the ability to maintain focused attention and (3) the ability to interpret mental states’” (Daniela, 2015, p. 2550). Students are able to learn self-regulation by engaging in self-reflection and through experience. The researcher administered two questionnaires to the students. One was the Academic Self-Regulation Questionnaire and the second was Motivated Strategies for Learning Questions, the

Chinese version. Through the questionnaires the researcher found that students are not motivated by the pleasing of others, but through their internal motivation. Through intrinsic and personal motivation, students understand that they are responsible for their academic achievement. The research concluded there was a strong impact, using self-regulated learning, on the achievement of the students. There are two reasons given for the importance of self-regulated learning; first, “it enhances the motivational level and allows the student to be accountable for their own learning” and second “it determines indirectly changing patterns of poor behavior and positively influence the level of achieved performance” (Daniela, 2015, p. 2552).

A study conducted by Andrzejewski, Davis, Shalter Bruening, and Poirier (2016) tried to determine whether self-regulated strategy intervention could close the achievement gap in ninth grade earth science. In the study, self-regulated strategies were taught to the students in earth science class. “Self-regulated learners are able to set goals, select appropriate skills, monitor performance, create support structures, manage time, evaluate methods, make causal attributions, and adapt the methods they choose” (Andrzejewski et al., 2016, p. 86). Some students receive instruction on the self-regulated strategies at home and school. The students who do not receive these strategies at home need to be explicitly taught these skills and have the opportunity to observe how these strategies can benefit their learning. The goal of this research program “was to develop students’ feelings of empowerment,” which is defined “as a process by which individuals gain control over their lives” (Andrzejewski et al., 2016, p. 86).

The research design was a “quasi-experimental, classroom-based intervention involving two out of four earth science teachers and data from twelve science classes”

(Andrzejewski et al., 2016, p. 88). The study was conducted on 178 ninth grade students who were from a middle-class school district with a variety of racial and ethnic groups and included lower income neighborhoods. The study also had a control group of 99 ninth grade students who were at the same school and received the same curriculum; however, the teachers were different for each group. The students were instructed on the self-regulated strategies, were required to use them daily, and were reminded by their teachers to reflect on their work in their folders. The researchers found that the ethnically diverse students and the economically disadvantaged students achieved higher scores in all of their four core subject area classes. The white and middle-class students did not experience a significant difference in their achievement. The researchers' findings "suggest that Minority students who 'seem' disengaged may actually be highly motivated but have a strategy deficit and not know how to channel their motivation into master and performance" (Andrzejewski et al., 2016, p. 97).

Pilegard and Fiorella (2016) conducted a study to determine the effects of generative learning strategies improvement on self-regulation. "Generative learning strategies encourage students to actively make sense of the material by reorganizing it and fitting it with their existing knowledge" (Pilegard & Fiorella, 2016, p. 121). The study participants were 78 middle school students. Of the 78 students, 25 were in the generative summary group, 25 were in a generative explanation group, and 28 made up the control group. One of the generative learning strategies that the students engaged in was writing summaries after activities. The researchers concluded that the evidence showed a positive correlation between the improvement of self-regulation for the students who engaged in generative learning strategies. Researchers also discovered that the

students who engaged in the generative learning strategies were more likely to seek help with their learning.

Self-regulated strategy development was also investigated by Hacker, Dole, Ferguson, Adamson, Roundy, and Scarpulla (2016), which was on writing for middle school students. The researchers studied both the short-term and maintenance effects of the self-regulated strategies. The study was conducted on about 800 students, 312 were in the treatment group and 222 were in the control group, both groups were similar with regards to income, ethnicity, race and special education. The study design used was a pre/posttest writing with a supplemental writing score for a writing obtained two months after the instruction had initially occurred. The writings were scored by a computer program called Utah Write©, which is a “Web-based assessment tool that grades essays using six traits (i.e., voice, organization, ideas, conventions, word choice, and sentence fluency)” (Hacker et al., 2016, p. 359). A five-point scale was used on each trait for a total composite score of thirty on the writing. The results indicated there was no significant difference between the scores of students who had been taught the self-regulated strategies and the students who were taught using the traditional teaching method. The treatment group was given another writing after two months had passed in order to determine the longer-term effect, if any, of the self-regulated strategies. The results indicated there was significant growth in the students writing skills, their “writing skills increased from a mean of 0.77 at the instructional interval to 1.64 at the maintenance interval” (Hacker et al., p. 366).

In the article by Ben-Eliyahu and Linnenbrink-Garcia (2015), the researchers were trying to determine how post-secondary students and secondary students measured

up to each other on using the self-regulated learning skills. In the study, there were 178 high school students and 280 college students. The study only used high school students who were most likely to attend college after high school. The students were given a survey with three parts, the first two parts asked about favorite and least favorite courses, the third section asked about demographic information. The findings of the study were as follows:

For high school students, planning was positively related to all forms of self-regulated learning strategies in favorite courses, it was only related to deep processing and organization in least favorite courses. For college students, planning was positively associated with all forms of self-regulated learning strategies across both learning contexts, except surface processing in favorite courses. (Ben-Eliyahu & Linnenbrink-Garcia, 2015, p. 31)

The researchers concluded that if the students were not able to regulate their basic emotions, they would not be able to successfully self-regulate their learning in the courses. Ben-Eliyahu and Linnenbrink-Garcia (2015) proposed, “Such affective, behavioral, and cognitive regulatory processes set the stage for more specific learning strategies, and can be thought of as broader from a hierarchical perspective” (p. 37).

### **Tutoring and Mentoring Programs**

Tyre (2012) conducted a study on educational supports for middle school students in the Foster Care System; these supports included tutoring, advocacy, and mentoring. Some of the difficulties with the study were focused upon attendance due to the change of placements that occurred and due to suspension of students. The study reported that 93% of the students passed their classes on average and “students had an average GPA of

2.3 on a four-point scale, with 63 percent of students attaining a GPA of 2.5 or higher” (2012, p. 234).

Hedin and Gaffney (2013) conducted a study on tutoring of struggling readers and how the teachers used different types of interventions to assist the students during instruction. The study found the students who had more profound reading problems needed a larger variety of instructional interventions during the tutoring sessions. The study also found that the students participating in the tutoring did not outperform students who were just instructed in the regular class time (2013).

Nelson-Royes and Reglin (2011) conducted a study on a tutoring program for urban middle school students. The tutoring program was conducted after-school and offered academic assistance in reading, language arts, writing, mathematics, and science. The tutoring program helped redirect the focus of these students, who attended an urban public school, by aiding with test preparation, clarification of content, and with homework. The facility also provided the students with academic counseling. There were 30 students in the eighth-grade who participated in the study, half of the students were issued vouchers for the program due to living in low-income homes. The ethnic breakdown of the group was 48% African American, 43% Caucasian, and 9% Hispanic students represented in the study group.

“The study only evaluated the reading component, because reading is the foundation of all learning and represents a major desired objective of schools throughout the United States” (Nelson-Royes & Reglin, 2011, p. 106). The research design used for this study was the descriptive-interview research design. In the study, there were six teachers, who were conducting the tutoring, and one facility director, all of whom were



interviewed face-to-face by the researcher. “Three research questions were investigated through the collection and analysis of qualitative data from 15 content-valid interview questions” (Nelson-Royes & Reglin, 2011, p. 105). The study reported reading improvement of more than 95%. The reading program consisted of one-on-one reading sessions with the students. This amount of improvement was seen in every student in the program who attended for at least 12 weeks (2011).

In the study by Mulyadi, Basuki, and Rahardjo (2016), the researchers studied the effects of the tutorial system on homeschooled students. The study was conducted on 205 homeschooled high school students ranging in ages 15-19 years old. “The students must act independently in discovering and identifying the subject matters while the teacher only serves as a facilitator rather than instructor” (Mulyadi et al., 2016). This study had four variables that were measured to determine their influence on each of the other variables, the variables measured were as follows: tutorial system perception, self-regulated learning, creativity, and academic self-efficacy. The results indicated there was significant influence towards academic self-efficacy from the tutorial system perception and of academic self-efficacy towards self-regulated learning. The students were given more of control over their learning with the teacher as a facilitator and not teaching the students the material. “When students feel more confident that they are able to do and accomplish all academic demands in the form of assignments and exams, they will develop a process of self-learning or self-regulated learning” (Mulyadi et al.).

Tolbert and Maxson (2015) investigated the possibility of a mentoring and tutoring program developed in order to break the cycle of disadvantage in Tuskegee, Alabama. Next Step Up was formed as “a mentoring and tutoring program that aims to

address a combination of environmental and social factors and ultimately improve the educational aspirations of Tuskegee's youth" (Tolbert & Maxson, 2015, p. 512), Environmental factors that impact the development of youth include exposure to influential role models, quality of education, social cohesion and socioeconomic status. The environmental factors can work against Black students who have high educational aspirations. Poor academic performance, disinterest in school and lack of motivation can negatively influence these aspirations. Especially in neighborhoods where there is high poverty, high crime rates, lack of resources and joblessness. Tutoring and mentoring can be tools to mediate the influences of the negative environment and help to improve student educational aspirations. Tutoring will help with academics, and mentoring will provide the support for the emotional and social aspects of the students' lives. "Interventions that employ both academic and social support provide students with the best opportunity for students to perform of a high level" (Tolbert & Maxson, 2015, p. 513). The program has seen improvement in academics and socialization of its students. The students and their tutors and mentors have formed bonds and meaningful relationships.

In "Reflections on Mentoring for Blacks in Academia (Editor's Commentary)," Toldson recalling Dr. Harold Cheatham, a Distinguished Alumni Award winner from Pennsylvania State University, offered this definition of a mentor, "he sees a mentor as one who observes, calls out, and cultivates unrealized potential in others" (Griffin & Toldson, 2012, p.103). Griffin and Toldson (2012) stated that Black students are especially in need of mentoring in order for them to navigate the intimidating, sometimes hostile and challenging learning environments "where their abilities may be doubted in

and out of the classroom. Ultimately, faculty from any racial or ethnic background can and should mentor Black students” (p. 103).

### **CHAPTER THREE: ACTION RESEARCH METHODOLOGY**

Dana and Yendol-Hoppey (2014) referred to action research as “research intended to bring about change of some kind ... quite often has the goal only of examining a teacher’s classroom practice in order to improve it or to better understand what works” (p.8). This action research study was conducted to examine the impact of a tutoring and mentoring program on the academic achievement of Black males in eighth grade science. This tutoring and mentoring program focused on teaching the students about self-regulated learning strategies and creating a safe place for them to express themselves. The impact of the program was measured using the following strategies: a pre/post-test and group interviews. The research question that guided the study was as follows: What is the impact of a tutoring and mentoring program using self-regulated learning strategies on my Black male students and their academic achievement in eighth grade science? Action research was the most appropriate design to use to discover the answer to my research question in order to improve my teaching practice.

#### **Role of Researcher**

In action research the role of the teacher is different than in traditional research. Whereas action research collaborates with the very people it seeks to study and the teacher is the researcher. “Teachers play a critical role in enhancing their own professional growth and, ultimately, the experience of schooling for children” (Dana & Yendol-Hoppey, 2014, p. 13). In this study, I developed the tutoring and mentoring

program for teaching the self-regulated learning strategies to determine the impact it has on the academic performance of my Black male students in eighth grade science.

As a teacher, I have tried to prepare my students to enter high school with the necessary skills to be successful. I have found that the higher the expectations, the more the students know you care, and the more challenging the curriculum the better my students perform. I make it a point to try to get to know each of my students, especially the quiet ones who sometimes get overlooked. The more I know about my students, the better I know how to connect with them and hopefully make a difference both academically and emotionally.

The challenging part about being a teacher is not being able to reach all my students, no matter how hard I try. It is also difficult to witness other teachers and former administrators treating students unfairly because of their ethnic group or the color of their skin. Over the years, there have been many instances where the system is not applied equally to all students and when I brought up the unfairness I was usually put off and ignored. This is frustrating to me because there is only so much, I can do to stand up for these students. I have reached out to the parents to let them know how they can go about fighting the system.

### **Action Research Validity**

My school is in central South Carolina and is one of four middle schools in my school district. I am one of two eighth-grade science teachers. During my career at my current school, I have served in many positions of leadership, such as, eighth-grade team leader, students council advisor, science department chair person, and also in the district as part of the curriculum team to develop guides for new curriculum for use by all of the

middle schools. I am currently the department head of the science department and also the advisor for the Rise Above It Club sponsored by our local Alcohol and Drug Abuse Council. I am teaching eighth-grade science which is an integrated science curriculum covering earth, life and physical science.

Action research allows the data found to be used to improve the quality or effectiveness of the researcher's educational processes in their class or school in a timely manner. Action research is defined by Mills, 2011 (as cited in Mertler, 2014)

as any systematic inquiry conducted by teachers, administrators, counselors, or others with a vested interest in the teaching and learning process or environment for the purpose of gathering information about how their particular schools operate, how they teach, and how their students learn. (p. 4)

In traditional research, a researcher has no control over when their insights will actually be used in practice. In action research, the researcher can immediately implement changes based on results. Action research has validity even though it does not adhere to or meet the requirements that traditional research is bound to for a study to have validity. "Validity revolves around the defensibility of the inferences researchers make from the data collected through the use of an instrument" (Fraenkel, Wallen, & Hyun, 2015, p.113). The data collected and analyzed can affect change, which is essential in the educational practices tested during the action research process.

### **Research Context**

My school's schedule is made of eight periods per day. The day consists of four core classes, English, math, science and social studies. One period for homeroom, which is used for administration purposes, and two elective/encore classes, these can be a

number of courses from physical education, music, computer, to art classes. I teach four classes of eighth-grade science per day, two of my classes consist of the advanced level students and two of my classes consist of students who are average to below average students in science. The classes are divided based on the student's performance on South Carolina Palmetto Assessment of State Standards (SCPASS) test for science. Students in the advanced level classes have to score Exemplary on SCPASS or been identified as gifted-talented students. The students in the average to below average classes score Met or lower on the SCPASS test for science.

My middle school houses sixth through eighth-grades. Student enrollment is just above 597 students, with about an equal number of students per grade level. My school employs forty teachers for all grade levels and the elective/encore teachers. I teach approximately 100 eighth-grade students. The student make-up of my school is 48.5% White, 26.5% Black, 18.4% Hispanic, and 6.6% other. The faculty make-up of my school is 22% White male teachers, 2.4% Black male teaching assistant, 4.8% Black female teachers, 70.7% White female teachers. The administrative team is made up of 67% White females and 33% White male. My school's make-up is a majority of White students and White female teachers and administration, which makes it a very homogenous school. In my school, there is a huge discrepancy between the percentage of Black students and the percentage of White teachers and administrators.

My school district consists of two high schools, four middle schools, seven elementary schools and two primary schools with a total number of 9044 students and 622 teachers (South Carolina Department of Education, 2017). My district is of average size and one of five districts in the county. My district serves a diverse population of

students. The poverty level of our students is 70.5% and 13.5% of our students have disabilities (2017).

### **Research Design**

The design followed for my action research project is by Mertler (2014). He identifies it in four stages, the planning, acting, developing, and reflecting stages.

#### **Planning**

In the planning stage of action research project, Mertler (2014), identifies the following processes that must be completed during this phase. First, the researcher must identify and limit the topic to research, I have completed this step and formed my research question. Also, during this phase, the researcher must gather preliminary information, I have spoken with my principal, teachers in the science department, and other eighth-grade teachers to discuss the problems and narrow my focus. The focus of my action research was the academic achievement of African American males in eighth-grade science using a tutoring and mentoring program to teach self-regulated learning strategies in science. The Black male students were chosen from average to below average classes based on their SCPASS scores. The students chosen had to have scores available and did not meet the grade level requirements. There was a total of 20 Black males in the entire eighth grade class. Out of the Black males with scores available on SCPASS only 10 did not meet the grade level requirements. Of the 10 Black males, I was only able to get permission to use six of them in my action research study.

I have conducted a review of related literature to determine what other researchers have found that related to my topic. The final phase of this stage of the action research process was developing the research plan.



When developing the research plan, it was important to determine what methodology would be used in the study. I used a quantitative and qualitative data design to answer my research question: What is the impact of a tutoring and mentoring program using self-regulated learning strategies on my Black male students and their academic achievement in eighth grade science? The independent variable in my research project was the tutoring and mentoring program. The dependent variable in my research project was academic achievement.

In this action research study, the students were tutored/mentored with the self-regulated learning strategies. The mentoring part of the study began by getting to know the students at the beginning of the school year. I checked in with them at least two times per week before the tutoring part of the research started. If I noticed that they seemed to be acting differently, I would make sure to speak with them to see if there was anything they needed. These students were tutored/mentored three to four times per week during the period of research. The research took place over a five-week period during the fourth nine weeks of the school year. My role during the research was the tutor and mentor to my students involved in the study, and I taught them the self-regulated learning strategies to use during all of their classes especially in science class.

### **Acting**

In the acting phase of the action research process, there were two stages, the data collection phase and the data analysis phase. The sample of students used to collect this data was a convenience sample; they were Black male students in the average to below average science classes. There was a total of six Black male students involved in the study.

**Zane.** Zane had a great personality, he was very likable, and very energetic. During his eighth-grade year, he showed a change in his behavior and academics. Zane cared about his grades and wanted to do well. He was a student who came from a single-family household. His father is incarcerated. He does have support from his extended family. His grandmother lives in the home with him and his mother. He also has an uncle who supports him financially when his mother cannot, such as field trips, fees for sports and spending money. Zane was a student with a Behavior Intervention Plan, due to his seemingly uncontrollable behavior in sixth and seventh grade. He was also held back in the seventh grade by his mother; he did not pass his classes and had behavioral issues, so she would not allow him to go to summer school.

**T.J.** T.J. was a student who I did not teach directly, he was in the other eighth grade science teacher's class. T.J. was always very polite and would speak to me every day. His teachers commented on how well he was doing in all of his classes and how he was a good student. He lived with his grandmother and there were no others who were actively supporting him. His father was also incarcerated at the time of the study.

**John.** John was a young man who was well-mannered and well-liked by the teachers and students. He was pleasant and polite to his teachers. He was also very intelligent. He lived with his mother, there was no talk of a father supporting him. John's mother was very involved in his schooling. If she was called about a behavior issue or a lack of effort on his part, she was at the school speaking with the teacher and John about the situation.

**Jay.** Jay was not at any school for the first nine weeks of school. When he came to school, he fit in with the rest of the students. He was a hard worker and always tried to

do his best. He was living with his father at the time of the study. There was no mention of his mother during our time together. He had a learning disability and received services during the regular school day. He was one of my best students in one of my classes and it was imperative that he be motivated to continue to reach his best potential.

**Ashley.** Ashley was quiet and reserved. He was well-mannered and was kind to others. He was another student in the program, who was taught by the other science teacher. We had developed a relationship before he came into the eighth grade because I taught his brother in the previous school year. He was taken care of by his mother and there was no father discussed, but he had an extended family that supported him and his family.

**Liam.** Liam was smart and polite. He knew when he had to work in order to get the grades he wanted. He was also taught by the other science teacher, however, I had him in my homeroom. Liam came from a two-parent home, and his parents were both very supportive. His mother was working on her degree to become a lawyer. He was very smart and should have been recommended for advanced classes but he did not have the support system academically from his former teachers to motivate and encourage him.

During the data collection phase, the researcher collected quantitative data through pre-post test scores. Quantitative data “includes not only items that can be counted but also ratings of one’s feelings, attitudes, interests, or perceptions on some sort of numerical scale” (Mertler, 2014, p. 137). Quantitative data collection can be done in a timelier fashion with valid and reliable results. The quantitative data for my study was derived from a science pretest and posttest using a question bank developed by my district using the state of South Carolina Science Standards. The pre-posttest was given to

all eighth-grade science students. The scores from the pre-posttest were analyzed to determine if the students' scores improved due to the tutoring/mentoring program. If available, the students' scores on SCPASS will be compared to the previous year's scores.

According to Mertler (2014), "descriptive statistics are simple mathematical procedures that serve to simplify, summarize, and organize relatively large amounts of numerical data" (p. 169). Trochim (2006) describes descriptive statistics as a way for researchers to take a large amount of data and put it in a simpler more manageable form, such as taking the average of a large number of scores to use instead of each individual score. There are limitations to descriptive statistics; however, they can still "provide a powerful summary that may enable comparisons across people or other units" (Trochim, 2006, Descriptive statistics, para. 4).

In this action research study, descriptive statistics were used when gathering test scores from pretests and posttests for the students. The mean for the pretest scores was calculated and compared to the mean of the posttest scores. The standard deviation for these was also calculated and studied. In this case, to determine if the tutoring and mentoring program teaching self-regulated learning strategies made a difference in the academic achievement of my Black male students.

The qualitative data was collected through group interviews of the students at the beginning and the end of the tutoring/mentoring program. The semi-structured group interview was conducted at the beginning of the study and near the end of the study to determine how my students felt about the tutoring/mentoring program. The interview consisted of seven questions asking about their feelings about tutoring, knowledge of

self-regulated learning strategies, their parents' feelings about the program, and if they would recommend these strategies to their friends. Their answers were coded in order to determine if any patterns or themes were found. The data was analyzed to determine if there were any connections to support or contradict my question for my action research study.

### **Developing**

According to Mills (2014), “the goal of action research is to enhance the lives of students and teachers through positive educational change” (p.172). Action planning is associated with the developing stage of action research. Reflection in action planning allows the teacher researcher the opportunity to reflect on where they have been, what was learned, and where to go next (Mills, 2014, p. 168). This part of the action research process differs from traditional research, because action research is a cyclical process. I used the data collected and analyzed to determine the type of action plan that was needed. If the data shows a positive correlation between the tutoring and mentoring program, then I will develop an action plan to incorporate the tutoring/mentoring program to more students. If the data shows no positive effects from the program, then I will develop an action plan to try to develop a different program to try to help my Black male students.

### **Reflecting**

One of the ways teacher researchers should engage in the reflective practice is to determine what the intended and unintended effects of the action research process (Mertler, 2014). Now that I am more enlightened and have new perspectives into my practices, I have to decide what to do next (2014). During the reflection stage of my research I tried to answer the following questions: How should I proceed and what should

my next action research topic include? What types of professional development might I need based on the outcome of my reflection?

Teacher researchers should engage in the reflective practice to focus on research methodology used. I need to evaluate whether or not the research questions were answered. If I conducted this type of research again, how could the research question be changed to enhance my research and collection of data? I also need to determine if the research design I used for the action research was the best for this particular study. Would the next study I conduct be done better by using a different research design and a different type of data collection (Mertler, 2014)? All of these reflective practices are necessary in my action planning because action research is a continuous cycle of research and improvement in the dynamic area of teaching; in order to give my students, the best educational experience possible.

### **Ethical Considerations**

According to Fraenkel, Wallen, and Hyun (2015), “it is a fundamental responsibility of every researcher to do all in his or her power to ensure that participants in a research study are protected from physical or psychological harm, discomfort, or danger that may arise due to research procedures” (p.63). In this action research project, I made sure the participants were fully informed about the research that was conducted, the data that was collected, and how the information was used. The parents were informed that participation was fully voluntary and there were no repercussions if their student did not participate in the study. The participants’ parents were given informed consent forms that were signed in order to give permission for their student to participate in my action research project. The informed consent forms detailed the research study to be conducted

and how the identities of their students were being kept confidential. The informed consent form was clear that the participants could choose to end their participation at any time during the study. During the action research project, the students were assigned numbers in order to keep their identity confidential.

Mertler's (2014) principle of beneficence was being adhered to because this action research project allowed me to determine whether a tutoring and mentoring program would benefit my Black male students. If proven effective, my study outcomes may allow my school to incorporate this program to benefit more Black male students and other students in our school, who may need the added support of this type of program. The principles of honesty were also being exhibited due to the informed consent form and full disclosure of the intent and procedures of the action research project given to the participants and their parents (2014). The principles of importance were also included in the study. If the action research project indicated a significant improvement due to the tutoring and mentoring program for Black males, this may help in decreasing the educational opportunity gap between them and their white counterparts in science education (2014).

### **Conclusion**

The proposed action research plan sought to find a solution to the problem I have identified at Northwoods Middle School. The purpose of this study was to determine if the proposed tutoring and mentoring program had an effect on the academic achievement of my Black male students. The action research question that guided this study was as follows: What is the impact of a tutoring and mentoring program using self-regulated learning strategies on my Black male students and their academic achievement in eighth

grade science? In order to achieve this goal, I used the action research methodology described by Mertler (2014), and the cyclical nature of planning, acting, developing, and reflecting. When the four phases of the action research model were completed the research, question was answered and there was an action plan developed for the future and shared after in depth reflection of the research question and the methodologies used to complete the study.



## **CHAPTER FOUR: FINDINGS FROM THE DATA ANALYSIS**

The purpose of Chapter Four of this action research study is to discuss the results and convey the findings. The identified Problem of Practice is the opportunity gap of Blacks males at Northwoods Middle School in central South Carolina. The identified problem evolved from the need to lessen the opportunity gap of Black males, specifically in eighth-grade science by tutoring and mentoring these students in self-regulated learning strategies. In order to address this problem of practice, I investigated the impact on academic achievement and behavior of my Black male students involved in my tutoring and mentoring program, teaching self-regulated learning strategies at Northwoods Middle School.

In my school, there was a total of 20 Black males in the entire eighth-grade class. Of these 20 eighth-graders, only 10 of them were “Not Met” on the SCPASS test for science. Out of the 10 students “Not Met” in science, I taught science to only four of these students. I invited all 10 of the “Not Met” students to join in my tutoring/mentoring program, even though they were not all my students. Only six students’ parents gave permission for their students to participate in this study, three of the students were taught science by me, and three of the students were taught by my teaching partner.

### **Problem of Practice**

The identified Problem of Practice is the opportunity gap for Black males at Northwoods Middle School in central South Carolina. The identified problem evolved

from my desire to try to lessen the opportunity gap for my Black male students, specifically in eighth-grade science by tutoring and mentoring these students in self-regulated learning strategies. All students have the ability to learn, and as a teacher, my job is to try to lessen the opportunity gap. In 2015, the results from the ACT Aspire Summative assessment indicated that Black males in Northwoods Middle School in the eighth-grade scored lower than their White male counterparts in the common core curriculum area of science (ACT, 2015). Specifically, 48% Black males and 70% of White males scored on “grade level” on the ACT Aspire Summative assessment (ACT, 2015). The 2015-2016 academic year results from the SCPASS show a difference in science achievement, 79.2% for Whites on “grade level” and only 47.7 for Blacks on “grade level” (South Carolina Department of Education, 2015). In 2016-2017, SCPASS scores continued to demonstrate a difference in achievement in science between Black and White students, 27.1% of Blacks “meets expectations” or “exceeds expectations” compared to 68.7% of Whites “meets expectations” or “exceeds expectations” (South Carolina Department of Education, 2017). Standardized assessments are biased towards the majority and do not take into consideration the students who are in the minority. The inequities in education caused by continued racism and poverty are being compounded and creating more damage through high-stakes testing. Especially African American males, who are frequently misplaced or disproportionately placed into special education based on these types of standardized test results (FairTest, n.d.). In this action research study, I investigated the impact on academic achievement for my Black male students involved in the tutoring and mentoring program at Northwoods Middle School.

## Research Question

In an effort to help lessen the opportunity gap of my Black male students specifically in eighth-grade science, the following research question was addressed:

RQ: What is the impact of a tutoring and mentoring program using self-regulated learning strategies on my Black male students and their academic achievement in eighth grade science?

Sub-question: How will my Black male students perceive the tutoring and mentoring sessions?

The goal of this action research study was to determine if self-regulated learning strategies tutoring had an effect on the academic success of my Black male students on a specific unit in the science curriculum in eighth-grade science. The mentoring part of the program was achieved by being an advocate for these students during the school year as needed. Also, during this mentoring time, the students and I built a community of learning and accountability. Due to scheduling concerns the program was conducted in the mornings before school started. I used this limited time to introduce the self-regulated learning strategies during the tutoring time. I also used this time to get to know my students and mentor these boys involved in my action research study. The tutoring and mentoring program focused on the development of the self-regulated learning strategies needed to improve their academic performance, specifically in science. The impact of this tutoring and mentoring program was analyzed in order determine if this type of program was beneficial to my Black male students and help to lessen the opportunity gaps created by the educational system.

The tutoring and mentoring were done before school began in the mornings. The tutoring portion of the program focused on the development of the self-regulated learning strategies needed to improve their academic performance, specifically in science. The specific strategies focused on were self-evaluation, monitoring, goal setting, strategic planning, implementation, and outcome monitoring. The mentoring part of the program focused on how the students were doing in all of their classes and what problems they were facing. I met with my students before school at least three days per week for approximately five weeks. The first week was used to conduct the pretest on the science unit on the geological time scale and fossils and to get to know the students I did not teach. I also conducted a focus group interview with my students at the beginning of the study and again at the conclusion of the study.

A typical morning during tutoring started with me reviewing what strategies the boys were supposed to work on that day or discuss how they had used the strategy they were supposed to work on the night before. I used the Power Point on self-regulated learning strategies, and we discussed the strategies, how to use them, or how they used them the night before. I made sure they knew what they were supposed to work on for the next session, and then we would run out of time. The sessions typically lasted about 15 to 20 minutes, depending on when the boys arrived. The boys were allowed to be comfortable in my classroom, because this was not a class and was not structured as such. They could sit in a desk or move around as long as they were involved in the lesson on the strategies. I wanted them to want to be there and feel like they were free to come and go as they pleased. My classroom in the morning was supposed to be a safe place for them to come and be themselves.

On the mornings when we focused on the mentoring part of the program, the boys were free to do what they wanted within the confines of school. I let them drive the conversations and allowed them to tell me whatever was on their minds. To a passerby, it might have resembled simply playing around.

On a tutoring day, if the boys had something that was on their minds and they were unfocused, we talked about what was going on with them. This program was designed to be flexible in order to meet the needs of these boys. The most important part of the program, was developing a place where they felt safe, cared about, and like their voices mattered.

Only four of the six students attended the tutoring/mentoring program on a regular basis. The two students who did not attend regularly were brought to school by their parents and were usually late to school. Two of the students were not present on the day of the pretest, but took the posttest, their scores were not used in the calculations, due to not having a pretest score for comparison. During the focus group interview, five of the six students were present for the interview at the beginning of the study and all six were present at the interview on the final day of the tutoring/mentoring program.

## **Findings of the Study**

### **Results of the Pretest and Posttest**

The student participants were given the pretest during the first week of the study. The unit of study for this action research focused on Earth Science: Earth's History and Diversity of Life. The pre/posttest was developed to emphasize the following eighth grade science content standard 8.E.6 (SCDOE, 2015). Standard 8.E.6, conceptual understanding and performance indicators for this study are:

**Standard 8.E.6:** The student will demonstrate an understanding of Earth’s geologic history and its diversity of life over time.

**Conceptual Understanding 8.E.6A:** The geologic time scale interpreted from rock strata provides a way to organize major historical events in Earth’s history. Analysis of rock strata and the fossil record, which documents the existence, diversity, extinction, and change of many life forms throughout history, provide only relative dates, not an absolute scale. Changes in life forms are shaped by Earth’s varying geological conditions.

**Indicators:** Students who demonstrate this understanding can:

8.E.6A.1: Develop and use models to organize Earth’s history (including era, period, and epoch) according to the geologic time scale using evidence from rock layers.

8.E.6A.2: Analyze and interpret data from index fossil records and the ordering of rock layers to infer the relative age of rocks and fossils.

8.E.6A.3: Construct explanations from evidence for how catastrophic events (including volcanic activities, earthquakes, climatic changes, and the impact of an asteroid/comet) may have affected the conditions on Earth and the diversity of its life forms.

8.E.6A.4: Construct and analyze scientific arguments to support claims that different types of fossils provide evidence of (1) the diversity of life that has been present on Earth, (2) relationships between past and existing life forms, and (3) environmental changes that have occurred during Earth’s history.

8.E.6A.5 Construct explanations for why most individual organisms, as well as some entire taxonomic groups of organisms, that lived in the past were never fossilized.

**Conceptual Understanding** 8.E.6B: Adaptation by natural selection acting over generations is one important process by which species change in response to changes in environmental conditions. The resources of biological communities can be used within sustainable limits, but if the ecosystem becomes unbalanced in ways that prevent the sustainable use of resources, then ecosystem degradation and species extinction can occur.

**Performance Indicators:** Students who demonstrate this understanding can:

8.E.6B.1: Construct explanations for how biological adaptations and genetic variations of traits in a population enhance the probability of survival in a particular environment. 8.E.6B.2: Obtain and communicate information to support claims that natural and human-made factors can contribute to the extinction of species. (p. 68)

The pre/posttest was composed of 19 multiple choice questions and nine true/false questions to assess the students' knowledge of the content standards prior to instruction.

The pretest results provided me with a baseline of students' knowledge of the content related to the standards of Earth's History and Diversity of Life. Below in Table 4.1 is the number of questions per conceptual understanding and indicator for the pre/posttest, some of the questions apply to more than one indicator. The table also includes the percentage of correct answers for the pre/posttest for each indicator.

Table 4.1

*Standard Indicators per Question and Percentage of Answers Correct on Pre/Posttest*

Question	Indicators	% Correct Pretest	% Correct Posttest
1	8.E.6B.1, 8E.6B.2	50	50
2	8.E.6B.1, 8E.6B.2	50	50
3	8.E.6B.1, 8E.6B.2	25	75
4	8.E.6B.1, 8E.6B.2	50	50
5	8.E.6B.1, 8E.6B.2	0	100
6	8.E.6B.1, 8E.6B.2	25	75
7	8.E.6A.4.2	50	50
8	8.E.6A.5	75	25
9	8.E.6A.4.1	75	25
10	8.E.6A.4.1, 8.E.6A.4.2, 8.E.6A.4.3	25	75
11	8.E.6A.2	25	75
12	8.E.6A.2	25	75
13	8.E.6A.1	25	75
14	8.E.6A.3	25	75
15	8.E.6A.3	25	75
16	8.E.6A.1, 8.E.6A.2, 8.E.6A.3	50	50
17	8.E.6A.1, 8.E.6A.2, 8.E.6A.3	50	50
18	8.E.6A.1, 8.E.6A.2, 8.E.6A.3	0	100
19	8.E.6A.1, 8.E.6A.3	25	75
20	8.E.6B.1, 8E.6B.2	25	75
21	8.E.6B.1, 8E.6B.2	50	50
22	8.E.6A.4.2	25	75
23	8.E.6A.4.1, 8.E.6A.4.2	0	100
24	8.E.6A.5	25	75
25	8.E.6A.4.1	25	75
26	8.E.6A.2	25	75
27	8.E.6A.2	50	50
28	8.E.6A.1	75	25

The data shown in Table 4.1 were used to determine what indicators the students should focus on while they were in science class.



Table 4.2

*Questions per Conceptual Understanding and Percentage Mastery for Pre/Posttest*

Questions	Conceptual Understanding	% Mastery Pretest	% Mastery Posttest
1, 2, 3, 5, 6, 7, 20, 21	8.E.6B - Adaptation by natural selection	0	50
8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 22, 23, 24, 25, 26, 27, 28	8.E.6A - Geologic time scale	0	25

As shown in Table 4.2, some of the students did improve from the pretest to the posttest. There was a 50% improvement on their understanding of the indicator on Adaptation by natural selection. Where there was only a 25% increase of understanding of the indicator on the Geologic time scale.

Table 4.3

*Adaptation by Natural Selection Pre/Posttest Percentages of Correct Responses per Question*

<u>Item</u>		<u>Percentage</u>	
<u>Number</u>	<u>Questions</u>	<u>Pretest</u>	<u>Posttest</u>
1	Differences between members of the same species are called?	50	50
2	Which term refers to the process by which individuals that are better adapted to their environment are more likely to survive and reproduce?	50	50
3	Which term refers to a species creating more offspring than can possible survive?	25	50
4	How does natural selection lead to evolution?	50	75
5	Which of these is one of the main ways that a new species forms?	0	75

6	What can happen when a community becomes isolated from the rest of its species for many generations?	25	50
7	Which term describes the pattern in which rapid changes occur in a species for short periods, followed by a long period of little or no change?	50	0
20	Through natural selection, harmful variations gradually accumulate in a species. T or F	25	25
21	When some members of a species become isolate, they are less likely to form a new species. T or F	50	50

Table 4.3 gives the pre/posttest percentages for the questions pertaining to adaptation by natural selection. In this table the data shows which questions were mastered and which questions were not mastered by the students.

Table 4.4

*The Geologic Time Scale Pre/Posttest Percentage of Correct Responses per Question*

<u>Item</u>		<u>Percentage</u>	
<u>Number</u>	<u>Questions</u>	<u>Pretest</u>	<u>Posttest</u>
8	What are fossils?	75	75
9	A fossil formed when minerals replace all or parts of an organism is called?	75	0
10	What has the study of fossils allowed scientists to do?	25	50
11	The relative age of a rock is?	25	25
12	What is the age of an intrusion of igneous rock in relation to the sedimentary rock layers through which it passes?	25	25
13	Originally, the geologic time placed Earth's rocks in order by?	25	50
14	Earth's earliest atmosphere lacked which gas that is necessary for life as we know it to exist today?	25	25
15	Earth's atmosphere, oceans, and continents began to form during the first several hundred million years of?	25	25

16	During the Cambrian Explosion that began the Paleozoic Era, the many new forms of life that evolved?	50	50
17	During the Devonian Period, animals that could live on land began to evolve. These animals still spent part of their lives in the water. What were these animals called?	50	0
18	Late in the Paleozoic Era, the supercontinent Pangaea formed. The climate in the center of Pangaea was probably?	0	75
19	Which answer best describes the climates of Europe and North America during the 1.8 million years of the Quaternary Period?	25	25
22	The theory of punctuated equilibrium proposes that species evolve slowly but steadily? T or F	25	75
23	In most cases, evidence from DNA and protein structure has rejected conclusion about evolutionary relationships based on fossils, embryos, and body structures. T or F	0	25
24	Fossils usually occur in metamorphic rock. T or F	25	100
25	Footprints and trails are examples of trace fossils. T or F	25	50
26	The law of superposition helps geologists determine the absolute age of a rock layer. T or F	25	75
27	Sometimes layers of rock are overturned so much that the youngest rock layer may appear on the bottom, which is the reverse of what is ordinarily expected. T or F	50	75
28	Geologists divide Earth's long history into smaller units that make up the geologic time scale. T or F	75	50

Table 4.4 gives the pre/posttest percentages for the questions pertaining to Geologic time scale. In this table the data shows which questions were mastered and which questions were not mastered by the students.

Table 4.5

*Pre/Posttest Score Results for Each Student Who Took the Pre/Posttest*

<u>Students</u>	<u>Pretest Score</u>	<u>Posttest Score</u>
Liam	39	61
T.J.	39	54
John	32	43
Jay	29	29

In Table 4.5 above and Figure 4.1 below, the data shows the pre/posttest scores for the four students, who were present for both the pretest and the posttest. As the data indicates, there was only one student who did not improve from pretest to posttest. The other three students improved an average of 16 points from pretest to posttest. Only one student scored what is a passing grade of 61 on the posttest. The other scores are not a passing score, even though there was one passing score, all of these students would be eligible to retake the posttest after completing additional assignments to lead to mastery of the material or after coming to tutoring sessions on this material. As can see in Table 4.2, the students increased by 50% from pretest to posttest on their mastery of the standards associated with adaptation by natural selection. The standards associated with geologic time scale were only mastered at 25% from pretest to posttest, possibly indicating that more instruction or different instruction is needed to increase the mastery of this standard. The difference in mastery between the adaptation by natural selection and the geologic time scale needs to be investigated further to determine what could have been the cause. A possible cause of the higher mastery of the standards associated with adaptation by natural selection, are that these standards are covered in part during grades

3-6, so the students have been exposed to this material before the eighth grade. The standards covering the geologic time scale are not covered during the earlier grades in science, therefore, eighth grade is the first-time students are exposed to this material. There is no background knowledge for the students to build upon.

I believe the results would have been better if the testing would have been done at a different time in the school year. The posttest was given at the end of the school year after the students had finished state testing. The students had a difficult time focusing while taking the posttest, they wanted to talk, move around, and not answer the questions.

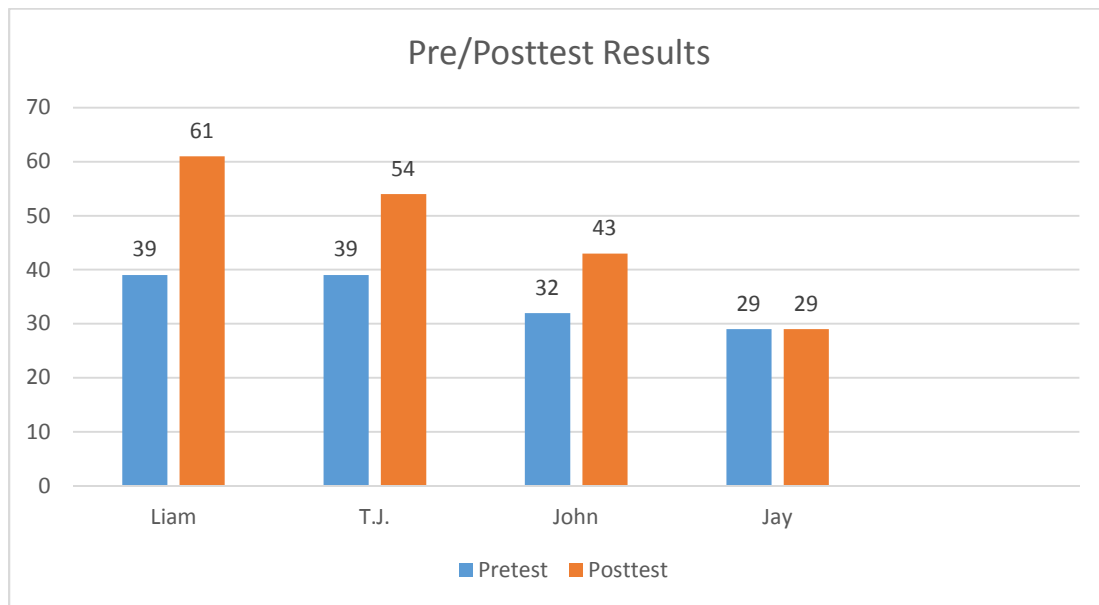


Figure 4.1. Graph of Pre/Posttest Results.

### Group Interview/Discussions

A group interview was conducted at the beginning and again at the end of the program, in order to determine if there were any changes in their perception or feelings about the tutoring/mentoring program. The questions asked during the group interview were the following:

1. What are your feelings about tutoring?

2. What should tutoring look like?
3. Do you feel funny or embarrassed by coming to my room for tutoring/mentoring?
4. What do your parents think about this tutoring/mentoring program?
5. Do you know what self-regulated learning strategies are?
6. Would you recommend any of the strategies to your friends?
7. Do you see a difference in your academics and decision making since you started the tutoring program?

After asking the questions during the group interview, we talked about how things were going this year and how they were different from last year. When discussing the answers to the questions, they gave very short answers even when I asked follow-up questions to try to get them to elaborate on their answers.

The overall themes discovered from the interview at the beginning of the program were that my Black male students liked coming to my room in the mornings and the tutoring program, the students felt their parents were glad they were in the program, and they did not want anyone else to join our group. When we discussed their feelings about the tutoring program and coming to my room in the mornings, they were all positive. Jay, who entered school during the second quarter of school, had a learning disability and lived with his father. He said, “It is straight,” which means good. I could not get him to expand on why it was straight. T.J., who lived with his grandmother because his father was incarcerated, said that it helps him to get his homework done when he did not finish it at home. He would use the time after our tutoring session to complete his homework and I or another student would help him if he had any questions. John, who lived with his

mother and never spoke of a father, said, “It is good,” which was all he would say. I would have liked them to give me reasons for the answers they gave, but they did not expand on their answers, even when asked follow-up questions.

The students did not feel embarrassed about coming to my room for the tutoring/mentoring and would rather be in my room than in the gym or cafeteria where they would be until school started. T.J. said, “We don’t do anything in the cafeteria but look stupid,” so he preferred to be in my room in the mornings. Jay also said, “I would rather be in here than in the cafeteria.” The others had similar things to say about being in my room. I would on occasion have other Black male students who were not in the program try to come to my room in the mornings and were upset when I had to turn them away.

When we discussed how their parents/guardians felt about the program, most of the answers were positive. T.J. made the statement, “My grandma doesn’t know anything about it,” which gave me reason for concern. Jay asked T.J. how he got his paper signed to come and T.J. said, “I just told her to sign the paper and she did.” I was concerned that she was not aware of him coming to the tutoring/mentoring program, even though, I made sure to contact all the parents/guardians before the tutoring program began, if I did not speak with them directly, I left a detailed message with a call back number. Jay told me, “My dad like it; he thinks this is why I am doing good.” He also told another one of the boys, that if he had known this year was going to be like this, he would have come to school sooner. Jay missed the entire first quarter of school, he was not enrolled in any school and then came to my school for second quarter and was very successful. John said that his mom liked it as well. I spoke with Zane’s mom, who made Zane repeat the

seventh grade due to poor grades and behavior issues, about the program during an IEP meeting, she was grateful that he was in the program and thought it was making a difference for him. She liked that he was getting the extra help and positive attention that he needed at school.

When I asked the questions about recommending any of the strategies to their friends, they were quick to answer no. Jay answered, “No, because we don’t want a bunch of people coming in our group.” John said, “Yes, if they don’t have to come.” It was very clear that the boys wanted the tutoring/mentoring group to stay the same, they did not welcome the idea of others coming in. As mentioned above about other Black male students coming to my room in the mornings and turning them away, the boys would tell them they were not welcome and they could not be a part of our group. They would even shut the door in the other boys’ faces. They were very protective of the group we had developed.

After answering the questions above, we discussed how they were doing in their other classes and about a recent science test. T.J. said it was hard, and he did not remember any of it because he was bored. He also stated that when he read the questions and did not know the answers he wanted to quit. We discussed some strategies on how to build up his test confidence, one way was by looking for questions he did know the answers to and answer those first. Then he could go back to the rest of the test questions with more confidence. I also told T.J. how the other teachers in the eighth grade always bragged on him and how focused he was in class. I asked him what had changed from last year, because he was not very successful and he left due to behavior problems half way



through his seventh-grade year. He was not sure what had changed, but he said, the teachers this year gave him more help and he got more chances.

In order to get the focus off of himself, T.J. told me that Jay was sleeping through his English class. I asked Jay about his grade in English; he said, "I am passing." I said to him that he was more capable than just passing and he needed to stay awake. Jay said, "I am not trying to be the smartest person in the class. I'll be put in the advanced classes and I won't be with my friends." I suggested to him that maybe he could just make a B and some As and he could still be with his friends and work to his potential.

During the tutoring/mentoring program, I was able to get to know my boys and built a trusting relationship with them. We talked about how things were going for a few minutes each day before tutoring. I was able to determine if they were having any problems in their classes and if I needed to dig deeper for any of them.

During the interview after the program was complete, I asked the boys what they had learned during the program. Zane, who had a Behavior Intervention Plan (BIP) and was held back in the seventh grade, said, he had not learned anything, but he said that I had helped him to become a better man. I was taken back by this statement, so much so that I did not ask him to tell me how. This was a missed opportunity on my part to find out what Zane actually meant by his statement. I saw a change in Zane. He would come to me if he was having a bad day. When he was having trouble on a field trip, I was able to talk to him and deescalate the situation. He was more focused on doing well in class and would address any students who were being disrespectful to me. Zane came to my room when he was in trouble with another teacher to remove himself from the situation. He was still given the punishment by administration; however, he was calmer after

coming to my room. Liam, who lived with both parents who were very supportive of the program, said, “I learned some self-regulated learning stuff.” Liam said his intention was focused on setting goals for the upcoming school year. This was the only strategy he discussed from the self-regulated learning strategies that were taught during the tutoring sessions. Several of them said that I needed to reward the students who gave the right answers to my questions when we were going over the self-regulated learning strategies. This reward would help them want to get it right. I asked them if they would use any of the self-regulated learning strategies next year, Liam, T.J., and John said they were going to set goals at the beginning of the school year.

### **Interpretation of Results of the Study**

The results of the study were not what I was expecting. The improvements from the pretest to posttest were smaller than I would have anticipated. Two of the four boys improve their scores by 22 points, another only increased his score by four points, and the final student’s score stayed the same. I believe that part of the reason for the minimal improvement from pretest to posttest was due to being so close to the end of the school year. The boys did not utilize the self-regulated learning strategies they were taught like I would have liked them to. The composition books they were given to write down what they would do at home were blank. The only strategy they seemed to remember from the tutoring program was goal setting. The positive from the self-regulated learning was that they were going to start setting goals for themselves.

There were some positive results that came from my tutoring/mentoring program, one was the community that was built between these boys and myself. The boys would tell on each other if they were not doing their best in another class. They were holding

each other accountable for their actions and took ownership in the high expectations that were set in this community for their work in their core classes.

### **Conclusion**

The goal of this action research study was to determine if teaching self-regulated learning strategies through a tutoring and mentoring program would affect the academic achievement of my Black male students. The self-regulated tutoring program results were inconclusive. The increase in score from the pretest to the posttest cannot be attributed only to the tutoring program. The students were given the pretest before the indicators were taught in science class, so there could be different reasons for the improvement of my students on the posttest other than the tutoring of the self-regulated tutoring strategies. The self-regulated learning strategies were taught to be used in science class, however, I encouraged them to use them in all of their classes.

The mentoring part of the program had surprising results. The boys in the program developed a community of which they were protective and did not want anyone else to join. This part of the program gave them a place to go in the mornings for the tutoring/mentoring, where they could be themselves. In the interview, they said they would rather be in my room than in the cafeteria. During the time when I would talk with my boys about how things were going in other classes, they would use this time to let me know who was not doing their best in the other classes. They knew what the expectations were for their performance in all of their classes. This was evident when Jay said he could not make all As in English, because they would put him in advanced classes and he would not be able to be with his friends. I was put back by this comment and reiterated how important it was to do his best. The boys trusted me with information about what

was going on in the neighborhood, what was brewing at school, and information about fights that had happened. We built a community of mutual trust and accountability in the classroom.

The results of this study were not what I had expected. I do believe that it is worth doing again and beginning earlier in the school year. I also believe that it should be started in the sixth grade to build a relationship with students that will last throughout their middle school years. Many of the Black male students are disconnected with school when they get to middle school in the sixth grade and this mostly increases as they go onto high school. With a program like this in place, where they feel valued and welcome, they may start to view school in a different light.

## CHAPTER FIVE: DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of Chapter Five of this action research is to discuss what was revealed by this study and what steps need to be taken next. The purpose of Chapter Five is to summarize the study and determine the implications of this study on the impact of tutoring/mentoring of self-regulated learning strategies on Black males. Another purpose is to make recommendations for future studies in order to further the research on the opportunity gap that is still present for Black males in education. The identified Problem of Practice is the opportunity gap for Blacks males compared to their White counterparts at Northwoods Middle School in central South Carolina. The identified problem evolved from the need to try to close the opportunity gap of Black males, specifically in eighth-grade science by tutoring and mentoring these students in self-regulated learning strategies. To address this problem of practice, I looked at the impact on academic achievement and behavior for Black males involved in the tutoring and mentoring program teaching self-regulated learning strategies at Northwoods Middle School.

In my school, there were a total of 20 Black males in the entire eighth-grade class, and of these 20 eighth-graders, only 10 of them were “Not Met” on the SCPASS test for science. Out of the 10 students “Not Met” in science, I only taught science to four of these students. I invited all 10 of the “Not Met” students to join in the tutoring/mentoring program, even though they were not all my students. Only six students’ parents would

give permission for their students to participate in this study. Three of the students were taught science by me and three of the students were taught by my teaching partner.

### **Overview/Summary of the Study**

This study had a two-part focus: the tutoring program and the mentoring program. During the tutoring program, the students were taught self-regulated learning strategies. The students were introduced to the learning strategies during the tutoring sessions and asked to try to use them in their classes. The students were not very receptive to the self-regulated learning strategies. The first strategy we worked on was self-evaluation, they did not want to record their study habits or how they spent their time on their work. They did not mind setting their goals for their class, but what they wrote down were very simple goals. For example, one goal stated, “I want to pass my science test” or “I do not want to fail next year.” When I asked the boys to look at their tests they had taken and think about how they prepared for the test to see if the strategies they chose worked or not, they would tell me they did not study.

The mentoring portion of the program was more successful than the tutoring part of the program. The boys and I formed a community of which they were very protective. The boys did not want anyone else to join our special group, as one of them told another student. They would tell others they were not welcome. During one of the sessions, my assistant principal came in and said, “It really looks like you are working in here,” because the boys were eating McDonald’s for breakfast. The boys said, “She was telling us what we are going to do next week and what we have to do today.” I did not have to say anything; they were not going to let him say anything bad about our community. These boys trusted me to take care of them, and I trusted them to take care of me.

Another example of this trust and bond was exemplified with Zane. Zane, who had a BIP in place, was having a bad day and left another teacher's classroom and came to mine. He was very upset, using profanity, and would not leave my room. I had to remove my other students from the classroom, and the assistant principal and I talked him down until he was calm enough to go to the office. He still received a consequence for his actions; however, it could have been much worse if he was not calmed down. This same student was on a field trip to tour the high school they would be going to, when our behavior interventionist asked him to speed up and put his hands on him. Zane did not take this well and called him a "fag" and used some other profane language about putting his hands on him. The behavior interventionist, who was a Black male, was about to get the school resource officer to come and take him away. I went up to Zane put my arm around him and we went on to complete the tour without another incident. He did not even flinch when I put my hands on him and went with me. As I was walking off with him, I was telling him he could not act that way towards an adult. When he got back to school, he had to answer for his behavior, but it could have been a lot worse. I was truly afraid he was going to hit the behavior interventionist, so I had to remove him from that situation.

Another example of the bonds that were formed between the boys and myself could be seen during my duty. I was on duty by the cafeteria and another teacher came from the cafeteria and asked, "Can you go and talk to your boy?" She said she had asked him to sit down about five times and he was still up walking around. When I walked in, I put my arm around him and asked him how he was doing, then I asked him if he could please sit down for me and stay in his seat. He sat down and did not get up until it was

time to leave the cafeteria. The relationship that was built between my boys and me was very apparent to the other teachers in the school.

In our community, there was no fear of punishment, judgement, or unfair treatment. The boys trusted me; they would tell me the gossip of who was wanting to fight who, who the new couples were, and what was going on with my former students. They would show me the fights that were caught on video. It was very hard to watch my students in the videos getting hurt, but I would watch and let them know how it hurt me. There had been a fight in the boy's restroom and no one could figure out who it was, then the boys showed me the video. I wanted to keep their trust, so I made sure the administration knew who it was without letting them know where I found out the information.

What I learned from my action research was that the students might not be receptive to the tutoring program, but they were very receptive to the extra time and special treatment that they received during the mentoring times. I also noticed that the boys I taught in the group completed a lot more work for me than their other teachers. The relationships that were built with these boys extended from this group into my classroom, and they were not only protective of me in our morning sessions, but in the classroom and outside of the classroom. An example of their protectiveness in the classroom could be seen when a student was being disrespectful to me during class. Zane said, "Don't be disrespectful to my teacher." The other student was very surprised at Zane and was not disrespectful to me again. The boys influence on other students in my classroom was powerful.



The tutoring/mentoring program was a good idea, but I believe the first part of the program should be focused on the mentoring phase, developing relationships, and getting to know the students. The relationships that are built should be used to determine what type of tutoring or learning program would be best to use for each student. The strategies should be tailored to each student, and if they are the right strategy for them, they might use them more effectively. I taught them to use self-regulated learning strategies, and they resisted using them, but if I had catered directly to their needs, it may have been more successful. One part of the mentoring program should be to determine their learning styles and research what culturally relevant practices would be best for each of them.

Another lesson I learned was to treat each boy as an individual. They were all different, and what might work for one student might not work for another. Jay usually talked about what was going on with him; however, one day he came into school and did not come to tutoring, which was not like him. I asked him what was going on and he would not talk to me. I stopped him, pulled him to the side and asked again. He still did not respond, so I told him that if he needed anything or he wanted to talk about it later to please let me know. When he came to my class later that morning for science class, he was still shut down. He sat at my podium at the front of the classroom and put his head down. I gave the class their assignment and sat his work beside him on the podium and whispered to him that his work was there and he needed to get started. He did not move and stayed with his head down. I just left him alone; he had never acted like that and I could tell there was something going on he was not willing to talk about. When class was over and he left, I picked up his work and put it in the basket. The next day he came in and was better. I gave him his work, and he looked at me and asked why he had so much

work to do. I asked him if he remembered yesterday when he was not in a good place and I left him alone, and he said, “Yes.” When I told him he still had to get the work done from yesterday, he looked at me and got busy with his work. Without the relationship I had built with him, I might have badgered him with the work and ignored the unusual behavior. Because this was not his usual behavior, it made it easier to justify his not working. After writing this down, it was saddening to me that I might not have reacted this way to all my students. We all have our off days occasionally, and being more aware of who the student is before this happens will help in the future when those students have those days. I know that completing this research made me more aware of my shortcomings and changed my perspective on my teaching. All students need teachers to see them as people who need their help to get through this part of their life with understanding and patience. Especially eighth-grade students are between becoming a young adult and trying to prepare to leave their childhood behind them. They need the extra time and extra attention to make sure they feel welcomed and valued.

This study would have been better if it was conducted at the beginning of the school year when I would have had more time to get to know my students to develop the type of tutoring program they needed individually. Then, the students would have had a chance to develop these skills that were designed for them to use throughout the school year. The students could use their strategies to analyze their tests and determine what they needed to study before the posttest was given. The students might have done better on their posttest if it had been given before state testing began, so they would not have been inundated with testing.

## Suggestions for Future Research

This program should begin in the sixth grade and continue throughout the three years of middle school. By the time the students go to high school, the self-regulated learning strategies or whatever strategy is best for them to use, will be ingrained in their educational process. The amount of time that is spent each day teaching the self-regulated strategies or other strategies that are found to be better for the student's individual needs should be longer. To have enough time to teach the strategies and have the students practice the strategies before being asked to put them to use will take at least 45 minutes. This can be accomplished during the homeroom time for the students involved in the program.

These learning strategies can be taught once or twice a week, allowing the students time to use the strategies. During each additional session, they can come back and discuss how they used them and if they worked for them. This gives time for the students to ask questions and determine if they need to update their strategies or continue to use the ones they chose. If the tutoring program began in the sixth grade, that would give the students three years to use the strategies before going to high school, which would benefit them greatly. In a study by Andrzejewski et al. (2016), they found that the self-regulated strategy intervention appeared to benefit Minority students more than their Majority peers. However, it is best to find the culturally relevant practices for each individual student to maximize the benefit to them, because self-regulated learning strategies may not be the best strategies for all students.

Instead of giving the students a composition notebook to write down the strategies they used and how long they spent studying at home, I would create a form they just have

to fill in with the information. There would be a form for class and a different form for them to fill out each day. The form for class would be set up in columns and rows, so they could fill it in very quickly each day with important information. The questions would be about the lesson of the day, how much time were they on task, what things distracted them, the purpose of the lesson, what did you learn and confidence level with the lesson. The form for home would have questions such as, “did you do any work at home”, “what was worked on”, “strategies used”, “how long you worked”, and “confidence level with the material.” The forms would be easier for the students to fill in and it would be easier to collect data using these types of forms. The students would be given these forms in a folder. The students would also be able to go back and look at the time they spent on specific lessons in class and make a quick comparison between the time spent and how well they did on the assessments for that lesson.

The mentoring part of the program would benefit the students more if it was over their entire middle school years instead of just one year. This would give me more time to get to know the students and find out what their special needs might be. This would give me the opportunity to get to know the parents of these students as well. These students would have someone to talk to about what was going on with them at school. They would also have a support system within the school. According to Ferguson (2018),

mentoring relationships between adolescents and adults are an important source of social capital that facilitates young people’s academic and social development.

Studies show that close relationships with teachers especially benefit socioeconomically disadvantaged adolescents. (p. 211)

The community that could be built with the students over three years would be more beneficial to them and myself than just one year. The more time these students are focused on and helped to feel like they are part of a supportive community, the better the chance of lessening the opportunity gap for these students.

The number of students needs to be limited to between six to ten. The smaller group gives an opportunity to get to know each of the students on an individual level. If there were more students in the group, the instructor/mentor would not have the time for each on them as an individual. Another important part for the mentoring part of the program is to get some training on the culture of the students in the program. I believe this is a very important part of the program, in order to get to know the students on a personal level and be informed on their cultural and social differences.

### **Action Plan**

The action plan from this research is to create a tutoring/mentoring program to begin in the sixth grade with the students who are not being successful after the first quarter. The mentoring program should be developed first to get to know the students better. The program should begin in the sixth grade so the teacher will have the maximum amount of time with the students. During the mentoring sessions, the time should be used to build positive relationships at school that some students might not have had in the past. Part of the program should be to ask the students and find out what they believe they need from the mentor and school, because what we think they need may not be true. It is important that they know this program is all about them, and we are there to help them and be an advocate if needed. The program must be flexible and reevaluated regularly to keep the students involved, feeling welcome, and valued. The tutoring/mentoring

program will focus on teaching the students learning strategies best suited for them and building a safe and positive community with in the school. During this program the students' progress will be monitored on a regular basis, by group discussions, individual discussions, teacher input, and grades, and by reviewing discipline records if needed. The students in the program will continue in the program for all three years they are in middle school and therefore their progress can be tracked over a longer period to determine the success of this program. The data from all three years will be used to continue to develop the program and to incorporate any changes that need to be made to the current program to continue to help those students in need.

### **Conclusion**

This tutoring/mentoring program did not give me the results that I would have expected. The results of the tutoring program were not proven to be effective in the increase in the students' academic achievement in science. The test scores from the pre-test to the post-test scores did not prove mastery of the material on Earth's history and the diversity of life standards. The pre/posttest scores data did not show the important positive developments this study demonstrated in the relationships that were formed between the students and myself.

However, the results of the mentoring part of the program were more than I could have expected. The boys and myself built a community together that was beneficial to all of us. The boys did not want anyone interfering or joining our original group. They were very protective of our space and our time together. The boys understood that there was an expectation of excellence in their work in all of their classes, which led them to report when others were not doing their best in other classes. This was due to the high

expectations that were expected of each one of them as part of this group. They were a part of Mrs. Lott's "special group" as one of them called it and they were expected to do their best in my class and in their other classes.

The relationship that was built with my boys has had lasting effects. I have gotten emails from some of them since they have started high school, and they tell me how much they miss me and my class. I have had some of them come back to the middle school and visit with me. One of them asked if he could come and job shadow me at school. They made this past year of school one to remember and cherish for me. I want to continue this program, so that all the next years will have this same type of impact or even more of an impact on my Black male students.

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## APPENDIX A

### EARTH'S HISTORY AND DIVERSITY OF LIFE PRE/POSTTEST

#### Multiple Choice

Identify the choice that best completes the statement or answers the question.

- \_\_\_\_\_ 1. Differences between members of the same species are called
- predators.
  - selections.
  - traits.
  - variations.
- \_\_\_\_\_ 2. Which term refers to the process by which individuals that are better adapted to their environment are more likely to survive and reproduce?
- natural selection
  - Overproduction
  - Competition
  - Variation
- \_\_\_\_\_ 3. Which term refers to a species creating more offspring than can possibly survive?
- natural selection
  - Overproduction
  - Evolution
  - Variation
- \_\_\_\_\_ 4. How does natural selection lead to evolution?
- Stronger offspring kill weaker members of the species.
  - Helpful variations accumulate among surviving members of the species.
  - Overproduction provides food for stronger members of the species.
  - Environmental changes favor weaker members of the species.
- \_\_\_\_\_ 5. Which of these is one of the main ways that a new species forms?
- Cross-breeding occurs within the species.
  - A group is separated from the rest of the species.
  - Competition occurs between members of the species.
  - Mutations occur in the alleles of members of the species.
- \_\_\_\_\_ 6. What can happen when a community becomes isolated from the rest of its species for many generations?
- Competition between individuals will decrease.
  - The community will grow more slowly.
  - A new species can form.
  - There would be no effect on the community.

- \_\_\_\_\_ 7. Which term describes the pattern in which rapid changes occur in a species for short periods, followed by a long period of little or no change?
- artificial selection
  - Gradualism
  - punctuated equilibrium
  - Extinction
- \_\_\_\_\_ 8. What are fossils?
- molds and casts of organisms that live today
  - drawings of ancient animals and other organisms
  - footprints or burrows of small animals that live today
  - the preserved remains or traces of organisms that lived in the past
- \_\_\_\_\_ 9. A fossil formed when minerals replace all or part of an organism is called a
- mold.
  - petrified fossil.
  - cast.
  - trace fossil.
- \_\_\_\_\_ 10. What has the study of fossils allowed scientists to do?
- describe past environments and the history of life
  - study present ocean temperatures at different depths
  - analyze the chemical composition of sedimentary rocks and minerals
  - predict which organisms will become extinct in the future
- \_\_\_\_\_ 11. The relative age of a rock is
- its age compared with the ages of other rocks.
  - less than the age of the fossils the rock contains.
  - the number of years since the rock formed.
  - its age based on how much carbon-14 the rock contains.
- \_\_\_\_\_ 12. What is the age of an intrusion of igneous rock in relation to the sedimentary rock layers through which it passes?
- sometimes younger, sometimes older
  - always older
  - the same age as the other rock layers
  - always younger
- \_\_\_\_\_ 13. Originally, the geologic time scale placed Earth's rocks in order by
- radioactive dates.
  - relative age.
  - composition.
  - decades and centuries.
- \_\_\_\_\_ 14. Earth's earliest atmosphere lacked which gas that is necessary for life as we know it to exist today?
- Nitrogen
  - carbon dioxide
  - Argon
  - Oxygen

- \_\_\_\_\_ 15. Earth's atmosphere, oceans, and continents began to form during the first several hundred million years of
- Precambrian Time.
  - the Paleozoic Era.
  - the Mesozoic Era.
  - the Cenozoic Era.
- \_\_\_\_\_ 16. During the Cambrian Explosion that began the Paleozoic Era, the many new forms of life that evolved
- lived on land.
  - were invertebrates that lived in the sea.
  - were vertebrates covered with scales or fur.
  - were single-celled.
- \_\_\_\_\_ 17. During the Devonian Period, animals that could live on land began to evolve. These animals still spent part of their lives in the water. What were these animals called?
- Trilobites
  - Reptiles
  - Amphibians
  - Dinosaurs
- \_\_\_\_\_ 18. Late in the Paleozoic Era, the supercontinent Pangaea formed. The climate in the center of Pangaea was probably a(an)
- extremely cold, polar climate.
  - hot, dry desert climate.
  - wet tropical climate.
  - warm, mild climate.
- \_\_\_\_\_ 19. Which answer best describes the climates of Europe and North America during the 1.8 million years of the Quaternary Period?
- hot and dry climates
  - cool and rainy periods followed by droughts
  - warm and mild climates
  - a series of ice ages followed by periods when the glaciers melted

**Modified True/False**

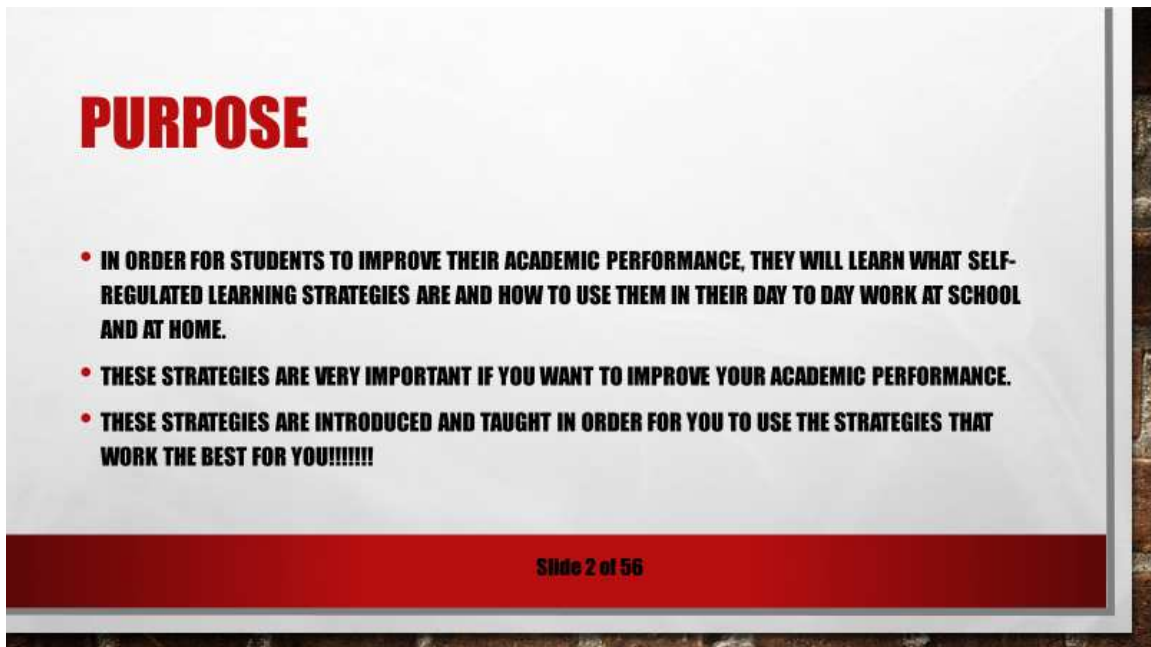
*Indicate whether the statement is true or false.*

- \_\_\_\_\_ 20. Through natural selection, harmful variations gradually accumulate in a species.
- \_\_\_\_\_ 21. When some members of a species become isolated, they are less likely to form a new species.
- \_\_\_\_\_ 22. The theory of punctuated equilibrium proposes that species evolve slowly but steadily.
- \_\_\_\_\_ 23. In most cases, evidence from DNA and protein structure has rejected conclusions about evolutionary relationships based on fossils, embryos, and body structure.

- \_\_\_ 24. Fossils usually occur in metamorphic rock.
- \_\_\_ 25. Footprints and trails are examples of trace fossils.
- \_\_\_ 26. The law of superposition helps geologists determine the absolute age of a rock layer.
- \_\_\_ 27. Sometimes layers of rock are overturned so much that the youngest rock layer may appear on the bottom, which is the reverse of what is ordinarily expected.
- \_\_\_ 28. Geologists divide Earth's long history into smaller units that make up the geologic time scale.

## APPENDIX B

### POWER POINT PRESENTATION SELF-REGULATED LEARNING STRATEGIES



# WHAT WILL YOU LEARN?

- **YOU WILL LEARN**
  - **WHAT SELF-REGULATED LEARNING STRATEGIES ARE.**
  - **WHY THEY ARE IMPORTANT.**
  - **HOW THEY CAN BE USED.**
  - **HOW THEY WILL HELP**



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# COMPLETING THE UNIT

- **COMPLETE THIS UNIT AT YOUR OWN PACE!**
  - **IF COMPLETED IN ONE SITTING, IT COULD BE COMPLETED IN ABOUT 25 MINUTES.**
  - **THE PRESENTATION CAN BE STOPPED AND RESTARTED AT ANYTIME.**
- **SELF-REGULATED LEARNING STRATEGIES WILL BE INTRODUCED**
  - **EACH STEP IN THE PROCESS WILL BE WORKED THROUGH AND PRACTICED**

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# SELF-REGULATED LEARNING STRATEGIES

- **THERE ARE FOUR CYCLES IN THIS PROCESS THAT GO TOGETHER**
  - **SELF-EVALUATION AND MONITORING**
  - **GOAL SETTING AND STRATEGIC PLANNING**
  - **STRATEGY-IMPLEMENTATION MONITORING**
  - **STRATEGIC-OUTCOME MONITORING**



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# SELF-EVALUATION & MONITORING

- **STUDENTS RECORD THEIR STUDY HABITS**
  - **AMOUNT OF TIME STUDIED**
  - **INFORMATION STUDIED**
- **USE THE RECORDS TO SEE IF ACADEMIC PERFORMANCE CHANGES**
  - **WAS THE AMOUNT OF TIME STUDIED ENOUGH?**
  - **HOW DID I DO?**

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# GOAL SETTING & STRATEGIC PLANNING

- **WHAT ARE YOUR GOALS FOR ACADEMIC PERFORMANCE?**
  - LOOK AT HOW MUCH TIME YOU SPENT STUDYING
  - LOOK AT THE SCORES WHEN STUDIED AND WHEN NO STUDYING TOOK PLACE
  - CREATE YOUR GOALS FOR LEARNING BASED ON THE INFORMATION
- **PLAN STRATEGIES FOR MEETING YOUR GOALS**
  - WHAT IS IT GOING TO TAKE TO MEET THE GOALS?



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# STRATEGY-IMPLEMENTATION MONITORING

- **DID THE PLAN WORK TO MEET THE GOALS?**
  - IF NO
    - WHY?
    - DO THE STRATEGIES NEED TO BE CHANGED?
    - WERE THE STRATEGIES USED EFFECTIVELY?
  - IF YES
    - KEEP THESE STRATEGIES AND USE THEM



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# STRATEGIC-OUTCOME MONITORING

- CONTINUE USING THE STRATEGIES THAT WORK
- TRY NEW STRATEGIES
  - IF THEY WORK KEEP THEM ALSO
  - IF THEY DON'T WORK THEN TRY ANOTHER ONE
- TRY DIFFERENT STRATEGIES TO INCREASE YOUR STUDY OPTIONS



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# MNEMONIC DEVICE

- CREATE A MNEMONIC DEVICE TO HELP YOU REMEMBER THE PROCESSES IN THE CYCLE OF SELF-REGULATED LEARNING STRATEGIES
  - GIVE ME AN "S-E"
  - GIVE ME A "G"
  - GIVE ME A "S-I"
  - GIVE ME A "S-O"
- MAKE IT SOMETHING YOU WILL REMEMBER
  - WRITE IT DOWN FOR YOURSELF

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# SELF-EVALUATION & MONITORING ARE PART OF THE CYCLIC PROCESS OF SELF-REGULATED LEARNING STRATEGIES?

• TRUE



• FALSE

[Click the correct answer.](#)

**You are correct!! Great Job!!**



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## SELF-REGULATED LEARNING STRATEGIES

- CYCLE WITH FOUR PROCESSES THAT GO TOGETHER
  - SELF-EVALUATION AND MONITORING
  - GOAL SETTING AND STRATEGIC PLANNING
  - STRATEGY-IMPLEMENTATION MONITORING
  - STRATEGIC-OUTCOME MONITORING

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**GOAL SETTING IS NOT IMPORTANT WHEN TRYING TO USE SELF-REGULATED LEARNING STRATEGIES.**

• **TRUE**



• **FALSE**

[Click the correct answer.](#)

## GOAL SETTING & STRATEGIC PLANNING

- **WHAT ARE YOUR GOALS FOR ACADEMIC PERFORMANCE?**
  - LOOK AT HOW MUCH TIME YOU SPENT STUDYING
  - LOOK AT THE SCORES WHEN STUDIED AND WHEN NO STUDYING TOOK PLACE
  - CREATE YOUR GOALS FOR LEARNING BASED ON THE INFORMATION
- **PLAN STRATEGIES FOR MEETING YOUR GOALS**
  - WHAT IS IT GOING TO TAKE TO MEET THE GOALS?
- **DO I NEED TO CHANGE MY GOALS?**
  - IF GOALS ARE MET SET HIGHER GOALS FOR THE NEXT TIME

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## RECORDING (SELF-EVALUATION & MONITORING)

- **RECORD ALL OF THE THINGS YOU DO WHEN YOU STUDY**
  - WHEN DO YOU STUDY?
  - HOW DO YOU STUDY?
  - HOW LONG DO YOU STUDY?
  - DO YOU STUDY AT ALL?
  - WHAT DO YOU STUDY
- **GET A NOTEBOOK OR A COMPOSITION BOOK TO RECORD YOUR STUDY HABITS**
- **MAKE SURE TO INCLUDE THE AMOUNT OF TIME YOU STUDY**
- **LOOK OVER YOUR STUDY HABITS**

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## HOW WOULD YOU MONITOR YOUR USE OF SELF-REGULATED STRATEGIES?

- a. ANALYZE LEARNING TASKS
- b. RECORD & OBSERVE PERFORMANCE
- c. ASSIMILATE NEW STRATEGIES
- d. NONE OF THE ABOVE

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Click the correct answer.

## LEARNERS CAN USE THE CYCLIC PROCESS OF SELF-REGULATED LEARNING STRATEGIES TO IMPROVE THEIR LEARNING?

• TRUE



• FALSE

Click the correct answer.



**Self-regulated learning is a cyclic process that helps students to improve their learning!!**

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## **SETTING GOALS**

- **WHAT DO YOU WANT TO HAPPEN?**
  - **IMPROVE SCORE ON TEST**
  - **IMPROVE SCORE ON QUIZ**
  - **IMPROVE SCORE IN CLASS**
- **USE THE SELF-REGULATED STRATEGIES TO HELP SET YOUR GOALS**
  - **HOW LONG DID YOU STUDY AND WHAT WAS YOUR SCORE?**
  - **WHAT DO YOU NEED TO DO DIFFERENTLY NEXT TIME IF THE SCORE DID NOT MEET YOUR GOAL?**
- **EXAMPLE: MY GOAL IS TO INCREASE MY SCORE ON THE NEXT TEST BY 10 POINTS.**

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## MONITORING SHOULD BE COMPLETED BEFORE GOAL SETTING?

• TRUE

TRUE

• FALSE

FALSE

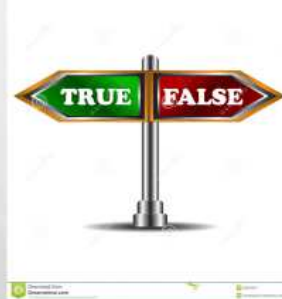
Click the correct answer.

**When you are setting your goals they are based on the information you gained while monitoring your study habits.**

[Click here to return to current slide.](#)

## GOALS CAN BE CHANGED DURING THE SELF-REGULATED LEARNING PROCESS?

• TRUE



• FALSE

[Click the correct answer.](#)

**Your goals can change based on your monitoring and based on your analysis of your learning.**

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## SCENARIO # 1

- **THE STUDENT RECORDED THEIR STUDY TIME AND HABITS FOR THE WEEK BEFORE THEIR TEST**
  - **SELF-EVALUATION AND MONITORING**
- **THE STUDENT SET THE GOAL TO IMPROVE HIS SCORE BY 5 POINTS**
  - **THE GOAL WAS NOT REACHED**
- **WHAT SHOULD THE STUDENT DO NOW?**
  - **LOOK BACK AT RECORD KEEPING TO SEE WHAT STRATEGIES WERE USED BECAUSE THEY WERE NOT EFFECTIVE**
  - **CAN YOU THINK OF ANYTHING ELSE THAT CAN BE DONE?**

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## SCENARIO # 2

- **STUDENT RECORDS STUDY HABITS AND TIME**
- **STUDENT SETS GOAL**
  - **IMPROVE SCORE ON NEXT QUIZ BY 10 POINTS**
- **STUDENT REACHES GOAL**
- **STUDENT CONTINUES TO USE THESE STRATEGIES AND MONITOR EFFECTIVENESS**
- **STUDENT SETS ANOTHER GOAL FOR THE NEXT TEST**

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## SHOULD STUDENTS SET REGULAR STUDY PERIODS TO USE STRATEGIES?

• **YES**



• **NO**

[Click the correct answer.](#)

**When you are using your strategies  
you should set regular study periods to  
help yourself.**

[Click here to return to current  
slide.](#)

## **STUDENTS SHOULD NOT TRACK THEIR PATTERNS OF EFFECTIVENESS?**

• **TRUE**



• **FALSE**

**Click the correct answer.**

**You should record and track the effectiveness of the strategies you are using to decide if you want to change strategies or continue with them if they are successful.**

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# MONITORING EFFECTIVENESS

- **STUDENT RECORDS THEIR STUDY HABITS AND TIMES**
  - **MONDAY**
    - MADE FLASH CARDS
    - WENT THROUGH FLASH CARDS 3 TIMES
    - SPENT 30 MINUTES PREPARING AND GOING THROUGH CARDS
  - **TUESDAY**
    - WENT THROUGH FLASH CARDS 3 TIMES
    - SPENT ABOUT 10 MINUTES
  - **WEDNESDAY**
    - SPENT ABOUT 10 MINUTES ON FLASH CARDS
  - **THURSDAY**
    - TOOK TEST AND MADE AN 85

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# WHO WAS EFFECTIVE?

## STUDENT 1

- RECORDED STUDY TIME
- RECORDED STRATEGIES USED
- SET GOALS
  - INCREASE BY 10 POINTS
- IMPROVED BY 15 POINTS

## STUDENT 2

- RECORDED SOME STUDY TIMES
- DID NOT RECORD THEIR STRATEGIES USED
- SET GOALS
  - INCREASE BY 25 POINTS
- IMPROVED BY 5 POINTS

Which student do you want to be?

## SHOULD NEW GOALS BE IMPLEMENTED WHEN THEY ARE FOUND TO BE EFFECTIVE?

• YES



• NO

[Click the correct answer.](#)

**When goals are found to be ineffective,  
you should look back at your monitoring  
to determine what your new goals may  
need to be.**

[Click here to return to current  
slide.](#)



## SHOULD NEW GOALS BE FORMED WHEN THEY ARE NOT INCREASING STUDENT PERFORMANCE?

• **YES**



• **NO**

Click the correct answer.

## ARE THEY EFFECTIVE?

### STUDENT 1

- **GOALS (ON TESTS)**
  - IMPROVE BY 10 POINTS IN LANGUAGE ARTS
  - IMPROVE BY 5 POINTS IN SCIENCE
- **PERFORMANCE**
  - IMPROVED BY 15 POINTS IN LANGUAGE ARTS
  - DID NOT IMPROVE IN SCIENCE

### STUDENT 2

- **GOALS (ON TESTS)**
  - IMPROVE BY 10 POINTS IN MATH
  - IMPROVE BY 10 POINTS IN SOCIAL STUDIES
- **PERFORMANCE**
  - IMPROVED BY 8 POINTS IN MATH
  - IMPROVED BY 7 POINTS IN SOCIAL STUDIES

Write down your thoughts about each student.

**HOW DO YOU DETERMINE IF THE STRATEGIES ARE WORKING?** THERE MAY BE MORE THAN ONE CORRECT ANSWER.

- a. DECREASE IN ACADEMIC ACHIEVEMENT**
- b. INCREASE IN ACADEMIC ACHIEVEMENT**
- c. LEARNING GOALS ARE REACHED**
- d. ALL OF THE ABOVE**

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[Click the correct answer\(s\).](#)

**Try again!**

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## WHICH STUDENT IS USING THE STRATEGIES EFFECTIVELY?

### STUDENT 3

- **RECORDED STUDY HABITS DAILY**
  - STUDIED DAILY FOR 45 MINUTES
- **SET GOALS**
  - IMPROVE MATH SCORES BY 10 POINTS
- **PERFORMANCE**
  - IMPROVED BY 12 POINTS ON MATH

### STUDENT 4

- **RECORDED STUDY HABITS DAILY**
  - STUDIED FOR 20 MINUTES EVERY OTHER DAY
- **SET GOALS**
  - IMPROVE MATH SCORES BY 10 POINTS
- **PERFORMANCE**
  - IMPROVED BY 10 POINTS

## WHICH STUDENT IS USING THE STRATEGIES EFFECTIVELY? (CON'T)

### STUDENT 5

- **RECORDED STUDY HABITS OCCASIONALLY**
  - STUDIED 10 MINUTES
- **SET GOALS**
  - IMPROVE BY 10 POINTS IN SCIENCE
- **PERFORMANCE**
  - DID NOT IMPROVE

### STUDENT 6

- **RECORDED STUDY HABITS DAILY**
  - STUDIED 20 MINUTES A WEEK
- **SET GOALS**
  - IMPROVE BY 5 POINTS IN SOCIAL STUDIES
- **PERFORMANCE**
  - IMPROVED BY 3 POINTS



## WHICH STUDENTS USED THE STRATEGIES EFFECTIVELY?

- WRITE DOWN WHICH STUDENT(S) USED THE STRATEGIES EFFECTIVELY
- WRITE DOWN WHICH STUDENT(S) DID NOT USE THE STRATEGIES EFFECTIVELY

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## STRATEGIES ARE EFFECTIVE IF THEY CAUSE AN INCREASE IN ACHIEVEMENT.

• YES



• NO

Click the correct answer.

## THE SAME STRATEGIES SHOULD WORK FOR ALL STUDENTS.

• YES



• NO

Click the correct answer.

## REVIEW STUDENTS' GOALS

• STUDENT 3

• SET GOALS

- IMPROVE MATH SCORES BY 10 POINTS

• PERFORMANCE

- IMPROVED BY 12 POINTS ON MATH

• DOES THIS GOAL NEED TO BE CHANGED OR UPDATED?

• STUDENT 4

• SET GOALS

- IMPROVE MATH SCORES BY 10 POINTS

• PERFORMANCE

- IMPROVED BY 10 POINTS

• DOES THIS GOAL NEED TO BE CHANGED OR UPDATED?

## CREATE YOUR OWN GOALS

- CHOOSE YOUR SUBJECT TO BEGIN TO CREATE YOUR GOALS
  - 1<sup>ST</sup> RECORD YOUR STUDY HABITS
  - 2<sup>ND</sup> SET YOUR GOALS

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## SHOULD GOALS BE MONITORED OFTEN, AFTER EACH GRADING CYCLE?

• YES



• NO

Click the correct answer.

**Your goals should be revisited often to make sure they are helping you get the results you are looking for.**

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**SELF-REGULATED LEARNING STRATEGIES CAN ONLY BE USED IN SCIENCE CLASS?**

• **YES**



• **NO**

**Click the correct answer.**

**Self-regulated learning strategies can be used anytime you are trying to learn. It does not matter what the subject is!!**

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## **PRACTICE SELF-REGULATED STRATEGIES**

- **IN THE NOTEBOOK YOU WERE GIVEN BEGIN RECORDING YOUR STUDY TIMES AND HABITS**
- **AFTER THREE DAYS OF RECORDING, GO BACK AND REVIEW HOW MUCH TIME YOU SPENT STUDYING**
- **SET GOALS TO IMPROVE YOU STUDY HABITS AND TO IMPROVE YOUR GRADES**
- **AFTER THE NEXT TEST DETERMINE IF THE STRATEGIES ARE WORKING OR NOT**

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## SHOULD STRATEGIES BE USED DAILY?

• YES



• NO

[Click the correct answer.](#)

**You should use your strategies daily to get into good study habits.**

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## CAN STRATEGIES EFFECTIVENESS BE DOCUMENTED?

• YES



• NO

[Click the correct answer.](#)

**Your recording and monitoring your strategies to determine if they are effective for you. So of course this is being documented.**

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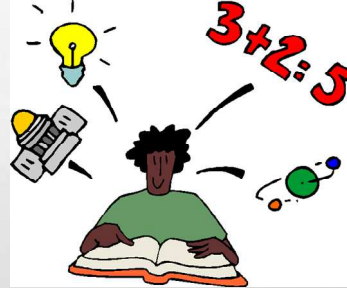
# LET'S SEE WHAT YOU KNOW!!

- **WHEN YOU FINISH THE TEST BEGIN USING THOSE STRATEGIES**

- RECORD
- MONITOR
- GOALS

- **THE END!**

- **[CLICK HERE TO BEGIN THE TEST](#)**



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