BLACK STUDENT SELF-EFFICACY AND THE ACHIEVEMENT GAP: A
HETEROGENEOUS GROUPING CASE STUDY

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ABSTRACT

This explanatory case study explored the ways in which a heterogeneous grouping modulates academic performance for a group of Black students in an Honors Biology class at Bay City High School (BCHS), a large racially and socioeconomically diverse public high school in suburban Maryland. Data was collected through individual interviews, self-efficacy surveys, multiple observations of student on-task behaviors, student-to-student interactions, student-to-teacher interactions, and other task-related conditions. Seven students and their parents, current teachers, and former teachers provided the data. Thematic-coding of the data as outlined by Creswell (2014) was employed in conjunction with Yin’s (2003) methods of analysis. In order to uncover students’ experiences of the heterogeneous grouping, the following research questions guided the study: (a) How do Black students experience success or failure in the heterogeneous honors program? and (b) What effect, if any, has the heterogeneous honors program had on student self-efficacy? The findings suggested that academically capable yet underachieving minority students can and do improve as their beliefs changed. Findings revealed that students were less dispirited by difficulty and more inspired by their successes. In general, their self-efficacy increased from being in an environment where others were positive, perseverant, and proactive.

Keywords: Achievement gap, differentiated instruction, heterogeneous grouping, honors biology, self-efficacy, tracking.
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Dedication

This dissertation is dedicated to my family: Denise, Luke and Jake. Denise, you gave me support and motivation I needed to finish at Penn State many years ago. Without you, I would never be in this position today. Luke and Jake, you gave me the motivation to never quit this journey, no matter how challenging and frustrating it could be at times. I love you all so much!
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List of Abbreviations

Advanced Placement (AP)
American College Test (ACT)
American Educational Research Association (AERA)
Bay City High School (BCHS)
Free and Reduced Meal Program (FARM)
Grade Point Average (GPA)
Institutional Review Board (IRB)
Intelligence Quotient (IQ)
Maryland State Assessment (MSA)
Maryland State Department of Education (MSDE)
Motivated Strategies for Learning Questionnaire (MLSQ)
Multiple Intelligence Theory (MI)
No Child Left Behind Legislation (NCLB)
Socioeconomic Status (SES)
Scholastic Aptitude Test (SAT)
Science, Technology, Engineering and Math (STEM)
CHAPTER ONE: INTRODUCTION

Background

The United States has a history of failing to provide all citizens equal access to quality education. In 1896, the ruling in the case of Plessy v. Ferguson supported a separate but equal doctrine in the constitution, deeming that it was constitutional to racially segregate public schools. According to Ansalone (2006), White schools provided a superior education to Black schools at the time, and the result of the Plessy v. Ferguson (1896) decision “denied black children the opportunity for an equal educational experience which could possibly alter their future trajectory” (p. 146). The right to educational equality and access was later mandated in Brown v. Board of Education of Topeka (1954), and is more recently supported by the Federal No Child Left Behind (NCLB, 2001) legislation. In Title I of NCLB (2001), a clear equality mandate is evident, as it declares that all students should have an equal opportunity to a high-quality education and to realize academic success. This basis for equality is also found in the Bible, where it is written “There is neither Jew nor Greek, there is neither slave nor free, there is no male and female, for you are all one in Christ Jesus (Galatians 3:28, English Standard Version).

Despite a right to equal access and educational equality, there continues to be a significant disparity in the academic achievement of White upper-middle class students and the achievement of students of color and lower socio-economic means (Harvard University, 2010). This disparity becomes even more apparent and impactful in the more rigorous academic courses, where minority students and students of poverty are grossly underrepresented. According to Taliaferro and DeCuir-Gunby (2007), “there is also a gap in the number of achieving students who get the opportunity to take their achievement further – to participate in
honors or advanced placement courses” (p. 173). Many researchers believe that the practice of educational tracking, which places students in classes based on perceived ability, greatly contributes to the achievement gap (Ansalone, 2006; Oakes, 1987; Wheelock, 1992). It is argued that the classes students take in high school perpetuate the existing racial and socioeconomic disparity, as minority students are often tracked into lower-level courses. According to Hallinan, Bottoms, and Pallas (2003), “students in low-ability groups are offered a less challenging and less interesting curriculum, are assigned more boring academic tasks, have less experienced teachers and fewer academic role models, and endure a more disruptive classroom atmosphere” (p. 96) when compared to higher-ability groups. Given this, academic tracking may be the modern day version of the discriminatory and damaging “separate but equal” practices of the past (Ansalone, 2006).

Documentation of the negative implications of tracking can be seen in Hanushek and Wossmann’s (2006) meta-analysis in which they compared achievement and heterogeneity in multiple country’s educational systems, and found “The results consistently indicate that early tracking increases inequality in achievement” (p. 75). Additionally, research suggests that eliminating tracking and grouping students heterogeneously is good for the achievement of students from all racial and ability groups (Burris & Welner, 2005; Cheng, Shui-fong & Chan, 2008; Oakes & Wells, 1998; Rubin, 2006). Specifically, Burris and Welner (2005) found that “When all students were taught the high-track curriculum, achievement rose for all groups of students—majority, minority, special education, low-SES, and high-SES” (p. 598). Furthermore, Cheng, Shui-fong & Chan (2008) found that heterogeneous grouping allows low achievers to get support and encouragement from high achievers, while high achievers cultivate their cognitive
and explaining skills. Armed with this information, a reassessment of schools’ groupings of students appears to be well overdue.

At Bay City High School (BCHS), heterogeneous grouping is encouraged. This school site is a large racially and socioeconomically diverse public high school in suburban Maryland. The school’s population in 2010 was 39% Black, 38% White, 18% Hispanic and 5% Asian. Overall, 38% of the students qualify for the Free and Reduced Meal (FARM) Program based on family income. Additionally, the school draws from 11 public housing communities, which are predominately Black. Of the school’s total Black population, 36% have below a 2.0 grade point average. This underperformance among Black students made the school a strong candidate for a heterogeneous initiative. Through a heterogeneous grouping initiative, there may be high expectations for all students, and students might finally believe themselves to be capable, one day leading to closure of the achievement gap.

**Situation to Self**

Throughout all of my professional and educational experiences, I have consistently recognized the disparity in academic access and achievement between White and non-Asian minority students. Believing this disparity in achievement can be eliminated, I have become dedicated to addressing the minority student achievement gap in my work as a school-based administrator. Axiology (Creswell, 2007) was integral to the study, as my values pertaining to equity in education will shape and guide the process. Because the study took aim at the achievement gap in public education, there will likely be an advocacy/participatory worldview tone present throughout. I recognize the interconnection of researcher and research, and will strive for objectivity in compliance with predominant post-positivist models of study. This study focused on understanding the *essence* of the school’s initiative and Black students’ experiences
in a heterogeneously-grouped Honors Biology class. Through becoming fully immersed in the class, the idiographic nature of the initiative was illuminated, and its effects on the achievement gap explored.

**Problem Statement**

The problem this study sought to address is the disparity in academic achievement between White students and Black students. This inequality in academic success has become known as the “achievement gap”, and is widely recognized throughout society and the field of education. No Child Left Behind aimed to close this gap, but legislation marred by bureaucratic red tape and an emphasis on the quantitative outcomes of students as opposed to the qualitative essence of their underachievement failed to truly eradicate achievement disparities (Abernathy, 2007). Current education reform sponsored by federal government’s Race to the Top initiative seeks to spur student achievement and eliminate the achievement gap (U. S. Department of Education, 2009). According to Chambers (2009), “Closing the achievement gap has been the focus of both academic and popular dialogues on education reform, argued about in congressional offices and teacher's lounges, discussed on CSPAN and Oprah” (p. 417).

School staff are often guilty of grouping students by constructs such as race and social class (Oakes & Lipton, 1999) which has ultimately supported academic tracks that fall along racial and socioeconomic lines. This has exacerbated existing achievement differences and further denied disadvantaged students access to the education they need to be successful later in life (Ansalone, 2006; Boykin & Noguera, 2011). According to Condron, Tope, Steidl and Freeman (2013) the lack of progress towards creating racially integrated learning environments has ensured the achievement gap epidemic between Black and White students is still an ongoing issue today.
Purpose Statement

The purpose of this explanatory case study was to discover the ways in which a heterogeneous grouping affects self-efficacy and academic performance for a group of Black students in an Honors Biology class at BCHS. Stake (2010) would define this as an intrinsic case study because as researchers and as a society we need to learn about this issue in order to improve learning conditions for all. Self-efficacy is the construct in social cognitive theory wherein belief in one’s ability impacts choice of activities and effort, engagement in behaviors necessary for attaining goals, academic interests and motivations, and growth in cognitive competencies and achievements (Bandura, 1997). For the purposes of this study, heterogeneous grouping is generally defined as a school initiative to address the achievement gap through creating and supporting higher-level racially and socioeconomically diverse mixed-ability classes.

Significance of the Study

In order to meet the original legislative mandates of the No Child Left Behind (2001) and the more recent call for education innovation and reform by Race to the Top (US Department of Education, 2009), all students from all defined demographic backgrounds must realize academic success. However, this is not the only motivation educators have to cultivate the potential in all students. According to Ream, Espinoza, and Ryan (2011):

The moral and civic imperative to eliminate gaps is strong, but on a simply utilitarian rationale it can also be said that better educated students earn higher incomes, live healthier lives, pay higher taxes, and are less likely to be involved in crime (p. 2).
Increased achievement correlates with a healthier, more productive society. Society has come too far since school desegregation to see schools again become internally segregated in the name of ability grouping. Archbald, Glutting, and Xiaoyu (2009) recognize this problem:

If African American students’ academic achievement scores are lower than those of Whites in middle school – a common pattern – then placement decisions based solely on measurable academic criteria will result in disproportionately low representation of African American students in more advanced courses and academic tracks” (p. 67).

With this argument in mind, Bay City High School (BCHS) piloted an initiative to try and address this disparity in representation in higher-level classes by creating a heterogeneously grouped honors biology class. This was achieved through working directly with the middle school science teachers to identify minority students who are believed to be capable of completing Honors Biology in ninth grade, despite GPAs below 2.5 and not meeting the districts prerequisite of completing Algebra I in eighth grade. Student potential was based on 8th grade Maryland State Assessment (MSA) scores in science, as scaled scores above 387 indicate proficiency with the content (Maryland State Department of Education, 2014). Middle school teachers were also consulted by high school staff, so that they could provide both quantitative and qualitative information to speak to their perceived potential of the underperforming students.

According to a study with a sample of 2,634 students by Spielhagen (2006), tracking students based on completion of algebra I in the eighth grade proved to have no benefit for high or low achieving students and only exacerbates achievement disparities
that already exist. Current research exists documenting the benefits of heterogeneous grouping in regards to student achievement (Burris, Heubert & Levin 2006; Burris & Welner, 2005; Oakes & Wells, 1998; Rubin, 2006). However, there is a gap in the literature chronicling the student experience and perspective in a heterogeneously grouped high-level classroom. This was noted by Tworek (2008), where she recommended future studies explore the voice of the students in heterogeneously grouped classes, after completing her qualitative case study of mixed-ability secondary science classes.

This study addresses this gap, in addition to documenting and understanding the student experience, by conducting a case study of one school’s heterogeneous pilot initiative. Study results may inform future decisions by BCHS and the local school district regarding student grouping, scheduling and other support services, in an effort to be more student-centered and increase access and achievement for Black students.

Research Questions

The following questions guided this study:

1. **Research Question 1**: How do Black students experience success or failure in the heterogeneous honors program?

2. **Research Question 2**: What effect, if any, has the heterogeneous honors program had on student self-efficacy?

Research Plan

This explanatory case study was done through interviewing and observing and collecting self-efficacy and academic performance data from the Black student participants, teachers, and parents. Case studies are beneficial for this type of study as they investigate programs where
multifarious factors and relations are involved, where there are no fundamental laws for determining factors and relations, and where these factors and relations can be directly observed (Thomas, Tiefenthal, Constable & Leyba, 2008). These students were placed in a heterogeneous Honors Biology course as a school pilot initiative to increase the achievement and representation of minority students in advanced classes. The number of students studied obviously is limited by the number of Black students moved up into Honors Biology. Students were entered into the program based upon high MSA scores, low GPAs, and teacher confirmations of potential. The few students studied were the students that teachers agree have most grossly underperformed prior to program admission, based on the aforementioned criteria. In alignment with Yin (2003), the unit of analysis is ultimately the individual, and so the case study itself will intently target seven of the students actually placed in the program. In addition to informing future placement, scheduling, and resource allocation decisions, the results of this study may provide teachers with valuable insight that may enable them to work more effectively with Black and other minority students in the future.

**Delimitations and Limitations**

**Limitations**

This study focused on a single academic subject area, so it is not known if the content will have a significant impact on the students’ overall experience. With all of the students in the proposed study being Black, it is unknown if students from other racial or ethnic backgrounds would have the same experience. However, Stake (2010) argued that an approach focused on a more intuitive, empirically-grounded generalization, known as a naturalistic generalization, will generate data that resonates experientially with a broad cross section of readers, thereby creating a greater comprehension of the case. Nonetheless, the degree of this generalization is uncertain.
Along these lines, the nature of the case study places certain boundaries on what can be done. Because it provides information about the case in narrative form, it may be difficult to hold a reader’s interest if too lengthy, and so information should be prevented in a rich and digestible manner (Neale, Thapa, & Boyce, 2006). Moreover, many in the scientific community argue that case studies have been viewed in the evaluation and research fields as less rigorous than surveys or other methods. Since case studies are the less controlled of the research methods, observer bias is a constant concern. Observer bias brings into the fray the researcher’s theories, hypotheses, perceptions, and experiences in the field. The researcher may strive to align data with preconceived notions, an exercise that will only harm the validity and reliability of the case study (Fidel, 2012). Moreover, as an employee of the school system, I may potentially be perceived as an authority figure to the students. Understanding this, measures will be taken to ensure the Hawthorne effect is not present, as students may wish to answer questions in a manner they believe pleases me. Fortunately, given that qualitative studies are interpretive inquiries, the subsequent interpretations from readers and participants, combined with the researcher’s, will offer multiple perspectives that can help overcome the researcher biases of background, history, context, and prior understanding (Creswell, 2014). Any subjective feelings I may develop for participants or study objectives will be counteracted by the multiple perspectives.

**Delimitations**

This study focused only on ninth grade Black students enrolled in honors biology from a single high school in Maryland. The participants have a history of low academic performance (grade point average below 2.5), and have not met the school’s prerequisite of completing Algebra I prior to enrolling in Biology. The students selected are aware that they were recommended for the program based on their MSA scores, despite a record of marginal
achievement and failure to complete the Biology prerequisite of Algebra I. This was done so that the study most clearly focused on capable, but underachieving Black students, placed in Honors Biology class as part of a school initiative to impact the achievement gap.

I did not analyze every Black student, only seven who have demonstrated the largest difference between their GPAs and MSA scores. Qualitative data was limited for descriptive, triangulation, and selective purposes; examining the disparity between participant GPA and their MSA score, and determining how much each student underachieved related to these metrics. Because the study focused on deriving the richer, qualitative content of the case, more complex statistical analyses would yield very little in a sample size of seven students (Creswell. 2007).

The theoretical construct for the proposed study is primarily Bandura’s self-efficacy and heterogeneous groupings, due to the preponderance of literature linking self-efficacy to outcome expectations and academic achievements, and detracking to increase academic motivation and realization. Parents, students, and teachers were observed, interviewed, and surveyed in order to uncover self-efficacy and heterogeneous grouping implications.

**Definition of Key Terms**

Certain concepts and terms appear frequently throughout the study, and thus deserve a brief introduction before they are further explored. These terms apply to the various theories and approaches to understanding the achievement gap, and are mostly general. As they are developed more throughout the dissertation, they warrant specific citations. In general, these key terms include:

1. Achievement Gap: The Achievement Gap is the disparity in achievement between students of color and lower socio-economic status and that of their peers on standardized tests, graduation rate and overall academic success (The Principals’ Partnership, 2007).
Historically, minority students and students from lower socio-economic backgrounds have not performed comparably to White and Asian students from middle and upper-middle class backgrounds. The federal legislation No Child Left Behind has been established to encourage the elimination of this achievement disparity.

2. Case study: A research method that permits researchers to retain the holistic and meaningful traits of real-life, usually contemporary, events such as life cycles, organizational and managerial processes, neighborhood changes, international relations, industrial maturation, and other pertinent contexts (Yin, 2003).

3. Detracking: The elimination of educational placement practices that “track” students based on perceived ability and that may also promote educational and social inequality.

4. Differentiated Instruction: A strategy by which the instructor accommodates and supports the diverse learning needs in a particular classroom.

5. Heterogeneous Grouping: A purposeful class structure that promotes and supports a diverse learning environment.

6. Homogeneous Grouping: A purposeful class structure where students are placed with other students that share similar characteristics.

7. Honors courses: A more rigorous option for students that wish to cover the curriculum at a faster pace and more in depth, compared to traditional standard level courses.

8. Multiple Intelligences Theory: Developed by Howard Gardner and suggests that there are at least eight distinct and independent types of intellectual abilities. Most individuals have a unique set or blend of a range of abilities and talents (Gardner, 2011).

9. No Child Left Behind Legislation (NCLB, 2001): Federally legislated standards-based education reform, which has required the states to set high standards for all students attending public schools that accept federal funds.

10. Race to the Top: Initiative by the United States Department of Education to fund and encourage education reform and innovation at the state and local levels (U.S. Department of Education, 2009)
CHAPTER TWO: LITERATURE REVIEW

Introduction

All educators would likely agree that they have the professional and ethical responsibility to help all children realize their potential, regardless of the student’s race, ethnicity or socio-economic status. However, despite teachers’ best efforts and intentions, there continues to be a significant disparity in the academic achievement of White upper-middle class students and that of Black students and students of lower socio-economic means (Harvard, 2010). This discrepancy has been labeled the “achievement gap” (NCLB, 2001). According to Harvard University (2010), “compared to Whites, significant gaps for Black and Hispanic students are evident in virtually every measure of achievement: NAEP math and reading test scores, high school completion rates, college enrollment and college completion rates” (para. 3). The academic disparity becomes even more apparent and impactful in the more rigorous academic courses, where minority students and students of low socioeconomic status are grossly underrepresented. This underrepresentation may appear to be a school issue, but the implications of this issue reach far beyond the classrooms, encapsulating societal issues at every level.

This chapter presents a review of literature that delves into the causes and implications of the achievement gap, along with strategies that may be effective in eliminating this access and achievement disparity in public schools. More specifically, the proposed study will use the explanatory case study outlined by both Yin and Stake in order to understand how and why experiences are as they are for seven Black students in a heterogeneously-grouped Honors Biology class. Observations, interviews, and self-reports will be employed and subsequently analyzed in non-statistical methods of analysis such as creating displays, tabulating the
frequency of events, ordering the information, and theme-coding. Case studies yield descriptions that are:

“complex, holistic, and involving a myriad of not highly isolated variables; data that are likely to be gathered at least partly by personalistic observation; and a writing style that is informal, perhaps narrative, possibly with verbatim quotation, illustration, and even allusion and metaphor” (Stake, 1978, p.7).

Supporting or rejecting hypotheses is secondary to forming a multifarious understanding of the case. As such, the role of the researcher was integral to the qualitative nature of this research design. It is with great hope, that this study has illuminated the ‘essence’ of a heterogeneously-grouped upper-level class while highlighting the relative effectiveness of such initiatives in closing the achievement gap.

**Thematic Analysis (TA)**

Qualitative research requires a broader and less restrictive sense of design. “The activities of collecting and analyzing data, developing an modifying theory, elaborating or refocusing the research questions, and identifying and dealing with validity threats are usually going on more or less simultaneously, each influencing all of the others” (Bickman & Rog, 2009, p. 215).

Qualitative research design can be complicated depending on the researcher’s experience with the particular methodology. Many researchers aspire to grow and expand their knowledge, and qualitative designs allow that (Turner, 2010). Specifically within the qualitative domain, the case study is an approach that allows for “detailed, in-depth data collection involving multiple sources of information (e.g., observations, interviews, audiovisual material, and documents and reports), and reports a case description and case-based themes” (Creswell, 2007, p. 73). In the milieu of academia, the case becomes the specific context or classroom of study.
One of the main problems investigated in classroom cases is achievement or lack thereof. The “achievement gap” is a descriptor in educational vernacular, used to reference the academic disparity between groups of students. The achievement gap shows up in grades, standardized-test scores, course selection, dropout rates, and college-completion rates, among other metrics of success. It is most often used to describe the troubling performance gaps between Black and Hispanic students, at the lower end of the performance scale, and their non-Hispanic White peers, and the similar academic disparity between students from low-income families and those who are more fiscally secure (The Principals’ Partnership, 2007). Fortunately, there are efforts being made to close the “gap,” through the application of relevant theories. These theories typically focus on the processes by which one learns in order to address the problem of academic underachievement from various angles.

Bandura (1977) is the pioneer of social learning theory, asserting that people learn from within a given social group through various modes of modeling, imitating, and observing. From an early age, students become keenly aware of how they compare to their peers in the classroom, and how teachers treat them based on this real or perceived level of ability. The perception of one’s ability to reach a goal or outcome is known as self-efficacy (Bandura, 2006). Bandura contends that failures are expected to produce greater reductions in self-efficacy when attributed to ability rather than to unusual situational circumstances. Low expectations of one’s abilities can significantly influence student achievement. According to Bandura (2006), an individual’s self-efficacy will have a significant impact on the effort and time expended when faced with obstacles while attempting to complete a task. Grouping students based on perceived ability sends them a negative message about their value and worth, which may be internalized and manifested in low-effort and achievement (Bandura, 2006). According to Ansalone (2006),
grouping and teacher verbal and nonverbal comments can have a significant negative impact on student self-efficacy. “The best predictor of GPA was academic self-concept,” when discussing minority student achievement (Awad, 2007, p. 201).

Closely tied with one’s achievement is one’s appraisal of ability or intelligence. For those who assess ability as an acquirable skill, self-efficacy is not only preserved, but strengthened (Bandura, 1993). Gardner (2011) proposed that there is not a single measure of intelligence, but in fact eight types of intelligence, each one a measure of the “individual’s biopsychological information processing capacity” (p. 229). Because many public educational systems presuppose one-size-fits-all, it has become increasingly important to remember to differentiate education and approach topics through multiple entry points consistent with the multiple intelligence theory (Gardner 2011). Kornhaber, Fierros and Veenema (2004) find that 41 schools using MI-inspired differentiated practices for several years have outperformed those that did not. Presumably, the curriculum is communicated more clearly to a larger number of students due to the targeting of their strongest intelligences.

Minority students benefit especially from differentiated instruction: “Put concretely, we can approach topics in a number of ways; we can make use of analogies and comparisons drawn from a range of domains; and we can express the key notions or concepts in a number of different symbolic forms” (Gardner, 2003, p. 9). One student may come to understand a concept from a completely different angle, using a completely different intelligence than would a classmate. In fact, many studies reveal that the primary reason minority students are likely to encounter more problems in schools than mainstream students, is an incomplete knowledge of minority students’ learning and communication styles (Morgan, 2010). Due to this problem,
achievement scores are lower, and placement in higher-level classes based solely on achievement scores becomes an inadequate educational practice.

Minority students who are placed, or tracked, in homogenous achievement-based groupings suffer the lowest self-efficacy, and so are least likely to challenge themselves academically (Hallinan, Bottoms & Pallas, 2003). The students eventually believe that they cannot succeed and attribute some of that blame to themselves. When minority students are grouped heterogeneously throughout the day, the exposure to similar and different abilities increases self-efficacy and promotes academic achievement (Cheng, Shui-fong, & Chan, 2008). This seems to decrease the chance of students adopting the maladaptive mindsets of one lumped group or the other. When mostly heterogeneous classes are mixed with one or two ability-based classes, minority students are given the best opportunity to see their skills and abilities manifest in various settings, as opposed to merely believing their ability is a single, stagnant trait of homogeneous grouping (The Principals’ Partnership, 2007). Self-efficacy, the belief in one’s ability to reach a certain outcome, is thus improved, and its correlate, academic achievement, is also improved. Self-efficacy influences how hard one works, how often one participates, how long one persists in the face of adversity, and how highly one achieves (Zimmerman, 2011).

A study of this nature focuses on the qualitative essence—how students engage a learning context. It is a study that will supersede mere statistical analyses, and captures the particular experiences of the minority educational experience. Specifically, it is a study that will use distinct sources of evidence and trace operational links over time, as opposed to merely documenting frequencies or incidences in archival and experimental analyses (Yin, 2011). The unique heterogeneous class contains previously underachieving Black students and merits a holistic method that poses “how” and “why” research questions. These questions will guide the
observations, surveys, and interviews, and will reveal the extent to which heterogeneity affects self-efficacy and factors of success and failure in academic achievement. Data was collected via standardized survey instruments, participant observation, and informal interviews. The observations and interviews will be thematically coded according to Creswell (2014), with a particular interest in areas of heterogeneity, self-efficacy, and academic success or failure. The data will then be analyzed along Yin’s (2003) strategies of pattern-matching, explanation-building, and time-series analysis in order to provide the structure needed to interpret the meaningful data.

In addition to informing future placement, scheduling and resource allocation decisions, the results of this study will provide teachers with valuable insight that may enable them to work more effectively with Black and other minority students in higher level courses in the future. Also, the case study will present understandings of this school initiative from the perspectives of the parents, students, and teacher. This explanatory case study will not only organically uncover precipitants of self-efficacy and achievement, but will more practically examine the effectiveness of closing the achievement gap using rigorous heterogeneous classes.

**Review of the Literature**

**Social Learning Theory/Self-Efficacy**

The achievement gap has often been correlated with students’ perceived abilities. Self-efficacy is a person’s beliefs about his or her ability to perform certain activities. Presumably, if one is not achieving, one may not believe in one’s ability to achieve. This supposition was popularized by Bandura (1977, 1995), when he suggested that behavior is governed by outcome expectations and self-efficacy, and that outcome expectations and self-efficacy have been influenced by prior behaviors. A person with high self-efficacy will be more likely to attempt an
activity and will persevere at it longer than a person with low self-efficacy (Bandura, 1977, 1995, 2006). In short, higher self-efficacy leads to approach versus avoidance behavior, and is an important part of the casual chain that may undermine or improve performances and expectations (Betz & Hackett, 2006).

Zimmerman (2011) finds that so-called self-regulated learners will proactively seek information when needed and view knowledge acquisition as a systematic and controllable process. More passive counterparts, those with low self-efficacy, may depend ineffectively on others, or may become despondent, making no overt effort to better themselves or their predicament (Zimmerman, 2011). Furthermore, those who believe they cannot manage threats experience high anxiety arousal and dwell on coping deficiencies, thus impairing their level of functioning (Bandura, 1993). Cotton (1989) found that younger children are more susceptible to the effects of expectancy communications than are older students, and that communicating low expectations decreases student performance more than communicating high expectations increases performance. Furthermore, “teachers with a high sense of efficacy feel a personal accomplishment, have high expectations for students, feel responsibility for student learning, have strategies for achieving objectives, a positive attitude about teaching and believe they can influence student learning” (Ashton, 1984, p. 29). Fortunately, research suggests that teachers can often strengthen struggling learners’ self-efficacy by linking new work to recent successes, teaching needed learning strategies, reinforcing effort and persistence, and helping them succeed on the very task they hope to fail (Margolis & McCabe, 2004).

Bandura (1977) conceptualizes four factors affecting one’s efficacy expectations: performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal. He asserts that one’s history of performance accomplishments is the most influential factor in
one’s self-efficacy. However, performance accomplishments are only one piece of the puzzle. Vicarious experiences, or seeing others engage a certain activity, also play a role in efficacy. Bandura (1977) asserts that through social learning, individuals fashion themselves after those in a given social group who model desired behavior or learning. Observing one perform activities that meet with success does, indeed, produce greater behavioral improvements than witnessing those performances modeled without any evident consequences (Zimmerman, 2008).

Similar to vicarious learning, verbal persuasion is also an undeniable modulator of self-efficacy. While this source of efficacy does not provide the authentic experiential base of performance accomplishments, verbal persuasion does bring behavioral change (Bandura, 1977). Individuals may enjoy a greater self-efficacy through the suggestion that they possess the capability to overcome. The last factor in self-efficacy levels is emotional arousal. Bandura (1977) contends that normal physiological responses to stress and circumstance are quite informing. A certain level of emotion is usually necessary to provide the impetus for behavioral change (Bandura, 1977). Known as biofeedback, individuals can monitor bodily responses, and learn to regulate them. An increased sense of self-efficacy via biofeedback training, along with the mastery of each subject or clinical area through education and training, can reduce student stress and anxiety (Ratanasiripong & Kathalae, 2012).

**Academic Tracking**

In many education systems, it is common to ‘track’ students into homogenous academic groupings from their early classroom days. Academic tracking is the practice of grouping students by academic ability and/or interest. It is a “social structure that differentially provides opportunities and imposes constraints upon what students have the potential to learn” (Carbonaro, 2005, p. 27). According to Hallinan, Bottoms, and Pallas (2003), “students in low-
ability groups are offered a less challenging and less interesting curriculum, are assigned more
boring academic tasks, have less experienced teachers and fewer academic role models, and
endure a more disruptive classroom atmosphere” (p. 96), when compared to higher-ability
groups. So what may have started as a well-intentioned grouping strategy may in reality be a
mechanism that maintains the status quo in regards to wealth, power and access to higher
education in today’s society (Oakes & Lipton, 1999).

For those who view ability as reflecting an inherent intellectual aptitude, perceived
efficacy plummets, analytic thinking becomes erratic, and group aspirations lowers (Bandura,
1993). These children will prefer tasks that minimize errors and reveal proficiency at the expense
of expanding their competencies and knowledge (Bandura, 1993). Students grouped
heterogeneously for most of the school day, but regrouped according to ability for one or two
subjects, can improve achievement in those areas for which they are grouped (The Principals’
Partnership, 2007).

Further documentation of the negative implications of tracking can be seen in Hanushek
and Wossmann’s (2006) study in which they discovered that “the results consistently indicate
that early tracking increases inequality in achievement” (p. 75). Additionally, research suggests
that eliminating tracking and grouping students heterogeneously is good for the achievement of
students from all racial and ability groups (Burris & Welner, 2005; Cheng, Shui-fong & Cheng,
2008). According to Burris and Welner (2005), “When all students were taught the high-track
curriculum, achievement rose for all groups of students—majority, minority, special education,
low-SES, and high-SES” (p. 598). This is also supported by Cheng, Shui-fong, and Chan
(2008), who explain that heterogeneous grouping allows low achievers to get support and
encouragement from high achievers, while high achievers cultivate their cognitive and explaining skills.

However, Adodo and Agbayewa (2011) found differently, noting that within homogenous classes, the average- and low-ability students benefited academically and developed positive attitudes toward science subjects, the school and themselves. In their study, the heterogeneous groupings proved detrimental to the slow learners, who didn’t receive the teacher attention required and consequently lost motivation due to fear of failure (Adodo & Agbayewa, 2011). Of course, “the central challenge in identifying the impact of tracking on performance is that schools that track students may be different in many respects from schools that do not” (Duflo, Dupas & Kremer, 2008). Intriguing to note, teachers in tracking schools are significantly more likely to both be in school and in class teaching than teachers not in tracking schools, suggesting that teacher efficacy may be higher in tracking schools (Duflo, Dupas & Kremer, 2008). According to Faris (2009), who conducted a study on heterogeneous and homogeneous grouping, there is evidence that concludes when a school has more heterogeneous characteristics—different ethnicities, varying socioeconomic status, varying cognitive abilities, etc.—there is a greater chance of negative academic effects.

**Peer Achievement Values and Anti-intellectualism**

While developmental theory suggests that strong peer networks promote healthy psychological development, motivation, and competence, Black peer groups are typically viewed as detrimental to the minority’s academic achievement (Gonzales, Cauce, Friedman & Mason, 1996). Taylor and Hudley (1998) find that White boys, similar to girls, value high-achieving, same ethnicity classmates, whereas ethnic minority boys least value high-achieving male students. However, Pollard (1993) reminded us that many researchers and practitioners use
“methods and strategies that are most successful with White males… thus leading to the belief that these procedures are the only ones possible” (p. 342).

Nonetheless, an attitude of anti-intellectualism appears to plague Black students. As Bandura (1977) explains, the student models his behavior off of those who successfully engage in an activity. If that activity be something illicit, the student will be more likely to attempt something illicit, and less likely to engage in an adaptive activity, like studying and/or school attendance. Further lowering self-efficacy are the negative messages delivered through peer groups. McWhorter (2006) argued that victimhood leads to separatism and anti-intellectualism follows from separatism out of a sense that educational achievement is solely a “White” endeavor. This verbal persuasion discourages positive academic habits, and endorses anti-intellectualism while characterizing achievement as treachery (Datnow & Cooper, 1997).

However, neighborhood factors may be more influential than peer group dynamics in affecting achievement values. Since the suburbanization of the middle class in the 1950s, federal transportation and highway policies created freeways that barricaded blacks in the unattractive inner cities; suburban communities created tight boundaries on the basis of race through zoning laws, land-use controls, and site-selection practices to limit minority access (Wilson, 2011). Policies and trends literally structured the cities so as to entrap Black minorities in areas of less resources and opportunities.

Fortunately, there are ways that Blacks can combat such environmental factors. In low risk neighborhoods, peer support correlates with positive grades for adolescents, but in high-risk neighborhoods, peer support has no correlation with academic achievement (Gonzales, Cauce, Friedman & Mason, 1996). Interestingly, even though Black students make social gains within schools when academically successful, they are often not accepted in their neighborhoods by
their minority peers due to their “acting White” (Datnow & Cooper, 1997). The construction of a self-concept dominated by the mainstream may “discourage the acquisition of cultural capital and impede the formulation of interpersonal relationships with other Black students” (Harper & Tuckman, 2011, p. 399). All in all, success is aligned with the White hegemony, an attitude that exacerbates the underachievement of Black students. In fact, Black male children begin to exhibit negative attitudes and behaviors toward school as early as 4th grade (Pollard, 1993).

Seemingly, teasing apart the accelerants of negative cognitions in the Black student population is a tough task, requiring researchers and practitioners to recognize the historical and contemporary oppression that Blacks encounter, and the strengths and adaptations drawn from Black culture (Pollard, 1993).

The reasons behind Black negative achievement values have long been analyzed. Predominantly three schools of thought exist, with the first being an explanation of the psychological in-school factors such as poor self-concept. This basic, scant scope of theory “has been criticized for its oversimplicity and lack of sensitivity to African-American experiences” (Graham, 1989). Furthermore, it stems from a myopic understanding of Black self-hatred that stagnated as a stereotyped construct of racial self-concept (Harpe & Tuckman, 2011). Another school of thought assumes that Black students may be less inclined to engage in learning from a curriculum that ignores or debases their culture and heritage (Boateng, 1990). This, of course, presupposes that the primary curriculum is one charged with hegemonic ideals and beliefs, attributes of a majority culture that do not coincide with the minority experience of many academic low-achievers. A third and final school of thought asserts that Blacks are excluded from fully participating in social and economic institutions (Ogbu, 1990). According to Ogbu, schools are organized to provide an inferior education to Black students. This school of thought
suggests that specific student factors, such as negative self-perceptions, decreased motivation, and lowered levels of academic achievement are the result of society’s perpetuation of low status for this group both in the schools and in the community through exclusion from the work force.

African American students are presented with the challenge of balancing identity constructs that reflect an awareness of the existence of discriminative forces, embracing the contingency between effort and achievement and recognizing the contradictory and erroneous nature of mainstream perceptions of the intelligence and competence of African Americans (Harper & Tuckman, 2006, p. 388).

White (2009) finds that there is also a significant difference in achievement between Black males and females. In fact, males are significantly more likely to attend high schools that are predominately Black and have an enrollment with a large number of students on free or reduced lunch, whereas females—at every socioeconomic status—outperform their racial counterparts. Furthermore, males are underrepresented in advanced and honors courses and are more likely to be placed in special education programs, suspended and/or expelled from school (Garbarino, 1999; Strayhorn, 2008). When a Black male student attends a school that he feels is unsafe and dangerous, he is less likely to focus on academic achievement and more likely to focus on protecting himself (Poliakoff, 2006).

**Media Inculcation**

An often overlooked contributor to Black underachievement is an entity that inculcates our daily lives: the media. More importantly, the media is a model for behavior. According to Bandura (1977), seeing others perform threatening activities without adverse consequences can generate expectations in observers that they too will improve if they intensify and persist their
efforts. Similarity to the model in other characteristics also increases the personal relevance of vicariously derived information, which can likewise enhance the effectiveness of symbolic modeling (Bandura, 1993). In fact, the television and radio exert an influence on children from a young, formative age, many times exceeding the influence of parents themselves (Allen, 1995). Allen (1995) finds that advocacy of violence, sexualindiscrimination and conspicuous consumerism abound; in the end, this constant barrage of deleterious messages shape the psyche and foment a culture of delinquency.

**Education Alternatives for Minorities**

Many critics of public education argue for the need for voucher programs, although these voucher “advocates have yet to persuade potential allies as well as the general public that widespread access to large-scale voucher programs will improve educational outcomes” (d’Entremont & Huerta, 2007, p. 45). Carnoy, Jacobsen, Mishel and Rothstein (2005) find that charter schools not only do not have higher levels of achievement, but that the level of achievement for minority students is actually lower. In fact, many argue that a system of school choice would only destroy that which it purports to improve:

A choice system, critics have long suggested, would privilege those students and parents whose race, class, or educational background give them a better position to navigate the market for schools. Similarly, schools would have an incentive to recruit students whose educational ability and family backgrounds make them attractive. At the end of the day, the traditional public system would be left populated by the least able children with the least active parents. Thus, even if choice benefited individual families, society as a whole, and especially disadvantaged families, would suffer. (Forman, 2007b, p. 840)
Although there is a preponderance of evidence suggesting voucher programs are ineffective and unlikely to be widely accepted, there are a few diamond studies in the rough. In an analysis of NYC charter schools, Hoxby and Murarka (2007) discover that of those minority students who enter the charter lottery, the admitted ones score considerably higher on standardized tests than do their public school counterparts who are not admitted. Furthermore, parental satisfaction among those who choose their children’s schools is considerably high. The parents prefer the private or charter schools over public schools, regardless of measures of academic benefit (Viteritti, 2010). However, this is a tremendous point of contention, as voucher programs permit public funds to be used for both public and private schools (Ladd, 2002). If the general public is angered—the same general public accused by many to be perpetrating structures of racial stratification—then there exists the distinct possibility of merely exacerbating ethnic divides and biases.

**Metrics of Academic Achievement**

Because many studies do not more aptly compare subsets of students on racial and socioeconomic factors, assertions about school effectiveness are myopic (Cavanaugh, 2012). The most common way to indicate a student’s level of achievement is through a summative grade or numeric. Unfortunately, this practice has superseded non-graded, formative assessments of student learning that provide feedback to students as they learn, motivate them, and encourage them to be self-regulated learners (Allen, 2005). Brookhart (1993) explains how nonacademic factors are often used as criteria for assigning grades because some teachers consider the consequences of grades more important than the value of clear communication of information and the interpretability of the grades. While teachers may use their own student-level assessments (tests, quizzes, homework, problem sets) to monitor learning, it is challenging to use
performance on classroom measures to predict performance on external measures such as statewide tests or nationally normed standardized tests (U.S. Department of Education, 2009).

Invalid grades that understate the student’s knowledge may prevent a student with ability to pursue certain educational or career opportunities (Allen, 2005). Also, based on principles of attribution and social cognitive theories, if students receive grades lower than ones that accurately depict their true level of academic knowledge, it may cause students to believe they lack the ability to succeed academically and lower their sense of self-efficacy as well as their motivation to learn (Pintrich & Schunk, 2002). Obviously, inept grading only confounds lack of achievement in minority populations, where preexisting social and psychological factors already disadvantage the beleaguered student. Even more problematic is the fact that these static achievement levels reflect a performance at a given level, and not informative intervals of gain or loss (Carnoy, Jacobsen & Rothstein, 2005).

Another metric often used to establish achievement guidelines and ascertain achievement progress is that of standardized tests. Those such as the SAT and ACT are aptitude tests, designed to forecast a student’s achievement in a future educational setting, but the achievement standardized tests, such as Stanford Achievement Tests, are used to evaluate schools (Popham, 1999). Regardless of this differentiation, “studies strongly suggest that standardized tests fail to measure the qualities that are truly important, reward the ability to adopt a superficial style of thinking, and may in fact penalize many of the candidates with the deepest minds” (Carter, 2004). As a consequence, not only are minority students disadvantaged, like many students, by the questionable validity of standardized tests, but they are often the unique victims of cultural bias. One of the chief reasons that students’ socioeconomic status is so highly correlated with standardized test scores is that many items on standardized achievement tests really focus on
assessing knowledge and/or skills learned outside of school—knowledge and/or skills more likely to be learned in some socioeconomic settings than in others (Popham, 1999). Class-placement based on standardized testing goes awry because the tests discriminate against those of low socioeconomic status, whose range of experiences and knowledge does not conflate with that of the privileged majority mostly designing and taking the tests. Of course, supporters of standardized tests argue that ‘institutionalized racism’ is a myth; that standardized testing is an important part of secondary and higher education, as well as the most logical way to certify for a variety of professions (Roberts, 2006).

**Black Family Dynamics**

While ability may go misdiagnosed and mishandled in the educational context, an optimist would hope that extracurricular contexts *can* offer the support necessary to close the achievement gap. One major factor in the success or failure of Black students is the family, specifically the parents and/or guardians. In a study of Seattle Black students, Gonzales, Cauce, Friedman, and Mason (1996) found that of 120 adolescents surveyed, 43% lived in homes under a single mother, 53% reported a family yearly income between $10,000 and $30,000, and 56% reported a parental education level at some point post-high school. However, despite these socioeconomic struggles, parent-child interactions are the most robust predictor of Black adolescent success (Toldson, Harrison, Perine, Carreiro, & Caldwell, 2006). Mandara (2006) also finds that when Black parents are actively involved in their sons’ academic efforts by monitoring homework as well as other academic pursuits, limiting nonproductive and destructive activities (e.g., television, radio, and video games), and creating a constant, positive dialogue with the teachers and school officials, they increased the odds of their sons succeeding in school.
While prior research has explored Black and White family differences, information is relatively sparse regarding differences among Black families of different incomes, regions, life-cycle stages, and value orientations, thus resulting in monolithic, stereotypic characterizations of Black families (Allen, 1995). Kames, Shwedel, and Steinberg (1984) discovered that 90% of the parents of gifted students they surveyed immersed themselves in their children's education. Likewise, Clark (1983) found that academically successful Black students had mothers who provided more books, set clearer academic goals, and were more deeply involved in schoolwork than Black parents whose children were less successful. However, parents of Black students are more likely to withdraw from the academic sphere or school community when educators assume their children are beyond help (Ford, Harris, Tyson & Trotman, 2000).

The repercussions of a lack of parental involvement are student detachment, refusal to be assessed for giftedness, refusal to be placed in gifted programs, and high anxiety during test-taking situations in which the peer-friendly stereotype of black underachievement is under threat (Ford, Harris, Tyson & Trotman, 2000). Family dysfunction and conflict, difficult relations with family members, sibling problems and rivalry, inconsistent role models and value systems in the family, minimal parental academic guidance and support, inconsistent parental monitoring of students' achievement oriented activities, and inappropriate parental expectations are all precipitants of failure in Black students (Reis, Colbert, & Hebert, 2005). The student may model his or her behavior off of an older sibling, or some other form of inappropriate behavior. Self-efficacy will then be modulated. If the student believes he can distribute narcotics because his brother has done so successfully, that student has a strong belief in achieving a certain outcome. Unfortunately, that outcome may eventually lead to harm, death, or jail time. Even more telling, is the fact that many students model stereotypical behaviors. For example, in 2009 the Institute
for Research on Education Policy and Practice at Stanford University found that specific student
groups underperformed in stereotypical ways on state exit exams—girls performed worse on
math, for example, or students from Asian-American backgrounds scored lower on reading—
suggesting that the high-stakes nature of the tests could contribute to students’ performance
anxiety (Viadero, 2009). Whether these stereotypes significantly impacted exam performance is
unclear, but what isn’t unclear is the effect of family on self-efficacy and academic performance.
Without proper guidance and support, the Black student may very well falter, regardless of
ability.

Unfortunately, many of the problems that plague the modern day Black family do not
come from directly within the family context. Black families are deprived of adequate health
care in this, the world's most medically advanced society, resulting in disproportionate numbers
of infancy deaths, poor nutrition, lack of immunization, and accidental deaths (Allen, 1995). As
recently as 2010, 44% of Blacks in comparison to 62% of non-Hispanic Whites used employer-
sponsored health insurance, 28% of Blacks in comparison to 11% of non-Hispanic Whites relied
on public health insurance, and 20.8% of Blacks in comparison to 11.7% of non-Hispanic Whites
were uninsured (U.S. Census Bureau, 2011). Basic healthcare and wellbeing are the foundation
for all adaptive life pursuits; without an actionable plan to ensure families can meet their needs,
everything else falls to the wayside. Because many single mothers are finding employment
outside the domestic sphere, childcare is necessitated more than ever (White, 2006). Limited
availability of child care options, high costs where these are available, and large numbers of
Black children in foster care make the provision of child care services to Black families
necessary (Allen, 1995).
The modern day Black family is one rife with hardship. Socially and economically disadvantaged families oftentimes cannot offer the support that is truly needed to ensure academic success. Black students oftentimes derive values from the single parent of the household, and if this presiding role model does not promote visions of success and mobility, the student’s self-efficacy suffers (Ford, Harris, Tyson & Trotman, 2000). However, the positive effects of maternal restrictive control vary substantially with the risk factors of the neighborhood context (Gonzales, Cauce, Friedman & Mason, 1996). Nonetheless, if a Black student’s mother has furthered her education, while toiling for the family at multiple jobs, the student is more likely to see the success of the mother’s efforts, however difficult, and attempt a similar struggle (White, 2006).

**Gifted and Resilient Minority Students**

In improving self-efficacy in Black students, one must be especially cognizant of those with considerable ability. While the convolution of various academic metrics may contribute to the achievement gap, there is no denying the presence of gifted minority students who have the potential to match or surpass their racial counterparts. Unfortunately, Ford, Harris, Tyson, and Trotman (2000) found that the majority of literature focuses heavily on the recruitment (that is, the identification and assessment) of Black students for placement in gifted programs, with little attention focused on their retention, on strategies for ensuring that minority students experience success once identified and placed. As such, the issue of perfecting metrics of ability (while clearly important), should not overshadow the issue of cultivating that ability to meaningful ends (Cavanaugh, 2012). This task is important, as it requires researchers and
educators alike to change their mindset from the “deficit perspective,” in order to ameliorate the underrepresentation of gifted Black students in gifted programs:

Students of color who are culturally different from their White counterparts are viewed as culturally deprived or disadvantaged. This deficit perspective regarding cultural diversity keeps educators from recognizing the gifts and talents of African American students. Finally, we maintain that educators must aggressively seek ways both to recruit and to retain African American students in gifted education. (Ford, Harris, Tyson & Trotman, 2000, p. 52).

The problem, of course, is dualistic. One can appreciate the structures that marginalize minority students; however, the risk then becomes that such a lens clouds judgments, and perpetuates the unfavorable outcomes that are meant to be eliminated. Furthermore, if this notion of cultural deprivation is translated to Black students, the student will likely underachieve, as teenagers have a tendency to equate being different with being inferior (Buescher, 1991). Moreover, when students align themselves with these stereotypes, the results are decreased practice time for a task, and a disbelief in belonging to a given academic domain (Ford, 2011). Exacerbating this problem, is the fact that “many teachers reported having little exposure to gifted education in their teacher preparation programs, and most teachers, including those who held degrees in special education, lacked any formal preparation in gifted education” (Ford, Harris, Tyson & Trotman, 2000, p. 55). This leads to Black students disguising their giftedness by acting as the class clown or top athlete, and failing to pursue accelerated courses.

Despite the failures of many educators to promote an environment conducive to the success of gifted Black students, Luthar, Cichetti and Becker (2000) describe the term resilience, the ability to maintain competence despite stressful and difficult life circumstances. Because
socioeconomic stress carries the potential to jeopardize children’s growth and development, and
damage their sense of trust, safety and security, poverty strikes at the very core. Poverty has been
identified as a specific predictor for criminality, and childhood abuse as a predictor for later
emotional and physical problems (Gordon & Song, 1994) However, certain students have
persevered, regardless of the confluence of such negative factors. Resilient Black students, those
who transcend their plights and reach success, are often bastioned by protective factors.
Protective factors include good intellectual ability, problem-solving ability, and engagement in
productive activities (Anthony & Cohler, 1987; Doll & Lyon, 1998).

Neihart (2001) suggested that gifted children share common characteristics with resilient
children, such as intelligence and curiosity, self-efficacy, sense of humor, and problem-solving
ability. Academically talented children and resilient children often have parents who do not
demand conformity but enable children to develop with some autonomy and a positive
stress the importance of research on the resilience of high achieving students, but caution that
although some common characteristics exist, many talented students do not develop resilience.
Resilience must be encouraged through a strong psychological support network, in and out of
school. Having successful role models in the school, through the media, and outside the
classroom can stimulate greater persistence in academic pursuits (Neihart, 2001).

Unfortunately, many Black students of high ability continue to underachieve, despite
their obvious potential. Gifted underachievers reported inappropriate early curricular
experiences, absence of opportunities to develop appropriate school work habits, negative
interactions with teachers, absence of challenge in high school, and questionable counseling
experiences (Reis, Cobert & Hebert, 2005). The negative effects of these issues manifested as
boredom with curricula, truancy, disciplinary problems, too much unstructured time, confused or unrealistic aspirations, insufficient perseverance, and low self-efficacy (Reis, Colbert, & Hebert, 2005). A protective factor that appears to ward off these negative effects is involvement. That is to say, involvement in a variety of adaptive daily activities that position the student on a sustainable trajectory and eliminate the likelihood of engagement in maladaptive activities:

All of the high achieving students were involved in numerous activities that were held both during and after school hours and remained in their high school for hours after school each day for a wide variety of activities. Those who were 16 all worked part-time in jobs nearby, usually for 10-15 hours each week. All participated in more than one sport and all were also involved in numerous school clubs and activities, including jazz band, foreign language clubs, service groups, and academic competitions. (Reis, Colbert, & Hebert, 2005, p. 116)

Being productively busy is a deterrent to urban degradation. Many high-achieving students also report the positive benefits of honors classes, as they not only provide the students work to fill their hours, but surround students with like-minded peers who share an interest in working hard and getting ahead (Ford, 2011). Consequently, though transient lapses in motivation and work ethic do occur, a high-achiever’s peers will ultimately prevent him or her from sinking into the self-destructive habits of equally-abled low-achievers. According to Reis, Colbert, and, Hebert (2005), underachieving students:

Regularly left school at 1:50 each afternoon and spent the next several hours in unproductive use of their time. The school day was too short for these high ability students who often chose not to engage in productive activities after school (p. 118).
Reis, Cobert, and Hebert (2005) called for the need to improve scholastic resources, so that Black students have a functional space for post-schooldays. They can interrelate with peers who hold a similar interest but are of varying abilities, thus fostering a sense of community that transcends intra-minority sentiments (Reis, Colbert, & Hebert, 2005). Ford (2011) advises using a multicultural curriculum to promote positive academic habits among gifted Black students. The most effective multicultural curriculum achieves the following things: it teaches values supporting individualism and cultural diversity, encourages the qualitative expansion and integration of ethnic cultures into mainstream society, and explores alternative and emerging lifestyles so as to embrace and enhance cultural pluralism (Ford, 2011).

**Multiple Intelligences and Differentiated Instruction**

Intelligence has always been a concern in the recognition and placement of students. According to Gardner (2011), individuals possess different aptitudes and demonstrate them in different ways. Because of this, intelligence cannot be reduced to a simple numerical ranking, such as an IQ score. Most individuals have a unique set of abilities and talents, and may learn and demonstrate their knowledge in different ways. Through the use of differentiated instruction, teachers may not only modify instructional content to meet student needs, but also align the process and product of learning with a student’s particular strengths or intelligences. Gardner (2011) distinguished among eight types of intelligences: abilities to solve problems or fashion products in multiple cultural settings.

According to Gardner (2006), if a student is weak in one area of intelligence, he or she must be “given a secondary route to the solution to the problem, perhaps through the medium of an intelligence that is relatively strong for that individual” (p. 33). This was illustrated by Colannino, Hoyt, and Murray (2004) where they observed that “Grouping students for science
labs by multiple intelligences seemed to improve both the quality and timely completion of science lab reports” (p. 47). Furthermore, by targeting the five ‘entry points,’ or pathways to learning, instructors can cater to the multiple intelligences of their students; the entry points include narratives, logic and deductive reasoning, keywords and definitions, musical and visual arts, and objects and materials (Gardner, 2011).

Another dominant theory of intelligence, Sternberg’s (1985) Triarchic Theory of Intelligence, devises three main modes of intelligence: componential, experiential, and contextual. Componential thinkers tend to be analytical and abstract in ability and do well in school and on standardized tests. Experiential learners enjoy creativity and the ability to go outside the rules, even their own. Contextual learners are the classic ‘street-smart’ individuals, who can adapt readily through social competence and practicality, but may not exhibit their abilities in the classroom. Non-verbal tests “give students opportunities to demonstrate their intelligence without the confounding influence of language, vocabulary, and academic exposure” (Ford, Harris, Tyson & Trotman, 2000, p. 57). Instead of losing confidence in one’s ability to complete an assignment because the words are unfamiliar, a student can understand the concept without words—a different approach to the same problem (Gardner, 2003). By eliminating this confounding influence, students are made aware of their ability, and can expect higher self-efficacy within rigorous heterogeneously grouped classes.

Differentiating the instruction also means including materials that are relevant to the minority students. This include books and curricular materials that are culturally diverse; social and cultural issues/topics, concepts and issues from multiple perspectives, and a focus on excellence and equity (Ford, Harris, Tyson & Trotman, 2000). Heterogeneous grouping is most
successful when it is “not merely a response to an abstract sense of fairness but is also a practical way to act on new knowledge about intelligence and learning” (Oakes & Lipton, 1992, p. 449)

**Science and Math Studies.**

Heterogeneous grouping not only allows for whole classes of students of varying abilities to learn in one classroom, but also permits within-classroom groupings in which students of varying abilities learn together in cooperative learning arrangements (Daniel, 2007). However, Catsambis, Mulkey, and Crain (2001) find that when young adolescent students are assigned to high-ability groups in mathematics, the academic self-concept of the males diminishes while that of the females thrives. By contrast, males placed in low-ability mathematics groups actually experience increased self-concept, at least temporarily.

Nonetheless, many studies support the effectiveness of heterogeneous groupings in increasing student performance (Daniel, 2007). In a study of 1000 students from a diverse suburban middle school, Burris, Heubert and Levin (2006) find that detracking math students leads to increased performance and enrollment in rigorous math courses. The longitudinal study eschews national assessment tests in favor of school-specific, curricula-specific assessments to indicate improved academic performance in the majority of math students (Burris, Heubert & Levin, 2006). The study reveals that “an enriched, accelerated curriculum is more beneficial to at-risk learners and low-achieving students than a traditional remedial curriculum that slows down instruction” (Burris, Heubert & Levin, 2006, p. 132). Furthermore, in a high school study of heterogeneous grouping, the detracked classes had fewer problems than former low-tracked classes, exhibited academic tones similar to that of former high-tracked classes, and sustained the success of high-achievers (Burris & Garrity, 2008).
Fewer than 10 percent of Black or Hispanic students participate in rigorous courses (Vanneman, Hamilton, Baldwin, Anderson & Rahman, 2009). Even in a heterogeneous class where the instruction is differentiated and the curriculum rigorous and culturally relevant, the graduating high school minority student must face a harsh reality: jobs are scarcer. Fortunately, the areas of science, technology, engineering and math (STEM) require 1 million new workers in the US (Porter, 2012). It is necessary that high school courses of science link with the everyday experiences of urban youth so as to ensure students are engaged and willing to further pursue their interests to the benefit of themselves and society as a whole (Proweller & Mitchener, 2004). Such rigorous classes, in addition to vocational training, better prepare the Black student for a career and/or continued education. However, it must be remembered that simply imposing a heterogeneous format without other changes is ineffectual: “Most successful instances of detracking combine deep structural reform with thoughtful pedagogical change, and are undergirded by an engagement with students’ and teachers’ beliefs around notions of ability and achievement. When these facets converge, the positive results for students are startling” (Rubin, 2006, p. 7).

**Case Studies**

Many detracking studies have been conducted within the framework of the qualitative case study. In terms of qualitative research, the case study focuses on the discovering ‘why’ of social phenomena by addressing why people behave as they do, how opinions and attitudes form, how events affect people within contexts, how and why cultures form, and disparities within and between social groups (Joubish, Khurram, Ahmed, Fatima & Haider, 2011). Qualitative research is considered highly fluid, in that it does not presuppose a static conception of reality. As such,
the case study methodology seeks to establish that realities are created meaningfully, dependent upon different contexts and perceptions.

The case study specifically explores these themes through a variety of tactics. According to Creswell (2014), the case study research is a qualitative approach in which the investigator explores a bounded system (case) or multiple bounded systems (cases) over time. These ‘bounded systems’ are studied through detailed, in-depth data collection integrating sources of information such as observations, interviews, audiovisual material, documents and reports. A case study can be considered simultaneously a methodology, a strategy of inquiry, or a research strategy, with exploration and description being the primary end-goals (Creswell, 2014). Case studies can focus on multiple cases or single cases, with the intent varying from understanding the representative issue or the case itself.

Many argue that the knowledge learned from case study is unique. According to Stake (2010) such knowledge is derived from the reader’s experience because it is more vivid and sensory than abstract; it is more contextual, and more developed by reader interpretation, allowing the reader to generalize from reference populations to other populations understood through experience. Stake (2010) generally regards case analysis as an iterative process in which analysis begins with the first data collected, followed by resonating insights and tentative hypotheses that guide the next phase of data collection and assimilation. This leads to the sharpening of questions, the amalgamation of more data, and ultimately more insights and more interpretive iterations.

Case studies are perfect for social phenomenon. In terms of detracking and the effects of heterogeneous initiatives on the achievement gap, several case studies have corroborated this efficacy. In a study of a racially-mixed Southern California high school, curriculum
intensification and detracking reduction led to significant increases in Geometry and Algebra enrollment among 8th grade students (Domina, Penner & Conley, 2012). Another study of a diverse suburban school district by Burris, Heubert, and Levins (2006) found that the introduction of heterogeneous mathematic classes boosted the probability of completion of advanced math courses, the rates of participation in advanced placement calculus and the average test scores, among all socioeconomic and minority groups.

Of course, the efficacy of heterogeneous initiatives is quite dependent upon the nature of the school, the school district, the student composition, and the teachers, faculty members, and community players. A multiple-case study by Rubin (2008) revealed the glaring differences in effectiveness between three school site’s heterogeneous initiatives:

At the low income, majority African American and Latino school, detracking reform was framed by a discourse of deficit that posited all of the school’s students as unwaveringly low in ability, and classroom practices provided little opportunity for students to either display or develop competence. In contrast, detracking at the suburban, homogeneous school spurred a creative curriculum targeted to the needs of individual students in the heterogeneous classroom, all of whom were presumed to be bright, motivated and college bound despite varied skills. At the racially and socioeconomically integrated school, a community and school system in which people were highly concerned with issues of equity and diversity, teaching practices in the detracked classroom emphasized flexibility and personalization, providing opportunities for students to examine social and cultural issues. (p. 647)

Thus, both the researcher’s and the school’s interpretations of tracking influenced the findings of the multiple-case study. The case was fueled by varying attitudes toward believed
ability, behaviors, outcomes and attitudes that impacted the self-efficacies of suburban, urban, and mixed racial students. Rubin (2008) demonstrated the importance of context in qualitative research, a factor that partially explains the disagreement in the literature over the relative efficacy of heterogeneous and homogeneous groupings.

Still, many research syntheses argue for the overall effectiveness of school heterogeneity on closing the achievement gap. One prominent study by Rui (2009) performed a meta-analysis on fifteen studies conducted from 1972 to 2006, ultimately finding that detracking reform had an appreciable effect on low-ability student achievement and no significant effects on average and high-ability student achievement. Results along these lines indicate that students typically classified as low-ability have much to gain from increased resources and detracking. As no surprise, heterogeneous initiatives continue on in many schools, with a specific demand for detail concerning said schools’ contextual qualitative factors. The nature of the case study, with its presumption of reality-by-context, is nicely suited to study this phenomenon (Creswell, 2014).

**Summary**

Self-efficacy has long been correlated with academic achievement gaps between groups of students. According to Bandura’s (1977) social learning theory, the higher the self-efficacy, the more likely students are to begin and persist academic tasks. The lower the self-efficacy, the less likely, and the more likely they’ll begin and persist maladaptive tasks. There are countless factors that influence one’s self-efficacy. They include but are not limited to: the internalization of cultural stereotypes, peer group pressures, family dynamics, biases in achievement assessments, low socioeconomic status, the media, and alternative education (Allen, 1995; Carnoy, Jacobsen & Rothstein, 2005; Gonzales, Cauce, Friedman & Mason, 1996; Harvard University, 2010; Popham, 1999; Reis, Colbert, & Hebert, 2005). I believe that minority students
see the commercial success of musicians, celebrities, and T.V. stars, and may believe that they
too can achieve similar results. While I find it laudable for students to dream big, sometimes
their modeling of media stars also entails a modeling of questionable behaviors: drug and alcohol
abuse. Students may look up to role models who do not endorse adaptive ideas, leading students
to pursue heavily their ‘pipe-dreams,’ while ignoring the practical fallback of education.
Minority students, who already feel misunderstood, may adhere to their support of role models
they deem worthy, even in the face of contradictory evidence. As underachievement plummets,
student self-efficacy also drops, and students begin to seek relatable models who share their
maladaptive behaviors. Their idolization of media cancers informs their learning and subsequent
behavior; their behavior then informs their opinion. It seemingly becomes a vicious circle.
Unfortunately, academic achievement is rarely part of that circle.

Bandura (1977) categorizes the modulators of self-efficacy in four main categories,
categories for which all members of society should take some form of responsibility:
performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal.
Self-efficacy is as qualitative as it is quantitative. Again, one may have ‘higher’ self-efficacy but
still engage in activities that would increase the achievement gap. Just because a student believes
in his ability to complete a task, that doesn’t mean that the task he’ll subsequently pursue is an
adaptive one. I believe that by not supporting and nurturing positive habits, learners will
underachieve and their true abilities may go forever unappreciated. Even worse, these learners
may come to resent the education system. They may become part of the problem, contributing in
any way to denigrate a system that has made them feel bad about themselves. Furthermore, their
‘feeling bad’ about themselves becomes a perpetual state. By identifying and properly treating
those factors that degrade self-efficacy, we can all get on the right trajectory for closing the gap.
However, specifically within the school context, educators have a special responsibility. A common practice of placing students, known as ‘tracking,’ has had the unintended outcome of further increasing the achievement differences between White and minority students. I find that because academic tracking presupposes a general stagnant ability in students and divides them on this basis, the students internalize an unchangeable perception of their potential. Of course, some researchers have found these homogenous groupings to be effective, and attribute this to increased teacher self-efficacy and the tracking schools’ compositions (Adodo & Agbayewa, 2011; Duflo, Dupas & Kremer, 2008). However, many studies have revealed that de-tracking, or heterogeneous grouping of students, is preferred to homogenous grouping (Ansalone, 2006; Hanushek, 2006; Oates, 1987). By placing students in mixed-ability heterogeneous classrooms, alongside differentiated instruction, learning styles are recognized, and high expectations are reasonably created for all. In mixed-ability heterogeneous classrooms, students may gain self-efficacy from their own success and the success of others. While studies disagree to the extent that heterogeneous classrooms affect student self-efficacy, most studies indicate heterogeneous grouping is highly successfully, as long as a concurrent focus on the quality of instruction exists (Daniel, 2007).

In an increasingly complex technological age, fun and learning can intertwine, as education becomes more interactive and multisensory, and hopefully more informative. Not only are different intelligences targeted through varying modes of integration, but the full array of these intelligences is borne out within the classroom. In high school, where abilities and beliefs and skin colors intertwine, a stimulating heterogeneous education is especially important. While nomothetic studies have examined the co-variables of heterogeneous high school classes and the
achievement gap, few have specifically examined the ‘case’ of a single heterogeneous class in compliance with Yin’s and Stake’s explanatory case study tenets.

Many quantitative studies examine the symptoms of the achievement gap—those variables that manifest alongside academic achievement. However, few studies have immersed in the context itself, informed by the very intimate, very socially learned experiences of those within a single classroom. Research on the quality of Black experiences in rigorous science classes is far from abounding; an idiographic analysis is both unique, and hopefully, revelatory. Through observation, interview and self-report, the researcher can better capture the minority learning experience as it pertains to Bandura’s conception of self-efficacy. Thus, the study may very well illuminate the qualitative sources of the achievement gap, and promote further research on the essence of Black achievement in the heterogeneous high school setting.

School initiatives to create heterogeneous classes on the basis of multiple intelligences, achievement, and student interest are worthwhile (Burris & Garrity, 2008). While certain subjects have been analyzed by nomothetic studies, there is a dearth of literature that captures the essence of a single heterogeneous science class. The proposed case study seeks to capture the observations and expressed experiences of seven Black high school students in a challenging and stimulating heterogeneous Biology class. The use of Yin’s and Stake’s case study tenets affords an opportunity to understand the why and how behind Black student underachievement—why they experience it, and how they experience it. Two research questions will guide the study by highlighting students’, parents’ and teachers’ experiences with the class, the school, and the personal learning process. The hermeneutics of this approach will allow one to interpret, organize, and present the qualitative experience of these high school students in ways that most research has not.
It is hoped that the research findings may shed light on the processes of heterogeneous high school learning, and allow us to further evaluate the effectiveness of this initiative. I anticipate that students may report fluid and individualized instruction as helping them to see their strengths and weaknesses, while encouraging them to persevere. The heterogeneous class, coupled with instruction that caters to those abilities, should lead students to interact with diverse peers in ways that homogenous, undifferentiated instruction cannot. As a result, I expect that minority students in the BCHS initiative will believe more in their ability, interact more with classmates and teachers, and attribute more of their academic success to their heterogeneous, differentiated classroom. By moving from homogeneous classes to challenging heterogeneous classrooms that celebrate and support student diversity, our educational system may then finally meet Federal legislation and call for innovation and reform in education. Ultimately, this will ensure that all students receive what they need to increase their self-efficacy and realize success in both the classroom and in life.
CHAPTER THREE: METHOD

Introduction

This explanatory case study sought to understand how a heterogeneous grouping initiative in an Honors Biology class is experienced by select Black students. For this research study, heterogeneous grouping is generally defined as a school initiative to address the achievement gap through creating and supporting higher-level racially and socioeconomically diverse mixed ability classes.

Research Design

An explanatory case study approach (Stake, 2010; Yin, 2011) was selected in an effort to understand the topic of heterogeneous grouping through the lens of select Black students. More specifically, this research design is an intrinsic case study in which it focused on the case itself, as the case presents an unusual or unique situation (Creswell, 2014). The heterogeneous context is a unique school initiative that not only represents a qualitatively different experience, but an academic intervention that focuses on closing the achievement gap.

This qualitative study derived meaning by explaining and interpreting the case of seven student participants’ experiences in this heterogeneously grouped Honors Biology class. First, through collecting data from students, parents, and two sets of teachers: teachers in the heterogeneous Biology class, and teachers who taught the students beforehand. Second, by developing a composite description of the seven units of analysis—the seven students. This description details how they experienced it and why they experienced it. This is consistent with Marshall and Rossman (1990) where they explain in a qualitative study, “The researcher is the primary instrument in qualitative research and relies on a variety of tools, instruments, and methods to collect and assemble data” (p. 111). As the researcher, I played an integral role in the
collection and expression of idiographic data, while remaining aware of my need to do so as objectively as possible.

The collection and analysis of data followed the tenets of Yin (2003) and Creswell (2014) by using the theoretical framework of Thematic Analysis (TA). This form of data analysis is suitable more so for understanding the complexity of the case than generalizing beyond the case. It first looks for issues within each unit of analysis, each student, and then creates interrelating themes. These themes will be further analyzed via pattern-matching, explanation-building, and time-series in accordance with Yin’s (2003) methodology. This will ensure internal validity; that the various themes and theoretical propositions are connected and explicably supported or refuted.

**Research Questions and Participants**

1. **Research Question 1**: *How do Black students experience success or failure in the heterogeneous honors program?*

2. **Research Question 2**: *What effect, if any, has the heterogeneous honors program had on student self-efficacy?*

Through purposeful sampling (Patton, 1990), seven of the Black students promoted into the school’s heterogeneously grouped ninth grade Honors Biology course, along with their parents and teachers, were studied. This criterion consists of being Black and having been placed in Honors Biology in ninth grade, despite not meeting the district’s prerequisite of completing Algebra I in the eighth grade. All students were purposely identified by their eighth grade science teacher as students that could be successful in Biology in ninth grade with the appropriate support, and as students with low GPAs and high MSAs from eighth grade. By consulting with teachers and reviewing these metrics, the seven most underachieving students
were determined and made the focal points of the case study. According to Creswell (2014), more restrictive sampling strategies with limited participants work well with case studies and may ensure that all participants experience the program being studied.

**Site**

Bay City High School (BCHS) is a large racially and socioeconomically diverse public high school in suburban Maryland. The school’s population in 2012 was 39% Black, 38% White, 18% Hispanic and 5% Asian. Overall, 43% of the students qualify for the Free and Reduced Meal (FARM) Program based on family income. Additionally, the school draws from 11 public housing communities, which are predominately Black. Of the school’s total Black population, 36% had below a 2.0 grade point average.

Conversely, BCHS has a significant number of predominately White students from families earning over $250,000 per year. Only 8% of the White student population has below a 2.0 grade point average, and this student group earned over 6 million dollars in college scholarship money in 2010. Bay City High School was one of the last schools in the United States to desegregate, maintaining separate high schools for White and Black students until 1967, a full 10 years after school desegregation became law (McWilliams, 2011). The school has a documented history of significant achievement disparity between Black and White students, and students from low and high socioeconomic backgrounds (Maryland Report Card, 2011).

Bay City High School’s latest initiative was to create and support mixed-ability heterogeneously grouped honors-level courses. The school believed that heterogeneous grouping would reduce the achievement gap by providing higher expectations of teachers and students and increasing cognitive demand and instructional rigor in the classroom. As a result, students would become better prepared for and have access to advanced coursework. Given the project-based
curriculum in place with Honors Biology, the course was identified to pilot the school’s initiative. This is supported by Colannino, Hoyt, and Murray (2004), where they describe how project based lab assignments are ideal for tapping into students specific strengths and abilities. Data from the Honors Biology pilot shall inform future decisions regarding rigorous heterogeneous initiatives.

**Procedures**

Prior to collecting any data, Institutional Review Board (IRB) approval from Liberty University was secured (Appendix A). Additionally, the written approval from the high school to conduct the study was secured (Appendix B). Student participants and their guardians were provided informed consent (Appendix C), as were the students’ teachers that contributed to the study (Appendix D).

Participants were read a recruitment script (Appendix E) and selected via the criterion type of purposive sampling. They were chosen for a clear reason. In this study, the participants were selected because they are Black, have GPAs under 2.5, high MSAs indicating material proficiency, and have been recommended by 8th grade teachers as capable of 9th grade Honors Biology despite never having completed the prerequisite Algebra I. From these students, the seven units of analysis were chosen based on the deviant/extreme typology in Patton’s (1990) methods of purposive sampling. The seven students chosen from those in the heterogeneous initiative are extreme because they represent the outliers of the outliers. That is to say, they are the biggest underachievers; the students with the lowest performance despite the highest indicators of potential. Data from participants was gathered through surveys, observations, and interviews. The data will be analyzed and recorded in accordance with case study tenets. Initial tabulations of data were converted to interpretive themes through the theoretical framework of
Thematic Analysis (TA). Following coding, the themes were analyzed via pattern-matching, explanation-building, and time-series analysis (Yin, 2011).

**Researcher’s Role**

As the researcher, I ultimately was the primary instrument responsible for collecting and analyzing data (Marshall & Rossman, 1990). The background I bring to the study includes having worked in the human services and education fields for over 15 years, beginning as a State/Federal Vocational Rehabilitation Counselor and now serving as principal at another school in Bay City High School’s district. In addition to this work experience, I have graduate and post-graduate degrees in counseling and education respectively, along with licensure in counseling, special education and school administration. As a school based administrator I have coordinated targeted interventions such as free summer and after-school academic enrichment programs, and continue to pursue research that will further the understanding and elimination of the achievement gap. Throughout this study I operated in the role of interpreter and advocate for this research. Given these potentially conflicting roles, I reflected on my professional values and biases and was sure to clearly identify them. Recognizing my desire to see this initiative succeed as it may ultimately increase access to higher level courses and achievement for all students, I utilized bracketing (Moustakas, 1994) to set aside all preconceived experiences and acknowledge my biases so that they did not interfere with my analysis.

I also had an ethical obligation which superseded obtaining any and all information. After all, the researcher must typically make a series of iterations “because of successive redefinitions of the applied problem as the project is being planned and implemented. New knowledge is gained, unanticipated obstacles are encountered, and contextual shifts take place that change the overall research situation and in turn have effects on the research” (Bickman & Rog, 2009, p.
xv). Not only does this protect from wrongfully presenting or representing certain discoveries, it also greatly strengthens the responsiveness and quality of the initiative and the case study.

Data Collection

Multiple methods of data collection were employed for this research study, to include:

Individual interviews

These were structured with open-ended questions grounded in the literature regarding the achievement gap, heterogeneous grouping and self-efficacy. Creswell (2007) states that open-ended questions help facilitate obtaining everyday life meaning of a given program. All student participant interviews were audio recorded and transcribed verbatim by a professional transcriptionist, as recommended by Creswell (2014) for qualitative studies.

The purpose of the Honors Biology student questions was to gather data pertaining to the daily struggles and successes of minority students in the heterogeneous initiative. Students expressed feelings regarding their self-efficacy and their interactions with classmates and teachers. Questions 1 through 12 were developed to account for students’ appraisals of self-efficacy, class expectations and class relations. Questions 13-17 reiterated this point, involving the student experience of success and anticipation for future endeavors (Appendix F).

Parents received the same interview questions as the students, merely tweaked to include the word, ‘child’ when referring to how and why students perceive and behave as they do relative to school (Appendix G). Certain questions had to be omitted that asked about direct experience within the classroom, as parents could not answer these truthfully. However, all questions sought to assess parents’ perceptions of child successes, failures, interactions, and self-efficacies. The open-endedness of the questions allowed the parents and students to “contribute
as much detailed information as they desire and it also allows the researcher to ask probing questions as a means of follow-up” (Turner, 2010, p. 756).

The teachers were asked in the style of the informal conversational interview (Appendix H). These are primarily questions that come from “in the moment experiences” as a means for further understanding or clarification of what is being witnessed or experienced at a particular moment (Turner, 2010, p. 755). The students’ 8th grade and current Biology teachers were interviewed toward the end of the study, so that both the thoughts of the given day and the summative thoughts of the pilot were captured. This style was suitable because it tapped into both fresh daily contemplations and cumulative concerns, and appealed to the more professional, informed mindset of the teachers. Thus, their responses were generally more dynamic and varied.

**Observations**

Each of the seven students was observed on three occasions in the classroom environment. Detailed observation data for each observation was recorded on a protocol as recommended by Creswell (2014). The template included on-task behaviors, positive interactions with students, positive interactions with the teacher and demonstration of the lesson’s objective as well as a few other observations (Appendix I).

In order to accurately record these aspects, I attempted to blend into the context so that its members will act naturally; following data collection, I then removed myself from the setting and evaluated the data objectively in order to write about it (Creswell, 2014). This was achieved by having an open, nonjudgmental attitude, by being interested in learning more about others, by being aware of the propensity for feeling culture shock and for making mistakes (Kawulich, 2005). Observations essentially functioned as ‘data logs’ with descriptive notes that summarized
chronologically the flow of events in the classroom. The deeper reflective notes focused on the process, thoughts, and conclusions for later thematic development (Creswell, 2014).

Survey

A self-efficacy questionnaire (Appendix J) was administered to the seven students. The survey was the motivation and self-efficacy subscale from Pintrich and De Groot’s (1990) Motivated Strategies for Learning Questionnaire (MLSQ). The MLSQ self-efficacy subscale is designed to measure students’ performance expectations and confidence; self-efficacy. MSLQ subscales are designed to be used in conjunction or independently in order to best meet given research needs (Duncan & McKeachie, 2005). The participants answered eight questions on a seven point Likert scale with 1 = not at all true of me to 7 = very true of me (Pintrich, Smith, Garcia, & McKeachie, 1991). The MLSQ has also been used successfully to measure student self-efficacy in previous studies (Peklaj, Zagar, Pecjak & Levpuscek, 2006; Wang & Lin, 2007) and validity studies show the MLSQ does indeed measure self-efficacy and achievement (Usher & Pajares, 2008). The mean scaled score for the MLSQ self-efficacy subscale is 5.17 with a standard deviation of 1.14 and there is a .41 correlation to a student’s final grade (Pintrich, Smith, Garcia & McKeachie, 1991). MLSQ questionnaire data was later used in conjunction with interview and observation data to aid in the understanding and describing of the participants’ self-efficacy.

The parents and teachers were also administered surveys. The teachers received the Teacher Self-Efficacy Survey (Hoover-Dempsey, 2002) to assess their belief in themselves to successfully impact the achievement gap through the heterogeneous initiative (Appendix K). The survey administered to parents (Appendix L) is the Parental Self-Efficacy for Helping the Child Succeed in School Survey (Walker, Wilkins, Dallaire, Sandler & Hoover-Dempsey, 2005).
These surveys assessed parental and teacher behavior and beliefs regarding children and students. More specifically, they addressed how parents and teachers believed in their abilities to be positive influences in their children and students’ lives. Because young people often model behavior and beliefs off of others around them, answers to these questions were integral. As the literature has already revealed, students are likely to model their behaviors and belief systems off of those in their immediate and sustained environments. If students are surrounded by teachers with low self-efficacy, and then return home every day to parents with low self-efficacy, students are more likely to have low self-efficacy. Conversely, an environment of high self-efficacy is likely to boost student self-beliefs, and thus, academic achievement.

Data Analysis

In general, the analysis relied on the propositions that led to the case study by employing the theoretical framework of Thematic Analysis (Creswell, 2014; Yin, 2003). In this case, the proposition is that the school initiative will qualitatively improve learning for minority students. Initially, the data was read, line by line, and then divided into meaningful analytical units. These units were then coded through symbols, descriptive works and category names. Whenever a meaningful segment of text was found, a code was assigned. This process continued until all of the data had been coded. Data was then assigned themes inductively, or as the analysis took place. Upon all the data being collected and coded, the following analysis was conducted:

Pattern-matching

This technique compared the empirically based pattern with a projected one. When the patterns match, the internal reliability of the study improves. Of course, the comparison between the predicted and actual pattern might lack quantitative criteria. Thus it is likely to be very interpretative in nature.
Explanation-Building

This is an iterative process that begins with a theoretical statement, refines it, revises the proposition, and repeats the process from the beginning. This is known to be subject to problems for the investigator. One of these problems is a loss of focus, although keeping this in mind protects the investigator from such issues.

Time-Series Analysis

A technique in experimental and quasi-experimental data analysis. It is possible that a single dependent or independent variable could make this easier than pattern-matching, but sometimes there are numerous changes in a variable, making certain temporal points unclear. However, it can be effective in offering insights into the change in behaviors among student, teacher, and parent thoughts, emotions, and behaviors regarding the school initiative.

Trustworthiness

In order to support the credibility and dependability of the study, the following strategies were utilized:

Triangulation

Data was collected from multiple sources, to include individual and group interviews, observations, surveys and document analysis. Through this varied means of data collection, themes and patterns became apparent and the evidence was able to be corroborated.

Reflexivity

As the researcher I provided detailed background information and clarified my philosophical beliefs. This promotes research transparency and an understanding of how my interests, motivation or value system may have impacted data collection and analysis.
**Member Checking**

Individual interview data was presented to the participants collectively for review and comment, which allowed the participants to critique and provide additional feedback on both data and interpretation. This facilitated further discussion and additional data collection, which enhanced the overall study results.

**Expert Review**

Interview questions were presented for expert review prior to formal participant interviews. This was done by a veteran Black teacher with over 10 years of experience with the culture of the school and community. Initial study results were shared with an expert in qualitative research methods to be corroborated.

**Prolonged Engagement**

Interview and observation data was collected on multiple occasions. Through 90 minute long classroom observations on three occasions, the trustworthiness of observation data was significantly enhanced. Likewise, participant interviews and member checking were designed to last 30-45 minutes. These safeguards helped ensure the accuracy and credibility of the data obtained.

**Informed Consent**

The participants and their families were provided with informed consent and participants were not exposed to any harm as a result of participating in the study.

**Confidentiality**

Co-researchers (Moustakas, 1994) were not referred to by name in the study and were not identified as participants in a study to their peers during classroom observations or at any other point in the study.
Data Storage and Usage

All data collected has been maintained under a password protected computer file and locked file cabinet. The student participants’ anonymity has been maintained throughout this study.

Ethical Issues

A potential ethical issue associated with this study was that student participants may not have wished to be identified by name in the study or by others in the school as active participants in the study during the data collection phase. As the researcher I accounted for this by providing confidentiality and informed consent to the participants as described below.

During this research study, I was very careful to consider the rights of all involved in the study. In order to preserve privacy and confidentiality, names were not be used. Students, parents, and teachers are not identified on an individual basis and are instead referred to in the following fashion: Teacher A, Parent B, Student C. By following American Educational Research Association (AERA) guidelines and receiving approval from the university’s Institutional Review Board, ultimately allowed me to enjoy a more honest, ethical, and accurate study.
CHAPTER FOUR: FINDINGS

This chapter describes the data collected from the interviews, the questionnaires, and the observations. Specifically, data was derived from seven open-ended interviews grounded in the literature regarding the achievement gap, heterogeneous grouping and self-efficacy (Appendix M). Data was gathered through similar interviews posed to parents (Appendix N), and through a different informal conversational interview posed to teachers (Appendix O). As for the questionnaires, the seven students individually completed self-reports modified from a self-efficacy subscale of Pintrich and De Groot’s (1990) Motivated Strategies for Learning Questionnaire (MLSQ). Parents and Teachers were also assessed on their levels of self-efficacy using a modified questionnaire. Finally, observation protocols assessed the students separately, and included, but were not limited to: on-task behaviors, positive interactions with students, positive interactions with the teacher, and demonstration of the lesson’s objectives (Appendix P).

This particular explanatory case study sought to discover the ways in which a heterogeneous grouping impacted self-efficacy and academic performance for a group of Black students in an Honors Biology class. The underlying assumptions relied heavily on self-efficacy as a social cognitive theory wherein belief in one’s ability impacts choice of activities and effort, engagement in behaviors necessary for attaining goals, academic interests and motivations, and growth in cognitive competencies and achievements (Bandura, 1997). From the data, multiple primary themes emerged. These themes came from inductive analysis as outlined in Chapter Three. All themes were derived based on their relevance to the research questions:

1. How do Black students experience success or failure in the heterogeneous honors program?

2. What effect, if any, has the heterogeneous honors program had on student self-efficacy?
Based on the theoretical constructs of Bandura’s Social Learning Theory and Gardner’s Multiple Intelligence Theory, several propositions informed the qualitative study. Themes were found that corroborated these propositions, and thus further supported the effects of academic initiatives on student self-efficacy (see Table 1). All propositions and themes were then situated in regards to the overarching concept of the achievement gap.

Table 1:

Propositions, Themes and # of Participants Expressing Themes

<table>
<thead>
<tr>
<th>Propositions</th>
<th>Themes</th>
<th>Participant Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>The rigor of an Honors class will improve student self-efficacy</td>
<td>* Students express a sense of pride and belonging</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>* Students exhibit an academic self-concept that is broader and more ambitious</td>
<td>6</td>
</tr>
<tr>
<td>The student-teacher rapport will facilitate student self-efficacy</td>
<td>* Teachers offer additional assistance in positive, trustworthy fashion</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>* Teachers allow atypical behaviors such as headphones, off topic discussions, and movement</td>
<td>7</td>
</tr>
<tr>
<td>Heterogeneity will improve student self-efficacy</td>
<td>* Students express improved learning in kinesthetic labs</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>* Students form adaptive relationships with diverse (white) students</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>* Varied instruction modalities benefit students lacking prerequisites</td>
<td>7</td>
</tr>
</tbody>
</table>
Participants

The current study was highly unique in that it assessed multiple sources of qualitative data associated with seven Black students in Honors Biology. In solidifying an understanding of the school experience, surveys and interviews were conducted with all students, teachers, and parents involved. Table 2 is a representation of student participant results on the Motivated Strategies for Learning Questionnaire (MLSQ). According to the MLSQ results, all seven student participants displayed above average self-efficacy scores compared to the MLSQ self-efficacy subscale scaled mean score on 5.47 (Pintrich, Smith, Garcia, & McKeachie, 1991), as a result of the ongoing initiative (see Figure 1). Furthermore, both parents and teachers also indicated a high degree of self-efficacy on their respective surveys (See Table 3 & Table 4).

Figure 1:

![Student Participant Average Self-Efficacy Graph]

Student Participant Average Self-Efficacy

Table 2:

*Student Self-efficacy Survey*

<table>
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<tr>
<th>MLSQ Questions</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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Table 3:  

**Parent Self-efficacy Survey**

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Table 4:  

**Teacher Self-efficacy Survey**

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Parent and teacher participants mostly expressed confidence in their ability to understand and help their children and students, respectively. Although parents displayed only middle efficacy scores for **Question 2**: *I don’t know if I’m getting through to my child*, they almost unanimously agreed strongly on **Question 7**: *I make a significant difference in my child’s school performance*. This suggests that parents may not know if they are impacting their child’s overall
behaviors, but at the very least, see that their child is responding academically to efforts. Parents, by and large, were involved and committed to their children’s successes. Throughout their interviews and questionnaires, parents indicated that they believed in their children. Although they played a role in that success, parents also recognized the integral role of the school environment. Furthermore, parents recognized their children’s own internal motivation systems. As a whole, parents seemed to improve in self-efficacy concomitant with student self-efficacy improvements.

Just as parents believed in their own abilities, so too did teachers. Teachers strongly agreed with **Question 1**: *I am making a significant educational difference in the lives of my students.* They also strongly agreed with **Question 2**: *If I try really hard, I can get through to even the most difficult and unmotivated students.* However, teachers seemed to contradict this response with later responses to **Questions 8 & 9**: *I am uncertain how to teach some of my students* and *I feel as though some of my students are not making any academic progress*, respectively. For question 9 especially, all three high school teachers expressed a definite level of agreement. Due to the contradictory nature of these responses, it is important to consider the unique nature of the initiative. In many ways, teachers are learning just like students. They are learning how to adapt dynamically, how to control the classroom, how to cater to special needs, and how to logistically organize school and afterschool activities to benefit the majority. It is an ongoing process, and not every student will immediately excel. That said, student and parent appraisals corroborate the motivating, challenging, and self-esteem building aspect of the heterogeneous, Honors Biology initiative.

In terms of teachers, each of the three Honors Biology teachers utilized their own unique approaches to the different students. However, there remained a consistency across all Biology
classes, as teachers actively collaborated over content, materials and strategies. Still, each teacher brought a different ‘feel’ to the initiative. Three daily observations of each of the three classrooms developed a clearer picture:

**TEACHER A**

Teacher A was a female in her seventh year of teaching, with an undergraduate degree in Science and graduate degree in Education. She listed reading, watching movies, walking the dog and spending time with kids as her primary activities outside of school. Teacher A presented with a nurturing, compassionate, and positive approach. Patience characterized Teacher A’s many interactions with all students in the class, but this trait was consistently observed with participant Students D & E. Although there were multiple instances of off-task and atypical behaviors among participants, Teacher A successfully re-engaged students each time. During one exam review, participant E emitted a loud “Ooooo” in apparent celebration of a correct answer.

Throughout the classes, Teacher A allowed smiles and occasional music listening for Students D & E. The students appeared to understand the expectations, and always turned off the music when the teacher spoke.

Specific to Students D & E, Teacher A developed an adaptive approach. Student D enjoyed dancing at her desk, but because she remained engaged and responsive, Teacher A permitted the behavior. Meanwhile, Student E frequently asked to leave for the restroom and the nurse. Teacher A managed these breaks by delaying them until a certain milestone was reached, such as work completion or lecture conclusion. When Student E asked off-topic questions—“can you have a brain transplant”—the teacher answered the question and smoothly connected the student’s thinking to the current lesson.
Teacher A also seemed to demonstrate an understanding of group dynamics. The seating arrangement varied regularly and the teacher often used randomized methods such as drawing straws to form groups. Within groups, the teacher instructed students to occupy specific roles. Students selected these roles in order to suit their personal comforts and modalities. Once groups were established, members made use of high-level technology, interspersed with low-tech mini dry erase boards. Throughout the entire process, Teacher A fulfilled multiple roles. To keep students on course, the teacher used gentle shoulder touches, intonations, and sometimes a simple look. By and large, students enjoyed the teacher, calling the teacher “Teach.” Regular ‘high-fives’ abounded during and following successful answers and work completion. The teacher clearly functioned as instructor, mediator, and motivator.

TEACHER B

Teacher B was in his second year of teaching, but also student taught at the school for a semester before joining the faculty. He holds a bachelor degree the field of science and graduate degree in Education. Teacher B presented with an energetic, kinesthetic, and enthusiastic approach to the class. Teacher B instructed Students B, C & G, and exhibited a willingness to indulge atypical behaviors in exchange for trust and investment. Music and off-topic conversations were the primary behaviors considered atypical. The teacher’s energetic method transferred to students, who were encouraged to move around and interact with peers during lab work. When not in lab, students were allowed a degree of latitude in their physical movements. Students were also permitted to speak out loud, especially in situations where they were exclaiming their success. In such instances, students yelled “I’m done!” and called out answers to teacher questions.
When organizing the class, Teacher B relied less on randomization than Teacher A. Teacher B favored groupings based on formative assessments, as well as diversity-based groupings. In cases of misbehavior, the teacher typically employed humor and proximity control; physical contact was used less frequently. The teacher also changed the seating arrangements weekly to keep things ‘fresh.’ Teacher B tolerated jokes and playfulness insofar as moments of brevity ensured longevity. In other words, periods of humor kept the students motivated for the entire 90 minute period. Technologies such as SMARTboard, docucamera, videos, and virtual labs also ensured that student minds were stimulated. Overall, the class—as an extension of the teacher—was earnest and energized.

TEACHER C

Teacher C was a male in his second year of teaching, and also held an undergraduate degree in science and graduate degree in education. He listed video-gaming and stand-up comedy as his hobbies. Teacher C instructed Students A & F and presented with a humorous, proactive, and open approach to the class. The teacher often allowed joking, among both students and teacher. Students were encouraged to ask questions and think harder, and Teacher C readily anticipated student needs and desires. Although students wore ear buds throughout the class, they displayed responsive behaviors such as note-taking, responding, and timely task completion. Occasionally students engaged in off-topic conversations during group transitions, but readily returned to focus once groups formed. Teacher C remained mobile throughout to accommodate the highly social nature of this class.

The teacher was also very encouraging. Vocal reinforcements such as “You can do it,” “Go ahead,” You know it,” and “You always know the answer” were prevalent. Not only did the teacher reinforce curiosity and participation, but the teacher also reinforced respect. Students
routinely used words such as “Please” and “Thank you” as well as proper names. The class appeared to feel safe and secure, as evidenced by the many risks students took in answering questions. The teacher minimized insecurity by encouraging students to inquire: “Ask me a question.” Moreover, the teacher was quick to encourage continued questioning, despite past failures. When students answered incorrectly, the teacher allowed humor to defuse tension. Students often reacted jokingly to their mistakes with “Maybe I need to read the book or “Don’t listen to me.” In most cases, the teacher laughed along with them.

The general atmosphere of the class was harmonious. As such, participants focused the most on tasks that included interpersonal skills, such as lab and worksheets, as opposed to less interactive tasks like lectures and videos. Although Black students gravitated to one another, all students appeared comfortable regardless of grouping. Occasionally, males sought interaction with females outside these groupings. Even so, the teacher was prompt to refocus off-topic behaviors, often through gestures and strong eye contact. When students were not paying attention, Teacher C called on them personally to bring them back to task.

In terms of groupings, Teacher C’s class was similar to the classes of Teachers A & B. The seating was varied, assessment-based, and diversified. Teacher C relied on the completion of games to keep a competitive fire inside students. Performing well was tied to feelings of capability and hard work. The teacher routinely used humor to motivate different groups: “You’re going to lose to these guys?” or “I guess the girls are the only ones that understand.” Teacher C also knew how to address group needs. The teacher remained proactive: “Need a new pencil, here you go,” “You can use the bathroom once you are finished,” “Here, I have some paper for you”, and “Go ahead and ask me what you don’t understand.” Overall, Teacher C’s
classroom was conducive to learning. It facilitated student self-efficacy in a fun yet focused fashion.

Of course, teachers had to understand self-efficacy before they improved it. This meant that teachers were charged with the special task of getting to know each student and participant individually. By establishing this rapport, teachers positioned themselves to effectively change student behaviors. Each student varied depending upon background, learning style, and perceived ability:

**STUDENT A**

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<tr>
<th>GENDER</th>
<th>Algebra I Complete</th>
<th>MSA Science Raw Score</th>
<th>MSA Science Proficiency Level</th>
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Student A presented with the lowest MSA raw score of the participants and tied for the lowest cumulative GPA of the students. However, this student carried high expectations, believing that he would receive a B or A by the end of the course, despite having a C at time of interview.

Student A explained that though he expected positive results, he wasn’t sure if he belonged. Quizzes and tests posed a special difficulty for this student, but could be helped by asking other students and teachers. Meanwhile, Student A expressed an interest in the labs, as they also presented an opportunity for Student A to flourish. This student recounted one lab in particular which required the groups to count CO2 bubbles. Student A reported that labs such as these, kinesthetic, provided an opportunity for movement and multisensory learning.

However, Student A did report certain challenges to self-efficacy. Despite tying for the highest self-efficacy score average of 6.75 on the Motivated Strategies for Learning
Questionnaire (MLSQ), Student A was lacking in pride. This belief stemmed from the fact that peers often did not ask the student for answers. This was also complicated by Student A’s perception of some peers as less-than-serious about school:

*The behavior like, some students they don’t pay attention and I’ll be telling them to pay attention. They still don’t do it so I have to move to a different seat to pay attention.*

This said, Student A still presented as confident and capable, expressing an increased desire to pursue honors courses and college. In and of itself, this indicates that the heterogeneous Honors Biology initiative has opened the student’s eyes (and mind) to possibility—an important first step in closing the achievement gap.

**STUDENT B**

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Like Student A, Student B presented with a 1.9 cumulative GPA, and the same middle school science teacher. However, Student B performed marginally better on the MSA science exam, but tied for the second lowest MLSQ score, with a 6.375. When interviewed, Student B admitted to having never heard of the achievement gap. Furthermore, Student B admitted that he did not feel as if he belonged. Due to the hard work and frequency of tests and quizzes, Student B was not sure if he could handle the workload, but freely explained that the teacher did believe he belonged.

Student B was a classic kinesthetic learner. He explained how he performed well on Labs (with As and Bs) but only garnered Ds and Fs on other classwork. Despite these performances, Student B displayed the self-efficacy to expect an A. He admitted to having less time for free
time, and often spent his extracurricular hours working with the teacher afterschool. Student B even went as far as to recognize his own bad behaviors, in all classes. The student quickly reeled off his bad behaviors:

_Talk when my teacher’s talking, don’t take notes, not listening, playing around too much._

Of course, what the student views as ‘bad’ may simply be a particular learning preference. He learns better when the same concepts are explained through laboratories where talking and moving is encouraged. Student B may cite ‘bad’ behavior, but he certainly recognizes the importance of staying on top of coursework. Not only does he study more, but he aspires more too. Despite having the second lowest self-efficacy scores on the survey, Student B showed marked improvement in confidence:

_Researcher: Did you think you were going to attend college before you went to high school?_

_STUDENT B: No_

_Researcher: Do you think you would get into college now?_

_STUDENT B: After I attend high school, yes._

**STUDENT C**

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Student C presented with the highest MSA Science score of all the participants by some 24 points. However, despite this higher score, he also presented with the lowest score on the MLSQ with a 6.25. His GPA was an even 2.0 and he shared his Biology teacher with Students B & G. Like others, Student C had never heard of the term achievement gap and did not recognize any preferential or exclusionary treatment toward minority students. He reported having made
new friends and having continued friendships. He was also enrolled in Honors History, but found Honors Biology the most challenging.

Similar to Student B, Student C preferred labs, but not simply because they may be more fun or lively: *Because you actually know stuff. You get to do it instead of the teacher just talking up there. If the teacher’s just talking up there, I don’t get it right, but if a teacher makes us work together in the lab, I understand it more.*

Student C had a D in the class but expected a C or B. He described himself as a good student and explained that he stays after when he knows his grade is down, but will usually not stay after school, even for Honors History, if the grade is satisfactory (C or B). Student C likely considered himself a good student because he put in the effort when it was necessary, but knew when to rest and enjoy himself. He appeared quieter than others, and reported asking his teachers if he could listen to music. Music helped him to focus and tune out distractions from other students. He reported that all of his teachers allow him to listen to music because they knew he would do his work quietly. However, Student C reported that his preferred learning style was ‘to do it’ instead of listening to teachers ‘just talking up there.’ With the highest MSA science score, Student C was certainly capable. He merely needed the right stimulation, and it appeared that his teachers—by permitting atypical behaviors, afterschool help, and lab opportunities—were targeting those needs.

**STUDENT D**

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Student D presented with the second highest MSA score, a 2.0, and shared the highest MLSQ score of 6.75 with two others. As the only female participant, Student D was a special case. She had to coexist alongside a majority of minority males, and was enrolled in a class that was stereotypically associated with male performance (i.e.; ‘hard’ sciences). Of course, studies show that male minorities are underrepresented in honors courses compared to female counterparts (Ford, Grantham, & Whiting, 2008), so this may have been less of an issue than believed. For Student D especially, any gender disparities or stereotypes seemed irrelevant. She was confident and hard-working, believing that she would earn an A.

Student D was also slightly different than others in her learning preference. She was a strong worker but didn’t necessarily enjoy labs like the others. When asked about group projects and experiments, she said simply, “They are fine.” However, when asked about homework, quizzes and tests, she explained happily: “I ace my quizzes and tests.” Although Student D later admitted that she enjoyed labs, she also admitted that she enjoyed everything. She was self-motivated and had always thought about entering honors classes, even in early middle school.

Like numerous honors students, Student D did find all the homework challenging and usually stayed after school to get it all done, more so than for any other class. Still, Student D was sure of herself, and believed wholeheartedly that she belonged. More than other students, Student D just seemed happy to have the opportunity to learn advanced material. When asked to name things she did and didn’t like about the course, she paused and said only: I like it.

**STUDENT E**

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81
Student E presented with the third highest MSA score, shared the highest MLSQ score of 6.75, and had a 2.0. He was an interesting case, in that despite having a rather high MLSQ score, he did not feel as if he belonged. Although he recognized that teachers believed he belonged due to his ability to complete the work, he did not personally see any value in honors enrollment. A self-described average student, Student E was disinterested in science in general. He admitted that he felt the same way in middle school.

Seemingly, Student E was aware that he could perform well or satisfactorily if he did what he had to, but he wasn’t too keen on this. Perhaps due to his history of inadequacy in sciences, he was convinced that he just wasn’t science material. Moreover, he did not attach much significance to the idea of ‘honors’ anything, but did readily admit that “[science] labs are cool to me.” This said, Student E still struggled to see the significance of pursuing something that does not interest him. Although capable and expecting a C or B in the class, Student E was seemingly unmotivated to truly excel. He did not expect to take future AP classes and admitted that he would switch out if placed in one: I don’t see it being something special. I mean, it’s supposed to be, but I don’t see it like that.

Student E explained that his grandmother was even surprised to hear that he was in an honors course, because she ‘didn’t know him like that.’ As it seemed, Student E’s family may have been removed from his academics, explaining a part of his lack of external motivators. When pressed on honors science in particular, Student E again echoed his inability to see it as significant:

I don’t think it helps me in any way… I don’t want to be a scientist. I don’t want nothing to do with science.
Student E stated that the only reason he paid attention was because Biology was a core class. In other words, Student E did care to an extent, insofar as his grades were adequate. He also admitted that he thought about going to college “a lot,” so getting decent grades was a part of that. However, he was quick to point out that he had not changed as a result of the rigorous class. Although he stayed after every Tuesday for his other classes, Student E believed that science simply didn’t come easily to him: “there’s nothing really wrong with the class, but I don’t click. It’s not my specialty; I don’t like it.”

In the end, Student E presented as capable and intelligent, albeit somewhat insecure. Interestingly, his higher MLSQ scores would indicate a stronger self-efficacy, but Student E seemed to do a lot of relegating. He was hesitant to state that he belonged in rigorous courses, and quickly admitted that he was “supposed to be standard.” Overall, he placed the burden on others to determine where he was “supposed to be”:

_I don’t want to struggle in the class if I don’t feel like I’m supposed to be in it. I know I’m supposed to be standard, but I don’t know about AP classes, unless I’m supposed to be in it._

Student E’s abilities may lie in other subject areas or topics, or his abilities may simply go undernourished in science classes, leading to a disinterest in science in general. Teachers and parents can help by understanding Student E’s experiences inside and outside the classroom, and by talking more intimately with his previous science teachers.

**STUDENT F**

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Student F was similar to Student E in temperament and attitude. He claimed to see no inherent value in honors classes, but admitted that his mom seeing honors on the report card was “pretty cool though.” Like others, Student F did not feel any differently treated and regarded himself as an average student, despite expecting “at least a B.” Similar to others, Student F also enjoyed the hands-on aspect of labs, and was the first to admit that he did not like looking information up on the computers. This differed from the other complaints of completing homework and listening to the teacher talk.

Student F may have claimed that he didn’t care that much about being in the class over a standard class, but he definitely put in the work. He also explained that he stayed after school a lot, and that the class had made him more confident in attending college. He was an interesting case, because he actually stated that honors and standard were no different:

Pretty much everything’s the same as my other classes.

He was also ambivalent when explaining what he liked, saying, “I like everything… I don’t like everything.” This seemed to reflect a tug-and-pull force among minority students. Because the class was more challenging, it offered the student the stimulation that he likely craved. However, increased challenge meant more work. Although the student’s curiosity may have been triggered, he was also tested and pushed more than he was used to. This may have initially created unfamiliarity and uncomfortableness. However, most students seemed to be learning the truism: the best things in life are worth fighting for.

STUDENT G

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</table>
Student G had the highest GPA of the participants and presented as optimistic, outgoing, and goal-oriented. He was one of the few to openly admit that he shared his reports, grades, and test scores with family members. Student G also stated multiple times that the honors course improved his confidence and gave him the fight he needed to take on potential AP challenges.

Student G identified one of his prime academic motivators as football. As long as he maintained his GPA, he could engage in this important extracurricular. This was a main reason for his staying after school 1 hour per week. Student G also readily identified key differences between honors and standard, pertaining especially to interactions:

_That’s in Honors Biology, the teacher can’t show you how to do it. He can show you how to do it, but he can’t tell you the answer. Standard classes you have a partner that helps you out._

Even so, Student G said that he knew he could do it. He expected to improve from a C to a B, and was more than happy to share his contentment with the class. Whereas others described the honors course as containing more work, Student G saw it as an opportunity for self-improvement. “I can learn a lot more stuff,” he explained. He even highlighted strategies that have helped him, such as note-taking. Overall, Student G showed that he is forward-thinking. He did not dwell on failures or difficulties. He was motivated to achieve, and looking to the bigger picture:

_I feel good about going to college now. I know it’s interesting and you want to learn stuff when you go to college._

**Results**

In terms of the thematic analysis of the qualitative data, important themes emerged. Data from student participant interviews were validated through member checking with the participants as a group (Appendix Q). Each one of the themes was tied to the constructs of
Bandura’s Social Learning Theory and Gardner’s Theory of Multiple Intelligences. In short, each theme coincided with both the students’ individual experiences and collective experiences within the unique context. The pairing of ‘traditional’ Honors Biology students with the selected participants served to enhance the academic experience of the participants. Moreover, the participants enjoyed increased self-efficacy, ensuring that they believed more in their own abilities and worked harder to achieve. By instilling in these participants a belief in their potential, the study exemplified the benefits of mixed instruction modalities and rigorous curriculum. The seven Black students proved that they could be confident, hard-working, and successful in a supportive and challenging classroom environment.

The following overarching themes and supporting subthemes elaborate on these findings:

**Theme One: Rigor Improves Self-efficacy**

The data revealed that as a result of their promotion and participation in a rigorous honors class, student participants’ feelings of self-efficacy increased. This was directly supported by the two subthemes:

**Sense of pride and belonging.** Almost all students expressed a sense of pride and belonging in the heterogeneous Honors Biology course. Although they did not have the prerequisites to be in the class, once a part of the initiative, participants reported that they felt no different than their peers. They attributed positive outcomes to a good work ethic, and truly believed that they could achieve just like their White classmates.

When asked about their ability to achieve, students echoed one response:

*Yeah, it makes me think when I have a low grade; it makes me say ‘I can do better than that.’*
In this sense, students were happy to work harder because they knew what good could come of it. They recognized that they now had the ability to pursue further opportunities in other rigorous courses like AP classes and college. By and large, participants expressed not only a pride in their self-ability, but a willingness to exhibit that pride outwardly. As a result, many students reported showing their grades and marks to parents and family members. Clearly, pride in newfound ability extended beyond the classroom. Self-efficacy notably improved.

Teachers and parents also expressed a feeling that the students belonged. Teachers found that they had a good understanding of their students. Whether middle school teachers or high school Honors Biology teachers, the teacher participants stated that they knew who belonged and who didn’t. These claims were supported by the study’s main fact: middle school teachers were able to recommend students for a study who then flourished under the tutelage of high school teachers. As one teacher described:

*I always believed in my students. Sometimes there are things beyond school that keeps them from learning, but in my class, when they are with me, they all learn.*

The parents also enjoyed seeing the sense of pride and belonging in their students, and experienced their own. Although some parents admitted knowing little about the initiative, others were confident that their children had always belonged. Some saw the subsequent success in the class as confirmation of what they had always believed:

*Finally! Well, I was surprised but he has always been smart. Just not good in school like he should be though.*

Classroom observations also revealed an atmosphere of belonging and unity. Students routinely interacted with peers of other sexes and races. They maintained positive interactions with the teacher, and showed no qualms about asking questions and exclaiming answers.
Participants clearly exhibited an ease and confidence, knowing that they could be themselves and still be accepted and perform well in the class.

**Improved academic self-concept.** Students expressed a broader and more ambitious academic self-concept in the honors class than before. Again, they expressed a belief in achieving in any rigorous class, so long as they put in the effort. Participants who were once unsure of their potential now felt that the honors class prepared them to be ‘college material.’ They realized that being college material was as much as a mindset—self-efficacy—as it was a matter of performing academically. They also realized that this mentality differed from the one they had carried with them in less rigorous classes:

*If it’s honors, you gotta work. And standard you just chill. Chill. It’s easy.*

In short, the self-concept of participants changed after being exposed to an honors curriculum and heterogeneous class. Students understood that they were not limited by their lack of prerequisites. They realized that they each had unique skill sets, and that by embracing those distinctions, students had the opportunity to excel.

Teacher and parent participants also expressed evidence of an improved academic self-concept when interviewed. Parents generally described an increased willingness in their children to pursue more rigorous courses and college opportunities, or a newfound willingness to do so. In most cases, parents described that their children were doing well, with even some Honor roll performances. However, parents did find certain aspects of the rigorous class problematic:

*Homework seems too much, but teacher is nice.*

Even so, virtually all parents believed their children were better students as a result. When it came to teacher perceptions of academic self-concept, these findings were corroborated. The high school teachers especially have found that more and more students are stepping up to
the challenge with only a small percentage of participants ‘shutting down’ under the increased rigor. In fact, many of the teachers reported a new student drive to pursue honors classes, even outside of the sciences:

*I have even had many of my students with disabilities ask to be in honor classes the next year.*

Another teacher noticed the overall attitude change, as well as specific scores on tests and assignments:

*I think overall it has been positive. Some students shut down because it was difficult. Behavior showed a real improvement when compared to standard level classes in year’s past. Scores overall went up!*

Behavior improvements coincided with increased academic self-concept. Observations revealed that students engaged each other and their teachers in context-dependent fashion. When preparing for labs or experiments, students were more receptive to formal language. Participants readily answered questions, whether wrong or right, and worked alongside others to complete work. Students exhibited an interest in learning and showcasing that learning. Although off-task behaviors occurred, they were often modulated by teacher-guided inquiries and thought exercises. Students learned to behave accordingly, depending upon the day’s activities, lesson plans, and groupings.

**Theme Two: Student-Teacher Rapport**

The data supported a second theme, which was the unique and beneficial relationship between the students and the teachers that facilitated student success. This theme is further explicated in the following subthemes:
**Positive and trustworthy.** Observations and interviews revealed a very beneficial relationship between participant and teacher. Students agreed that they could approach teachers with questions and concerns, and because they felt on par with other students, they didn’t fear seeming stupid when asking these questions. Students believed that teachers genuinely cared about them, and all of the students reported visiting the teacher after class for additional help. By and large, participants were more willing to take initiative and persevere. Students worked alongside teachers to prepare for quizzes, tests, and upcoming lessons. They also consistently completed their homework.

When teachers felt that students were dealing with external issues, the teachers sought additional information. Teachers felt obligated to self-educate along the lines of student socioeconomic status, domestic life, and extracurricular activities. This knowledge effectively positioned teachers to more closely address external problems contributing to academic difficulty. Said knowledge also further contributed to trust and positive interaction.

One of the most salient aspects of the entire experience was the obvious harmonious relationship between student and teacher. Teachers and parents also shed light on this important learning foundation. Almost all parents interviewed cited the teacher as the most important part of the experience for their children. They also shed light on the increased academic drive in their children as a result of the teachers’ openness:

*He just loves his teacher. Stays after school even and does homework. Mostly good stuff, positive.*

When it came to the teachers in assessing the dynamic, these educators also reported a strong relationship. Almost all of them expressed a confidence in their ability to address their
students, whether it is internally or externally by learning about home life, extracurricular, and the like. One teacher explained the extra effort sometimes required:

_You talk with them, call home, try to see what is getting in the way. Can be hard though, takes time, getting to know what is going on with them, where they are..._

Of course, even if teachers found this hard at times, they didn’t let that stop them. Of the most important aspects of improved learning and self-efficacy, teachers echoed “student teacher relationships,” “opportunities to learn or demonstrate learning” and “environmental factors.” In short, successfully teaching students stemmed from an understanding of student behaviors and attitudes. If teachers could understand how students functioned in and out of school, learning improved significantly.

Classroom observations indicated that students generally enjoyed interacting with their teachers. Teachers maintained warm and welcoming dispositions at all times. They greeted each student by name with a smile before inviting them into the classroom. Students were also able to joke with teachers during “code shifting” of formal and informal interactions. On several occasions, teachers prompted relevant discussion by informally asking off-topic but science-based questions. Some students would ask the teacher to come help, to which the teacher responded: “ask me a question.” Although the learning environment was fun and varied, the teachers made sure to keep students on task. Participants knew that answers would not simply be given to them.

**Allowing atypical behaviors.** The nurturing and supportive relationship among students and teachers was one that had its share of exceptions. Teachers tolerated behaviors that were normally tolerated only in non-honors settings. Such behaviors included listening to music
through headphones, moving around the room, and engaging in off-topic conversations. In general, teachers utilized patience, support and a proactive/reactive approach to lessons and activities. They learned to regard students as individuals with their own needs, desires, and personal interests. Due to this more intimate relationship, teachers and students created clear boundaries. In other words, they knew when to joke around and when to get serious. Moments of brevity allowed students to offset the stress induced by the increased rigor of the honors class. Teachers understood this process as critical to maximizing performance, so they allowed it. All in all, students and teachers shared an understanding of the importance of hard work and easy play. This understanding, in large part, made the classroom conducive to learning.

Classroom observations indicated that students were more than happy to work as long as certain exceptions were made. Although the atmosphere occasionally seemed frenetic, the teachers were always able to refocus the class. Moreover, teachers controlled students through a combination of informal prompts and formal commands. Behaviors managed by the teachers included: bathroom breaks, cross-room movement, pencil-sharpening, referencing neighbors for answers, exclaiming “I’m done,” calling out answers regularly, off-topic conversations, listening to music, and drumming on desk. Overall, teachers tolerated non-traditional honors behaviors in exchange for the trust, effort, and investment of the class. Teachers typically employed humor and proximity controls to bring students back to task. All students demonstrated an awareness of explicit classroom routines and norms. Both teacher interactions and peer-to-peer accountability measures sustained these norms. When particular students misbehaved, the teacher invited them to work at the teacher’s station. Throughout all classes, teachers exhibited high energy, enthusiasm, and movement.
Teacher and parent reports also supported these empirical findings. Although parents were not in the classroom to witness atypical behaviors, they continued to express satisfaction with the teacher. One parent reported that his child stays after school significantly more now, and continues to believe that a teacher being adaptive is the main reason. The teachers also recognize the incredible importance of understanding not just the student, but the person. In order to connect, teachers admit that they have had to change their game:

*I have had to be on top of my game and meet the students where they are, with ability, learning styles, more work but it can be done.*

This is important because it means that teachers see beyond the grades and the test scores. By learning a student’s preferences, interests, and intelligence profiles, teachers are better able to counteract future issues. Moreover, teachers are better able to foster strengths and improve noted weaknesses. This is what not only learning, but personal growth, are all about.

**Theme Three: Heterogeneity Improves Self-Efficacy**

The data revealed that the Honors Biology initiative was not only heterogeneous racially, but also in learning styles and instructional modalities. The following subthemes all support the broader theme that this dynamic heterogeneity all played a role in increasing the student participants’ self-efficacy.

**Kinesthetic Labs Improve Learning.** Students not only enjoyed hands-on labs and experiments, but they also learned more as a result. The main struggle students reported was remembering information for tests and quizzes, but kinesthetic labs helped. Five participants reported knowing their learning style, but all students indicated that the freedom to interact, move around, and use trial and error made Biology experiments especially meaningful. Students also voiced their interest in group projects. The ability to express and internalize learning
through interaction seemed to be important to all participants. Classroom observations of labs supported this. Not to mention, labs added regularity and predictability to the sometimes hectic classroom. All classes concluded with virtual or traditional labs; all lab groups convened at their respective stations.

**Diversity.** The heterogeneous initiative was labeled so because it featured not only varied lesson plans and learning modalities, but also different students. Black students had the opportunity to learn alongside, learn from, and teach other students of various backgrounds, ethnicities, races, belief systems, and abilities. In a sense, the class was a melting pot of ideas and styles, allowing students exposure to a spectrum of similarity and difference. As such, no single student was ever isolated. Students engaged in hard work and off-task behaviors collectively. They offered assistance and exchanged ideas; corrected mistakes and fixed errors. As a unit, students gained a sense of one another as separate but interactive individuals.

Again, participants voiced that they did not feel any different from their peers in terms of ability. Although some participants acknowledged having heard of the achievement gap, this awareness did not seem to preclude Black students from succeeding. They enjoyed the classroom composition and thrived on the numerous differences. Participants reported significant interchanges during labs and projects. Classroom observations revealed that participants preferred same-sex and same-race classmates when not assigned to groups. When seeking answers, participants broke these sex and race pairings. Lab assignments revealed that all participants worked well together, regardless of sex and race.

For the most part, teachers and parents recognized the importance of diversity in student composition. When asked if students’ improvements were a direct result of the heterogeneity, parents indicated that it was certainly possible with responses such as: “I’d say so,” “Yes,” “most
definitely,” “probably,” and “I don’t know, maybe.” Moreover, teachers also expressed the power of heterogeneity by identifying the main factors that directly impacted student self-efficacy: “Rapport with peers,” “peer interactions (both positive and negative),” “friends (positive & negative),” and “bullying.” Teachers agreed that peer relations were a major factor, but were happy to report that most of the relations within the classroom were positive. Of course, as one teacher noted, these results did not come without hard work:

*I think it potentially makes better students as long as the teacher is willing to work hard. It takes students away from their friends and introduces them to a new group of peers that may be better for their success.*

**Varied Modalities.** Participants reported a variety of curriculum modalities that addressed their particular skillsets, abilities and intelligences. Clearly the kinesthetic labs were the most effective, but other approaches also helped. These approaches varied from individual-based review sessions, small group separations, full-class ‘debriefings’ and other diversity-based and size-based changes. Students also benefitted from visual media, auditory emphasis on paying attention, tactile experiences with equipment, and even the taste and/or smell of varied biological agents.

Classroom observations uncovered various modalities and instructional technologies at play. Teachers were dynamic and well prepared for each class. Seating charts changed weekly, and group pairings varied frequently as well. Teachers ensured that certain groupings were high-functioning, balancing various learning styles and dispositions. For instance, quiet more studious students would be paired with more vocal, less studious students for balance. These strategic groupings ensured that problematic pairings did not undermine the academic atmosphere. Teachers also formed groupings on the basis of formative assessments. This occasionally led to
small homogenous groupings within the heterogeneous classroom. The teacher readily capitalized on group competitiveness, especially among boys, in order to facilitate learning and on-task behaviors.

Concerning the instructional modalities and strategies, teachers established explicit outcomes and activities for every class on the board. Through utilizing active language such as “I will” for the students in the class agenda, the teacher ensured the students’ concretely understood what they would be doing during the class to demonstrate the learning outcome. Technologies informed much of the curriculum, including SMARTboards, docucameras, videos and virtual labs in every class. Because the classes were 90 minutes, teachers kept lectures to a maximum of 15 minutes. In addition, teachers ensured that students knew the routine. Interactive notebooks were used to facilitate note-taking and referencing, and lab groupings were used to bring the class, and learning, to a close each day.

Overall, participants echoed the importance of engaging the curriculum from all five senses, in a variety of heterogeneous pairings and subgroupings. By targeting the spectrum of learning styles, teachers effectively reached students who would otherwise be ignored. Teachers also learned ways to ‘grab’ student attention from the beginning. Usually, all it took was something that the students had experienced themselves:

*Something to get their attention, something relevant to them. If they can relate, that is often half the battle.*

Parents also recognized this effect, even if half of them were unfamiliar with the term “achievement gap.” They recognized that their children felt comparable to White peers, and that their children had the same potential as other students, even if past performance was lacking. As
long as teachers challenged students in relevant ways, students developed. For one parent, evidence of that developing self-esteem could not have been clearer:

*He does like to show off his report card this year. That never happened before.*

At the end of the day, however, report cards as just part of the goal. Ultimately, the goal is to connect these findings to the achievement gap. It is to find a way to inspire minority students and improve their performance, on *all* the metrics used to assess that performance. This is why *all* of the aforementioned themes, that evolved inductively as the qualitative case study progressed, connect to student achievement. Through various interviews, questionnaires, and observations, this study established that a heterogeneous Honors Biology initiative is highly effective in affecting said achievement. Propositions that guided the research were supported significantly by student attitudes, responses and behaviors, as well as corroborated by the teachers and parents. The research questions helped to illuminate these areas:

1. **Research Question 1:** How do Black students experience success or failure in the heterogeneous honors program?

2. **Research Question 2:** What effect, if any, has the heterogeneous honors program had on student self-efficacy?

Pertaining to these guiding questions, the study revealed that participants developed a stronger self-concept than when in standard courses. Students reported that they could goof off more in standard classes. These classes were considered chill and even boring. In the honors class, however, participants expressed a renewed self-efficacy. They felt more successful because they felt like they finally realized that they controlled their own destinies. Students expressed that hard work directly affected positive results. The honors program taught them to seek resources and aid, and to work diligently. Students developed a more positive image of their
futures. They considered AP classes and attending college. They no longer allow prerequisites or past grades to define them or hold them back. Participants experienced success as a significant corollary of self-belief and self-direction. Although they recognized the numerous benefits of peers and teachers, students ultimately indicated that their own distinct efforts determined positive outcomes.

When it came to failure in the honors program, participants also seemed to have a greater sense of self-reliance. They voiced on more than one occasion that tests and quizzes posed the greatest difficulty, and that overcoming this difficulty hinged on making the commitment to learn more. Students cared more about success and failure in the honors program because they had a greater sense of pride. They believed that others finally believed in them, and even wanted to show their family and friends evidence of their success. Black students in the honors program were personally motivated to show themselves, and others, that they belonged, and as positive results poured in, these students firmly believed it. The nurturing and supportive teachers believed it as well.

**Summary**

This chapter directly addressed the major findings of the explanatory case study. Participants were detailed in rich and revelatory fashion that respected anonymity. Inductive themes were briefly discussed through the lens of propositions guided by two primary research questions. Overall, this chapter focused on presenting the qualitative data that was generated via a thematic analysis methodology as outlined by Creswell (2014) and Yin (2012). Used in conjunction, these modes of data collection and analysis gave credence to the importance of this intrinsic case study. As Stake (2010) noted, an intrinsic case study focuses on the case itself, as
understanding the effectiveness of this initiative is paramount to improving learning conditions for all.

The theoretical constructs that informed the findings were those of Bandura’s Social Learning Theory and Gardner’s Theory of Multiple Intelligences. These two theoretical frameworks were considered of vital importance because they both closely intertwine within the academic context. The Social Learning Theory is important because students learn from social interaction and develop self-concept from their successes and failures in a social world. Students form perceptions of ability, and act accordingly. Their self-efficacies increase or decrease as a result.

Similarly, the Theory of Multiple Intelligences predicts relative success and failure of a given student in a given curriculum. Curricula that are heterogeneous approach particular learning styles from multiple angles. These lesson plans presuppose that different students integrate and apply information differently, making varied and differentiated approaches key to targeting those strengths. Varied modalities form the crux of a successful curriculum. Furthermore, the diversity inherent in a heterogeneous classroom ensures that students benefit from the greatest spectrum of social capital.

All in all, the findings suggest that student participants enjoyed positive experiences as a result of the initiative. Students spoke extensively about feeling pride, a sense of belonging, an improved self-confidence, newfound skills, new personal relations, and a sustainable rapport with teachers. Participants gained insights into their own potential, and although they certainly had to work hard and struggle at times, not one of them ended with less than a C grade. Teachers and parents also expressed a trust in themselves and their students. Although teachers occasionally expressed frustration with connecting to every student, and although parents found
the homework load to be heavy, all participant types generally recognized the benefits of the honors course. Overall, the study exemplified the importance of empowering students by pushing them to new limits in a supportive and nurturing environment.
CHAPTER FIVE: DISCUSSION

The purpose of this case study was to examine the ways in which Black students experienced a heterogeneous Honors Biology class. The previous chapter presented the qualitative results and analysis of in-depth interviews, questionnaires, and observation protocols conducted with teachers, parents, and seven Black student participants. Central themes which emerged from these various methods of data collection were also presented.

Pertaining to these themes and related findings, this chapter contains a brief summary of the study’s research questions. The emphasis of this chapter is to discuss the significance of the results and their implications for closing the achievement gap. This chapter concludes with an overview of the study’s limitations, and ultimately offers suggestions for future research and implementation.

Summary of Findings

Research Question #1: How do Black students experience success or failure in the heterogeneous honors program?

Individual and group interviews were conducted with seven Black students chosen to participate in the heterogeneous Honors Biology program. These students were selected despite failing to meet the district’s prerequisite of eighth grade algebra I completion. All students were identified by their eighth grade teachers as possessing the ability to succeed in an Honors Biology course. All participants presented with low GPAs, but proficient Maryland State Assessment (MSA) scores. The students were also required to fill out self-efficacy questionnaires in addition to being the subjects of separate classroom observations. Students
reported and exhibited failure and success differently in the honors program than in their previous standard classes.

Specifically, students were less dispirited by difficulty and more inspired by their successes. They reported working harder, persevering, and seeking additional aid. Participants reported that tests and quizzes posed the most trouble, but agreed that putting in the extra effort could overcome these difficulties. Students also exhibited a willingness to learn, and on more than one occasion shared their academic successes with family and friends. By comparison, participants reported that failures in standard courses exacerbated poor self-concept and that successes had few negative significant effects. Parents and teachers alike also reported that students showed improved attitudes, behaviors, and outcomes. Parents and teachers generally believed in their own, and each other’s, ability to help students.

*Research Question #2: What effect, if any, has the heterogeneous honors program had on student self-efficacy?*

Student participants reported that they finally trusted in their ability to succeed. They understood the causal connection between work and outcome. Students expressed that putting in the effort could improve the grade, test result, or degree of information learned. Furthermore, students felt that poor grades could simply be changed through work ethic. They did not equate grades or test performances to self-worth. Succeeding academically was seen as a dynamic process; it was not conceptualized as stagnant or fixed. In other words, school performance is not attributed to inherent ability. It is attributed to other factors such as will, interest, time investment, productivity, studying, review, inquiry, and the like. Black students in the heterogeneous honors program believed that they belonged with their peers. They encouraged one another to do better and work harder, but knew when to relax and joke around. Parents
generally reported that students felt welcomed in Honors Biology. Some parents even reported that students were more open about their successes, taking pride in sharing their report cards. Teachers similarly described a pride and drive among students taking part in the initiative.

In general, student self-efficacy increased. Being in an environment where others were positive, perseverant, and proactive helped Black students to feel better about themselves. Learning self-regulation and absorbing a narrative of success—as modeled by peers and teachers—was the main predictor of successful outcomes for student participants. The heterogeneous composition of both students and class instruction served to target the full range of abilities and learning preferences. The unique context of a rigorous heterogeneous class, especially one in the hard sciences, made the interchange of ideas and modalities all the more seamless. Without surprise, student participants said that due to the opportunity provided through the school initiative, they would be more willing to take academic risks in the future.

**Discussion**

This intrinsic explanatory case study is of utmost importance because it illuminates a unique pilot initiative in a particularly unique high school. Bay City High School (BCHS) is an important place for a study based on the achievement gap. It is a school that is racially and socioeconomically diverse with a student body comprised of 39% Black, 38% White, 18% Hispanic and 5% Asian. Of the school’s total Black population, 36% have below a 2.0 grade point average, making the underachievement of minority students a salient issue. Only 8% of Whites have below a 2.0.

This case study was ‘intrinsic’ because it focused on a microcosm of a demonstrable academic and socioeconomic problem. The disparity in educational outcomes for minority students is partially a product of inequitable social structures. BCHS has a significant number of
predominately White students from families earning over $250,000 per year. Meanwhile, 43% of the students qualify for the Free and Reduced Meal (FARM) Program based on family income. This study’s importance also stems from the fact that Bay City High School was one of the last schools in the United States to desegregate (McWilliams, 2011). The school is historically disparate in the achievement of its Black and White students (Maryland Report Card, 2012).

This case study found a unique void in the body of literature. A wealth of research has focused on the positive effects of heterogeneity on student achievement (Burris, Heubert & Levin 2006; Burris & Welner, 2005; Oakes & Wells 1998; Rubin, 2006). Many more studies have found that tracking students in homogenous classes can be problematic for student achievement (Ansalone, 2006; Hanushek & Wossmann, 2006; Oakes, 1987; Spielhagen, 2006; Wheelock, 1992). However, the current study went a step beyond, offering insight into heterogeneous classes that are also high-level curricula. Tworek (2008) has already recommended the importance of studying student experiences in mixed-ability classes that are more rigorous. That is why this study was so important.

Not only did the current study seek to uncover the intertwined factors of academic rigor, and mixed instruction and class composition, but the research also represented those factors in a distinctly qualitative fashion. Moreover, the criteria for the participants ensured a deeper understanding of the most notable outliers in the achievement gap: highly able students with disproportionately poor performance. In fact, all participants sustained a GPA below 2.5 prior to the pilot initiative, despite Maryland State Assessment (MSA) scores in science that represented a high level of proficiency.

Overall, this case study aimed to address the achievement gap by offering both theoretical and practical insights. By utilizing multiple sources and metrics of qualitative data, the study
covered a spectrum of classroom behaviors and attitudes. Moreover, the study focused specifically on two theoretical frameworks that have not been explored in this context. These frameworks included Bandura’s Social Learning Theory and Gardner’s Multiple Intelligences Theory (MI).

The body of literature regarding Social Learning Theory and MI in the classroom is rich (Armstrong, 2009; Colannino, Hoyt, & Murray, 2004; Kornhaber, Fierros & Veenema 2004; McCoog, 2010; Usher & Pajares, 2008; Wang & Lin, 2007; Zimmerman, 2011), but few researchers have focused on a single intensive case study as holistically as this one. The teachers, parents, and students were all assessed in this study, which only strengthened the qualitative fabric of the research. The sustained focus on a small grouping of Black students using multiple sources of evidence and operational links over time highlights the effectiveness of qualitative case studies. It is a holistic approach, answering the “why” and “how” beyond mere quantitative assessments of frequency and incidence (Yin, 2011).

Within the framework of Social Learning Theory, this study explored the specific construct of self-efficacy. Bandura (1977, 1995) popularized the supposition that human behavior is governed by outcome expectations and self-efficacy, and that these constructs are formed based on past behaviors. The research has shown that a person with high self-efficacy will be more likely to attempt an activity and will persevere at it longer than a person with low self-efficacy (Bandura, 1977, 1995, 2006). Strong students and struggling students will exercise approach versus avoidance behavior, respectively (Betz & Hackett, 2006). With that said, few studies have actually tried to assess self-efficacy through an innovative pilot intervention such as this one.
The current study discovered that a carefully orchestrated program with high-potential, low-performance minority students can strongly impact self-efficacy and subsequent performance. This has been corroborated by other studies wherein researchers found that programs that are supportive and nurturing can be very beneficial. Margolis and McCabe (2004) found that teachers can often strengthen struggling learners’ self-efficacy by linking new work to recent successes, teaching needed learning strategies, reinforcing effort and persistence, and helping them succeed on the very task they hope to fail. The self-efficacy of students is also linked to the self-efficacy of teachers. It has been shown that “teachers with a high sense of efficacy feel a personal accomplishment, have high expectations for students, feel responsibility for student learning, have strategies for achieving objectives, a positive attitude about teaching and believe they can influence student learning” (Ashton, 1984, p. 29).

The current study also shed specific light on Bandura’s four factors of self-efficacy. Bandura (1977) conceptualized four factors affecting one’s efficacy expectations: performance accomplishments, verbal persuasion, vicarious experience and emotional arousal. In the current study, participants who performed well believed that they could replicate or even outdo these performances in the future. When performances were not up to the students’ expectation, verbal persuasion from the teachers and peers helped to encourage students and keep their self-efficacy high. Vicarious experience also played an important role. Participants explained they felt that they were equal to their classmates; seeing their classmates perform tasks and interact and work with the teachers inspired participants to do the same. This is supported by the literature, as observing one perform activities that meet with success does, indeed, produce greater behavioral improvements than witnessing performances without consequences (Zimmerman, 2008).
Finally, the current study showed that even emotional arousal affects self-efficacy. This was evident in how the teachers allowed students to move around, joke around, and wear headphones. This activity ensured that students were able to capitalize on their varying emotional responses. Music helped to stimulate thinking, moving around helped to stimulate kinesthetic learning, and joking around helped to facilitate free association. These periods of ‘off-task’ behavior actually enable students to monitor bodily responses, regulate them, and reduce stress and anxiety (Ratanasiripong & Kathalae, 2012). In the end, such behaviors contribute to more intensive learning.

By experiencing the four factors of self-efficacy, participants actively learned how to improve their attitudes for successful outcomes. They realized that the learning process is dynamic, and that outcomes are tied to effort. This belief that ability is not stagnant or fixed is very adaptive in an academic context. As Bandura (1993) suggested, those who view ability as reflecting an inherent intellectual aptitude, experience reduced efficacy, analytic thinking, and aspirations.

In terms of intellectual aptitude, the current study also addressed an important area in the body of research. There is a dearth of literature directly detailing students’ qualitative perceptions of self-ability. Moreover, few case studies have focused on a single minority group in a heterogeneous honors program where different learning modalities are emphasized. Based on Gardner’s framework of Multiple Intelligence Theory, the various modalities strove to include every student. According to Gardner (2011), individuals possess different aptitudes that can be expressed in 8 different ‘intelligences’ beyond an IQ score. These intelligences are fashioned as abilities to solve problems and cultivate products in numerous settings.
Throughout the research, multiple intelligence theory has been shown to be an effective approach to educating students. This was illustrated by Colannino, Hoyt, and Murray (2004) where they observed that “Grouping students for science labs by multiple intelligences seemed to improve both the quality and timely completion of science lab reports” (p. 47). This was supported by the current study wherein kinesthetic learners and interpersonal learners benefitted significantly from science labs and group projects. Furthermore, differentiated instruction meant that materials were more relevant to the minority students. The teachers made sure to use curricular materials that were culturally diverse, to cover social and cultural issues, explore concepts and issues from multiple perspectives, and emphasize excellence and equity (Ford, Harris, Tyson & Trotman, 2000). As Gardner explained, teachers can target multiple intelligences by tailoring narratives, logic and deductive reasoning exercises, keywords and definitions, musical and visual arts, and objects and materials to particular student aptitudes (Gardner, 2011). If the curriculum is multisensory, intellectually varied and culturally sensitive, all students can excel.

Of course, a rigorous curriculum and heterogeneous grouping was just part of what made the current study unique. Other studies have not focused on the experience of Black students in rigorous science classes simply because there is a lack of minority presence in such classes. Fewer than 10% of Black or Hispanic students participate in rigorous courses (Vanneman, Hamilton, Baldwin, Anderson & Rahman, 2009). Even when studies do focus on science and math as the content being investigated, they are mostly quantitative in nature. Not to mention, more studies have focused on math over science. Despite this, the body of research indicates that rigorous heterogeneous classes boost self-efficacy and academic performance. In fact, Burris, Heubert and Levin (2006) found that an accelerated curriculum is more beneficial to at-risk
learners and low-achieving students than a traditional remedial curriculum. Furthermore, in a high school study of heterogeneous grouping, the detracked classes had fewer problems than former low-tracked classes, and exhibited the success of high-achievers (Burris & Garrity, 2008).

Whether rigorous or standard course, detracking has been studied broadly. In most cases, the research incorporates designs that are multiple-case studies of several school sites. One prominent study of this nature by Rubin (2008) revealed that heterogeneous initiatives differ based on the student composition. At homogenous suburban schools, most students were assumed to be bright, despite achievement levels, and were exposed to creative curricula to develop competence. Meanwhile, at a racially and socioeconomically diverse school site, the focus shifted from assumptions of ability to issues of flexibility, personalization, and equal opportunity (Rubin, 2008).

In the current study, the Honors Biology program served to incorporate the majority of these aspects, all in one context. Although the nature of a hard-science course limits the degree to which social and cultural issues can be discussed—compared to a History or Social Studies class—the initiative nonetheless encouraged equity and diversity. The diversity of the class composition and teaching modalities ensured that students felt included, even if specifics of their particular ethnicities were not actively discussed.

Interestingly, the study did seem to misalign with others at times. The current research design presupposed that the Black students were bright and capable, despite their grades and lack of prerequisites. These assumptions of potential were based upon teacher recommendations and standardized test scores. In the end, the study’s assumptions were supported by the qualitative data. Students largely exhibited and reported successful outcomes, as did their teachers. However, these outcomes are not seen everywhere. In a meta-analysis by Rui (2009) on 15
studies conducted from 1972 to 2006, heterogeneous initiatives showed no significant effects on average and high-ability student achievement.

As a White male researcher studying underachieving Black students, I experienced moments during this study where it felt as if race presented some degree of uneasiness for the participants. This was not so much of an issue with the teacher participants, as discussions regarding the academic performance of minority students and the achievement gap are common place for them. It was more in the interactions with the students and parents where my race was a challenge to be overcome. With a few student participants this uneasiness may have manifested itself in a degree of guardedness on their behalf. The students were appropriately polite, but seemed to not feel overly comfortable interacting with me and answering my questions. In all cases this eased as the interview progressed, and was not at all detectible during the member checking with the group. It is also possible this awkwardness had nothing to do with race and was simply due to me being an unfamiliar adult asking somewhat personal questions. In interacting with parents this element of guardedness seemed even more heightened, and my sense was even greater that my race heavily contributed to this. The parents may have been more suspicious of my motivations given the unique history of the school detailed earlier, along with their different personal experiences being from a slightly older generation than their children. A generation that likely experienced a higher level of inequity and racial tension than currently exists at the school. Parents were by no means overtly rude, and all did consent to participate in the study. However, when it came time to meet and answer interview questions, several parents presented challenges as I attempted to coordinate times and locations to meet. These challenges included multiple unreturned phone messages, missed appointments, excuses to not meet and a general pattern of evasive maneuvering by several parents. I was left wondering
if it was simply their busy schedule or their apprehension sharing information with me because of my race. This required me to be patient, persistent and exceptionally flexible in how and where I collected their data. In addition to sitting down at a table at the school or community center, I also collected data over the phone, standing in a parking lot and on a front porch through a partially opened front door. In the case of the impromptu parking lot and porch interviews, parents gave off clear social queues that they were anxious for the interview to end. However, if not for my enhanced level of persistence and flexibility, a full complement of parent data likely would not have been available. In the end, gaining input from parents proved to be a worthwhile, albeit challenging undertaking.

Needless to say, the current study is unique in more ways than one. A final point of uniqueness is the obvious gender factor; six of the seven participants were male. This is an important note because the research has already established the disparity between achievement in Black males and females. Garbarino (1999), Strayhorn (2008) and White (2009) have researched this phenomenon extensively, and report that males are significantly more likely to attend predominately Black high schools, perform worse than their female counterparts, avoid placement in advanced and honors courses, over-represent special education programs, and incur suspensions and expulsions from schools. Moreover, many male Black students are likely to focus more on self-protection than personal aspirations, especially in poor academic settings (Poliakoff, 2006). For these reasons alone, studying a cohort of male Black students in a novel context is a worthwhile endeavor. The current case study, for all its unique qualities, was a worthwhile endeavor.
Implications

For Future Research

This qualitative case study carried an array of implications that connect to and deviate from the literature. As mentioned, the study revealed that the core concepts of Bandura’s Social Learning Theory and Gardner’s Multiple Intelligence Theory can be utilized positively in a unique academic initiative. The study indicates that self-efficacy may be a modulator in self, interpersonal, and group perceptions of success and failure. Moreover, the study suggested that self-efficacy is a significant modulator in student achievement. Not only did participants express and exhibit successful attitudes, behaviors, and outcomes, but their teachers and parents also corroborated these findings.

Furthermore, the case study exemplified the benefits of a qualitative approach. Previous research has already shown that quantitative assessment metrics such as course credits and GPAs can be counterproductive. These practices often lead to misplacement of highly-abled students who then flounder. Similarly, quantitative study metrics may not fully capture the essence of a given context. It is important to understand unique settings in order to find application and generalizability, in order to see how a given context can be extrapolated. The context does not necessarily need to be replicated or repeated, but if its significance can be extended to similar initiatives, a network of initiatives can form.

Qualitative studies hear directly from those involved in the initiative; from the students, the teachers, the parents. Such studies rely on sensory data from observations, self-reports, and open-ended interviews that stimulate free-flowing ideas. This approach ensures that important attitudes and behaviors are captured and not excluded by narrow standardized instruments. This approach is naturalistic, not mechanical. This approach is a primary reason the current study was
so illuminative. After all, these participants are humans. They are dynamic individuals with quirks and contradictions and varied experiences. A qualitative case study accounts for these nuances when a quantitative study may not.

For Schools

In analyzing and discussing the study, the notion of ‘achievement gap’ is consistently relevant. The study revealed an oft-forgotten aspect of this gap. Although students of minority and low socioeconomic status are underachieving compared to their higher socioeconomic counterparts, these low achievers are also underrepresented. In other words, the achievement gap is a two-part problem. In many instances, minority students do not produce equivalent results often because they do not receive equivalent opportunities. As Taliaferro and DeCuir-Gunby (2007) note, significantly fewer minority students are given the opportunity to take their achievement further – to participate in honors or advanced placement courses. A main reason for this is the problematic practice of tracking or homogenizing classes based on perceived ability.

The current study demonstrates the flaws in this process. Grades and prerequisites should only be a part of the criteria. The seven participants promoted to Honors Biology would never have been granted the opportunity if it were not for this initiative. Instead, they would have stagnated in standard courses, despite high potential as evidenced by MSA scores and teacher recommendations. This suggests that the current system for student development is flawed. It is no surprise then that numerous researchers have decried the pitfalls of tracking, while championing the benefits of heterogeneity for all student race and ability cohorts (Burris & Welner, 2005; Cheng, Shui-fong & Chan, 2008; Oakes & Wells, 1998; Rubin, 2006).
The implications of this study are readily clear. As expressed in participant self-reports, interviews, and observations, minority students are likely to perform to their perceived level. If they perceive they are incapable or unwelcome in more rigorous courses, they will not perform to those standards. However, when a sense of belonging and capacity for achievement is instilled in these students, the students are likely to work harder. Unfortunately, environments that are neither nurturing nor supportive will only serve to confirm perceptions of inability. Students will believe less in themselves, work less, perform worse, and use these results as ‘proof’ that they are simply incapable. This vicious cycle is essentially a self-fulfilling prophecy. If students believe it, they will behave in a way that reinforces that belief—no matter how counterproductive or maladaptive.

This forms the crux of Bandura’s self-efficacy and Gardner’s multiple intelligences. Bandura argued that failures reduce self-efficacy more when attributed to a fixed ability rather than to unusual situational circumstances or controllable factors. Bandura (2006) contends that an individual’s self-efficacy will drastically impact the effort and time expended in attempting or completing a task. According to this line of thought, tracking students based on perceived ability only serves to communicate a perception of fixed value and worth, which students can internalize negatively (Bandura, 2006). After all, if we believe something about ourselves is never going to change, why would we bother trying?

The idea of fixed ability also relates to Gardner’s Multiple Intelligence Theory. In his comprehensive theory, Gardner (2011) explicitly defined eight types of intelligences, each of which measure a person’s particular processing capacity. Gardner asserts that certain people have high intelligences in a kinesthetic domain; that they can learn proficiently through movement and tactile experience. Other people may have high interpersonal intelligences,
meaning that they can easily relate to others and capitalize on important relationships. Some people are better at harnessing language, written and spoken, and other people have a knack for visualizing and manipulating spatial relations.

In total, Gardner’s theory is telling because it stresses the importance of heterogeneous education, especially in a rigorous course where a single teaching approach will marginalize certain learners. The current study relates to Gardner’s theory, especially in terms of kinesthetic learning. Most of the participants reported that they learned best through touching, moving, and generally working with their bodies in labs and experiments. These results are important because often the intellectual strengths of minority students are not targeted. As Morgan (2010) indicated in his literature review, the main reason for academic difficulties among minority students is a poor understanding of minority students’ learning and communication styles (Morgan, 2010). The current study supported this and echoes what other researchers have found: schools using MI-inspired differentiated practices have outperformed those that have not (Kornhaber, Fierros & Veenema, 2004).

For Teachers and Administrators

The heterogeneous Honors Biology program at BCHS implies that the achievement gap can be closed. It shows that minority students with proficient ability—the cohort believed most at-risk—can overcome. The important thing to understand is how to inspire that resiliency. Black students benefit from inclusion and rigor. They learn to push themselves; they learn to appreciate the value of hard work and achievement. In an environment where various instruction methods and student types are present, the underachieving minority student can flourish. If the teachers are committed and the students have an opportunity to change their self-efficacies, positive outcomes are not only probable but likely.
Limitations

As discussed, the current study differed from others in unique areas. However, this means of difference is also a point of limitation. In overviewing the limitations and delimitations, certain areas are salient. The study can fall short due to the criteria for its participants and due to the actual school site. Both of these factors create a study that is unique, insightful, and potentially limited.

Qualitative case studies may have application and transferability, but they do not have any generalizability. Qualitative researchers care about the special circumstances within a given context, population, or setting. Although qualitative researchers care about the literature, they are not interested in closely manipulating variables to achieve sameness across the board. To do this would be to remove the naturalistic quality. According to some researchers, however, qualitative studies do have a type of generalizability. Stake (2010) believed that the qualitative case study has more intuitive, empirically-grounded generalization, known as naturalistic generalization, which can resonate with a broad cross section of readers.

The case study can also be limited due to the presentation of its findings. If the case is expressed in narrative form, it may be difficult to hold a reader’s interest if too lengthy, and so information should be prevented in a rich and digestible manner (Neale, Thapa & Boyce, 2006). Since case studies are believed to be less controlled of the research methods, observer bias may result from the researcher’s theories, hypotheses, perceptions, and experiences in the data collection process. The researcher may strive to align data with wants, needs, and beliefs, ultimately undermining the importance of the study (Fidel, 2012). Of course, qualitative proponents argue that the researcher is the central instrument in the study, and an important factor in the precision, credibility and transferability of the results.
A reality still in our society today is that discussions pertaining to race can be an awkward at best. As a White male, I experienced this reality firsthand at times during this study of seven Black students. Some of this racial awkwardness may have been real or merely perceived on my end. Regardless, it likely had some degree of impact on the study and is thus a limitation.

Another limitation in the study is the set of participants. This study was unique because it dealt predominately with males. All participants had GPAs below 2.5 and academic potential as indicated by MSA scores and teacher recommendations. Furthermore, the parent and teacher participants exhibited a certain typology. Although parents were sometimes unsure as to the nature or goal of the study, they generally exhibited strong beliefs in self-efficacy. Studies with detached, unconfident parents may elicit different findings. Teachers in this study were also unique, generally being young and high in energy. Their ability to relate to students may not transfer to studies featuring older, more traditional teachers and teaching styles. Moreover, the classes’ reliance on technologies may not generalize to studies of schools wherein such technology is inaccessible.

It should be noted that studies with participants whose MSA scores were in a different range may offer different experiences. However, there was one female student participant. The effects of the male majority on the performance of this female are uncertain, as are the female’s effect on the male majority. This study may not generalize to studies that feature all males, or a balance of females and males. Moreover, the female may have minimized any stress or pressure relating to male dominance—anonymous surveys relating to gender pressure and manipulation would unearth this area. Moreover, the males may have augmented their attitudes and behaviors.
in the presence of the female. Truly exploring this area would require more intensive observation protocols as well as tailored surveys and interviews.

The study is also unique in that it focuses specifically on an Honors Biology course containing differentiated instruction and heterogeneous composition. Other studies may lack these conditions, and so the transferability of this study may be small in magnitude. It would be hard to closely compare these results to the results of a study wherein the participants were low-ability as determined by MSA scores and teacher appraisals. Furthermore, the study only features seven participants, and cannot speak to other non-Black minority experiences nor to larger sample sizes. The participants are also younger, and may not compare to seniors and juniors considering college and vocation.

A final aspect of the study’s limitations and delimitations are those issues pertaining directly to the school site and district. BCHS was a unique setting because it was racially and socioeconomically diverse. It had both extremes, students whose family incomes were over $250,000 and those who received free or reduced meals. Moreover, BCHS has been segregated much more recently than the majority of high schools. The social scene of BCHS may not be comparable to other schools’, and certainly cannot be equated to those in middle schools and elementary schools. Additionally, being an employee of the district where the study took place may have limited the study to some extent. I did my best to operate as an impartial researcher independent of my professional role, but was always conscientious of my affiliation with the district in my interactions throughout the study.

Studies also show that heterogeneous initiatives vary depending upon the school. Schools with mostly suburban compositions emphasize different objectives, such as creative freedom. Schools that are mixed typically emphasize diversity and equity, and low-income schools of
predominantly Black students often exacerbate a discourse of deficit. This discourse posits that all students are of low ability, spurring classroom protocols that fail to facilitate growth and competence.

Overall, the study is unique with some inherent limitations. It is a study that certainly offers strong evidence that academic initiatives can be successful, within a nuanced context. The study offers support for the power of self-efficacy, and how the right role models and behaviors can improve that efficacy. Moreover, the study exemplifies a practical means of narrowing the achievement gap: challenge bright but underperforming students in a supportive and varied environment.

**Recommendations**

For Future Research

Obviously, the current study leaves a lot to be determined. Although valuable, it alone will not solve the puzzle of achievement and student self-efficacy. The important thing to remember is this: studies need to find a balance of both quantitative and qualitative. Mixed methodologies should be emphasized, bringing the strengths of both worlds. Meta-analyses by impartial analysts are also critical. These ensure the fair analysis of achievement gap studies, in both breadth and depth. Specifically, studies of high school initiatives with minority students.

Future researchers should also seek to understand case studies that are more comprehensive. Multiple case studies at the same school or similar schools in a district should be conducted. Researchers would be wise to employ a variety of data collection methods for high-ability minority students, collectively and by cross-sections of gender, grade, and subject matter. Researchers should also conduct studies of Black males and females who have not underperformed.
Of course, research shows that many of the problems of underachievement stem from extracurricular affairs. This is why studying particular domestic spheres and social strata are important. Researchers need to fully explore the plight of anti-intellectualism, peer pressure, and other impediments to education in the Black community. An important entry point would be simply deciphering the differences between words and actions. Participants in the current study would report disinterest in the honors program, yet their behaviors indicated otherwise. They spent a lot of time staying after school, asking peers for help, and doing make-up work. It is possible that the culture of anti-intellectualism impacted males especially, making talking about academic rigor and performance ‘uncool.’ Because of this, researchers should design studies that uncover how peer pressure and anti-intellectualism affect perceived behavior and attitude and actual behavior and attitude. Researchers should also determine the kind of differentiated and culturally sensitive instruction most amenable to minority students. This will offer more equal opportunities in society.

**For Schools**

The current study also indicates that certain practices, such as tracking, are counterproductive. New legislation and school initiatives must be put in place. Schools should strive to detrack students from a young age. Special cases can be made for exceptions, but the research has indicated repeatedly the benefits of heterogeneous initiatives. Furthermore, school systems need to change the common metrics. At the very least, schools should shift the emphasis from common metrics to uncommon ones. Grades and prerequisite completion are only part of the puzzle. Many minority students with low GPAs, do not receive the prerequisites they need. As a result, they are perceived as low-ability and take on this belief. Classroom observations and parental reports should also be factors in curricular progression.
For Teachers, Administrators and Society

At the societal level, we can all play a part. Firstly, we should work to reduce dangerous stereotypes, and to provide preferential treatment programs that aspire to equal opportunity. We should also work to improve infrastructure and neighborhood safety. The legislative mandates and challenges (NCLB, 2001 & Race to the Top, 2009) should remain at the forefront of our minds as not only moral imperatives, but as practical drivers of change. After all, studies consistently show that better educated students earn higher incomes, enjoy healthier lives, and engage less in illegal activity.

It is important to remember the context of the current study. The study arguably paints a pretty picture of heterogeneous honors classes. However, this may simply be an exception, or a misinterpretation. All researchers should be cautioned that heterogeneous pairings are not going to fix the achievement gap overnight. They are merely one part of the solution. Heterogeneous initiatives are not a panacea. Educators and researchers need to still focus on instilling basic skills in their students. Even in the current study, parents and teachers indicated on several items that they sometimes felt at a loss. At times, teachers were not sure how to get through to certain students, especially students deemed as lacking ‘basic skills.’ Among minority students especially, it is this lack of basic skills, of foundation, that exacerbates the achievement gap.

Teaching students basic skills starts at the beginning. Preschool, kindergarten, and elementary classes need to be discerning of student strengths and deficiencies from a young age. Learning preferences need to be targeted and multiple modalities need to be employed. Instilling basic reading, science and math skills begins in early education and must be dynamic all the way through higher education. Children need to learn why something matters, not just that it matters:
After children acquire basic facts, they need to make this new information theirs, assimilating it into their existing network of ideas. The notion of improved comprehension primarily includes two key concepts: consolidation and automaticity. The process of consolidation is essential for new information to stick, or to stay with an individual for a prolonged period, becoming part of long-term memory. Automaticity is the ability to perform a complex task without conscious awareness or effort. Through repeated practice, the task itself becomes an automatic process (Bennet, 2004, p. 11).

Minority students who have not learned the basic skills may come to resent education. If these students cannot make basic skills automatic, teachers will have to spend an inordinate amount of time reviewing, instead of moving forward with new concepts. Educators and researchers need to come to an agreement on methods of instruction that best consolidate information for students.

This is where the current study can only go so far. By better educating all students, we can quite literally change all negative aspects of society. In general, more informed people make more informed decisions. If we can become a better educated citizenry, we can continue to move toward a society of acceptance and understanding. If we can approach this unified but heterogeneous population, gaps of all kinds—including wealth and incarceration rates—may close.

**Conclusion**

In closing, the main facets of this study are obvious. We need to work hard to change the way we approach academic achievement. It is not simply about students’ end performance. It’s about their motivation, their attitudes, their behaviors, and the environments that feed these
qualities. The achievement gap is as much a result of performance or lack thereof as it is a result of the ways in which we measure said performance.

The current study revealed that academically able yet underachieving minority students can and do improve. Their beliefs change, and their behaviors follow accordingly. Students learn to appreciate themselves, their peers, and their teachers. In a nurturing and supportive environment, minority students can succeed. This study reveals that assessing three sources of information—teacher, student and parent—are a holistic approach to the issue of student performance. This allows researchers to compare/contrast the data. It also allows for a careful analysis of nuances and discrepancies in order to determine themes that capture that multifaceted nature.

In the end, it is important to remember that there is a lot of work to do. The case study is just that, a case. There are numerous other cases and situations wherein researchers may find different results or contradictory experiences. There are cases of students who perform well despite zero evidence of potential, and there are cases of students who simply cannot be categorized or slotted in terms of their ability. Many cases of learning-disabled but intelligent students are also present. This is not to say that any one study is ‘wrong,’ but simply suggests that a million and one factors—many unrecognized—are continuously at play. Fortunately, with continued research and continued application of research, society can begin to approach a level of achievement that is equitable. Only time and research will tell.
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May 23, 2014

John A. Thompson
IRB Approval 1878.052314: African-American Student Self-Efficacy and the Achievement Gap: A Heterogeneous Grouping Case Study

Dear John,

We are pleased to inform you that your above study has been approved by the Liberty IRB. This approval is extended to you for one year. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Please retain this letter for your records. Also, if you are conducting research as part of the requirements for a master’s thesis or doctoral dissertation, this approval letter should be included as an appendix to your completed thesis or dissertation.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

Fernando Garzon, Psy.D.
Professor, IRB Chair
Counseling

(434) 592-4054
Appendix B: Site Approval Letter

May 28, 2013

To Whom It May Concern:

I give my permission for John Thompson to conduct his research study THE IMPACT OF A HETEROGENEOUS GROUPING INITIATIVE IN IMPROVING SELF-EFFICACY AND CLOSING THE ACHIEVEMENT GAP: A PHENOMENOLOGICAL STUDY OF African American STUDENTS IN NINTH GRADE HONORS BIOLOGY at [redacted] High School.

Sincerely,

[Redacted]
Appendix C: Parent and Student Consent Form

AFRICAN-AMERICAN STUDENT SELF-EFFICACY AND THE ACHIEVEMENT GAP: A HETEROGENEOUS GROUPING CASE STUDY
John Thompson
Liberty University
School of Education

You and your child are invited to be in a research case study that will look at the ways a mixed-ability Honors Biology class affects the self-esteem and academic performance of select African-American students at Annapolis High School. You and your child were selected as possible participants because your child was promoted into Honors Biology despite not having completed Algebra I, based on the school’s belief that he or she could be successful in an honors course. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by John Thompson, a doctoral candidate in Liberty University’s School of Education.

Background Information:

The purpose of this study is to discover the ways in which the school’s mixed-ability Honors Biology initiative affects the self-esteem/self-efficacy and academic performance of African-American students.

Procedures:

If you and your child agree to be in this study, I would ask you to do the following things:

Student Procedures:
1. Complete the self-efficacy subscale of the Motivated Strategies for Learning Questionnaire (MLSQ). The MLSQ self-efficacy subscale is designed to measure students’ performance expectations and confidence. This activity should take approximately 15 minutes.

2. Participate in a 1-hour audio recorded interview session, where I will have the opportunity to respond to and expound upon 17 open-ended questions by the researcher.

3. Be observed on three occasions for the entire duration of an Honors Biology class by the researcher.

4. Participate in a 60- to 90-minute final review of the data collected by the researcher and offer further comment and clarification on both initial data and final research findings.
Parent Procedures:

1. Participate in a 30-minute interview session, where you will have the opportunity to respond to and expound upon 11 open-ended questions by then researcher.

2. Complete the Parental Self-Efficacy for Helping the Child Succeed in School Survey (15 minutes), which will estimate your confidence in supporting your child’s success in school.

Risks and Benefits of being in the Study:

The risks involved with this study are minimal and are no more than the participant would encounter in everyday life

There are no direct benefits to participation. However, study results may provide educators with insight to work more effectively with African-American students in higher-level courses and to decrease access and achievement disparities between white and minority students in an effort to close the achievement gap in public education. Accomplishing this would also have a positive impact on society at large as better-educated people live healthier lives, have better jobs, and pay more in taxes.

Compensation:

As participants, you and your child will not receive any compensation for participating in this study.

Confidentiality:

The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only the researcher will have access to the records. The data collected for this study will be kept on a password-secured computer and in a locked file cabinet accessible by only the researcher or his advisor upon her request. Data will be deleted or shredded three years after study completion. Additionally, in order to preserve privacy and confidentiality, names will not be used on any data collection documents, finding, or reports. Students/participants, parents, and teachers are not identified on an individual basis and are instead referred to in the following fashion on all documents: Teacher A, Parent B, Student C, and so on. This protocol is consistent with American Educational Research Association (AERA) guidelines. All audio recordings will be transcribed verbatim and then deleted at the completion of this study.

As part of this study, all participants will take part in a group review of the data and findings. Given this, it cannot be ensured that the other participants will maintain your confidentiality and privacy.
Voluntary Nature of the Study:

Participation in this study is voluntary. Your and your child’s decision whether or not to participate will not affect your current or future relations with Liberty University, High School, or Anne Arundel County Public Schools. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships. If you decide you wish to withdraw, you should notify the researcher immediately (contact info below). Upon this request, your data will be deleted and not included in the study.

Contacts and Questions:

The researcher conducting this study is John Thompson. You may ask any questions you have now. If you have questions later, you are encouraged to contact him at 410-222-1650 or jathompson5@liberty.edu. You may also contact his faculty advisor, Dr. Vivian Jones, at 407-322-1951 or vojones2@liberty.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, you are encouraged to contact the Institutional Review Board, 1971 University Blvd, Suite 1837, Lynchburg, VA 24515 or email at irb@liberty.edu.

You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read and understood the above information. I have asked questions and have received answers. My child and I consent to participate in the study.

☐ By checking this box my child and I consent to my child being audio recorded during this study

Signature: ____________________________ Date: ________________

Signature of parent or guardian: ____________________________ Date: ________________
(If minors are involved)

Signature of Investigator: ____________________________ Date: ________________

IRB Code Numbers: 1878.052314
IRB Expiration Date: May 23, 2015
Appendix D: TEACHER CONSENT FORM

AFRICAN-AMERICAN STUDENT SELF-EFFICACY AND THE ACHIEVEMENT GAP: A HETEROGENEOUS GROUPING CASE STUDY

John Thompson
Liberty University
School of Education

You are invited to participate in a research case study that will examine the ways in which heterogeneous grouping impacts self-efficacy and academic performance for African-American students in an Honors Biology class at [Redacted] High School. You were selected as a possible participant because you teach/have taught students that were promoted into Honors Biology despite not having completed Algebra I, based on the school’s belief that they could be successful in an honors course. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by John Thompson, a doctoral candidate in Liberty University’s School of Education

Background Information:
The purpose of this study is to discover the ways in which the school’s heterogeneous grouping initiative affects the self-efficacy and academic performance of African-American students.

Procedures:
If you agree to be in this study, I would ask you to do the following things:

1. Participate in a 20-minute interview session, where you will have the opportunity to respond to and expound upon five open-ended questions by then researcher.

2. Complete the Teacher Self-Efficacy Survey, which will estimate your confidence to impact student classroom achievement. The survey should take approximately 15-minutes.

Risks and Benefits of being in the Study:
The risks involved with this study are minimal and are no more than you would encounter in everyday life.

There are no direct benefits to participation. However, study results may provide educators with insight to work more effectively with African-American students in higher-level courses and to decrease access and achievement disparities between white and minority students, in an effort to close the achievement gap in public education. Accomplishing this would also have a positive impact on society at large as better educated people live healthier lives, have better jobs, and pay more in taxes.

Compensation:
As a participant, you will not receive any compensation for participating in this study.

Confidentiality:
The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Research records will be stored securely and only the researcher will have access to the records.

The data collected for this study will be kept on a password-secured computer and in a locked file cabinet accessible by only the researcher or his advisor upon her request. Data will be deleted or shredded three years after study completion. Additionally, in order to preserve privacy and confidentiality, names will not be used on any data collection documents, finding, or reports. Students/participants, parents, and teachers are not identified on an individual basis and are instead referred to in the following fashion on all documents: Teacher A, Parent B, Student C, and so on. This protocol is consistent with American Educational Research Association (AERA) guidelines.

**Voluntary Nature of the Study:**
Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University, High School, or Anne Arundel County Public Schools. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

**Contacts and Questions:**
The researcher conducting this study is John Thompson. You may ask any questions you have now. If you have questions later, you are encouraged to contact him at 410-222-1650 or jathompson5@liberty.edu. You may also contact his faculty advisor, Dr. Vivian Jones, at 407-322-1951 or vojones2@liberty.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, you are encouraged to contact the Institutional Review Board, 1971 University Blvd, Suite 1837, Lynchburg, VA 24515 or email at irb@liberty.edu. You will be given a copy of this information to keep for your records.

**Statement of Consent:**
I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

Participant Signature: _______________________________ Date: ________________

Signature of Investigator: ______________________________ Date: ________________

**IRB Code Numbers:** 1878.052314

**IRB Expiration Date:** May 23, 2015
Appendix E: Student Recruitment Verbal Script

Hi, my name is John Thompson and I am a doctoral student at Liberty University conducting a research study. I am studying the heterogeneous grouping initiative here at [redacted] High School, with a primary focus on how the initiative is perceived and experienced by African American students. If you agree to participate, I will simply ask that you complete a brief questionnaire, participate in a structured interview with me and consent to me observing your Biology class. I can assure you that nothing negative will come as a result of you choosing to participate in the study or not. I can also assure you that if you do participate; your identity and information will remain protected and anonymous. By participating I truly hope to give a voice to you as a student. I want the school and district to understand how you perceive and experience their attempt to help you and other students become more successful academically. As a participant you will also have the opportunity to review and comment on all the data I collect prior to me concluding my study. Do you have any questions for me and do you think this may be something you are interested in participating in?
Appendix F: Interview Questions (for Students)

1. Can you tell me what the term “achievement gap” means to you?

2. As an African American student at Bay City High School, how do you feel your academic ability compares to those of other students?

3. Do you feel you belong in Honors Biology?

4. Do you believe others (teachers, students) think you belong in Honors Biology?

5. What are some differences between your standard courses and Honors Biology (i.e., academic rigor, racial composition, expectations, student engagement and behavior)?

6. Describe any successes you have had in Honors Biology.

7. Describe any challenges you have had in Honors Biology.

8. How does being in an honors course change your self-esteem?
9. How has Honors Biology changed you as a student (more studying, higher expectations, etc.)?

10. What grade do you expect to earn in Honors Biology class?

11. Name one thing you like and one thing you don’t like about this class.

12. Has this course encouraged you to take more honors or possibly an AP course as you continue high school?

13. Has this course had any impact (positive or negative) on your plans to attend or not attend college?

14. Has this course changed you as a student?

15. Do you feel treated any differently in class because you are African American?

16. Do you interact differently with your classmates in Honors Biology compared to your other classes?

17. Do you have any friends in honors classes and have you made any new ones?
Appendix G: Interview Questions (for Parents)

1. Do you believe others (teachers, students) think your child belongs in Honors Biology?

2. Describe any challenges or successes your child has had in Honors Biology.

3. What does it mean to you for your child to be in Honors Biology?

4. Has being in an honors course changed your child’s self-esteem?

5. What grade do you expect your child to earn in Honors Biology class?

6. Name one thing you like and one thing you don’t like about your child’s class.

7. Has this course had any impact (positive or negative) on your child’s plans to attend or not attend college?

8. Do you believe your child is a better student as a result of being in this course?

9. How does your child describe the experience of being African American in the class?

10. Can you tell me what the term “achievement gap” means to you?

11. As an African American student at Bay City High School, how does your child perceive his or her academic ability relative to other students’?
Appendix H: Interview Questions (For Teaches)

1. Has your view on your or your students’ abilities changed throughout the study?

2. Have your motivational strategies changed during this study? How?

3. What do you think is the very best way to motivate students in this class?

4. List several factors that have a direct impact on student self-belief in your classroom.

5. How would you describe the effect of this heterogeneous initiative on students?
Appendix I: Classroom Observation Protocol

Class/Teacher: ______________________  Time(s)/Date(s): ______________________

Duration: ______________________  Participants Observed: ______________________

Observation and Assessment of Participants’ Engagement in Instruction:

Observation and Assessment of Participants’ Peer Interactions:

Observation and Assessment of Participant-Teacher Interactions:

Student Groupings:

Instructional Strategies/Modalities:

Classroom/Behavior Management:
Appendix J: Modified Motivated Strategies for Student Learning Questionnaire

Please rate the following items based on your behavior in this class. Your rating should be on a 7-point scale where 1 = not at all true of me to 7 = very true of me. If the statement is not at all true of you, circle 1. If the statement is more or less true of you, find and circle a number between 1 and 7 that best describes you. If the statement is very true of you, circle 7. (Pintrich, Smith, Garcia, & McKeachie, 1991).

1. I believe I will receive an excellent grade in this class.

   not true  1  2  3  4  5  6  7  very true

2. I’m certain I can understand the most difficult material presented in the reading for this class.

   not true  1  2  3  4  5  6  7  very true

3. I’m confident I can learn the basic lessons in this class.

   not true  1  2  3  4  5  6  7  very true

4. I am confident I can understand the most complex material presented by the teacher.

   not true  1  2  3  4  5  6  7  very true

5. I am confident I can do an excellent job on the assignments and tests in this class.

   not true  1  2  3  4  5  6  7  very true

6. I expect to do well in this class.

   not true  1  2  3  4  5  6  7  very true

7. I’m certain I can master the skills being taught in this class.

   not true  1  2  3  4  5  6  7  very true

8. Considering the difficulty of this class, the teacher, and my skills, I think I will do well in this class.

   not true  1  2  3  4  5  6  7  very true
Appendix K: Teacher Self-Efficacy Survey (Hoover-Dempsey, 2002)

Please rate the following items based on your own self-perceptions. Your rating should be on a 6-point scale where 1 = disagree very strongly to 6 = agree very strongly.

1. I feel that I am making a significant educational difference in the lives of my students.

2. If I try really hard, I can get through to even the most difficult and unmotivated students.

3. Children are so private and complex, I never know if I am getting through to them.

4. I usually know how to get through to students.

5. Most of a student's school motivation depends on the home environment, so I have limited influence.

6. There is a limited amount that I can do to raise the basic performance level of students.

7. I am successful with the students in my class.

8. I am uncertain how to teach some of my students.

9. I feel as though some of my students are not making any academic progress.

10. My students' peers influence their motivation more than I do.

11. Most of a student's performance depends on the home environment, so I have limited influence.

12. My students' peers influence their academic performance more than I do.

Please rate the following items based on your own self-perceptions. Your rating should be on a 6-point scale where 1 = disagree very strongly to 6 = agree very strongly.

(1) Disagree very strongly  (2) Disagree  (3) Disagree just a little  (4) Agree just a little  (5) Agree  (6) Agree very strongly

1. I know how to help my child do well in school.

2. I don’t know if I’m getting through to my child.

3. I don’t know how to help my child make good grades in school.

4. I feel successful about my efforts to help my child learn.

5. Other children have more influence on my child’s grades than I do.

6. I don’t know how to help my child learn.

7. I make a significant difference in my child’s school performance
Appendix M: Individual Student Interview Transcripts

STUDENT A INTERVIEW

THOMPSON: Can you tell me what the term achievement gap means to you? Have you ever heard that term before?

STUDENT A: Achievement gap?

THOMPSON: Yeah

STUDENT A: I haven’t heard that before

THOMPSON: As a High School student, how do you feel your academic ability compares to those of other students?

STUDENT A: How I feel?

THOMPSON: Yeah, how do you feel as a student? How do you feel compared to other students here?

STUDENT A: Good. Good, like when we have tests and stuff, I raise my hand to ask for help and stay after school and work on this and work on that to get my grade back up.

THOMPSON: Ok, very good. Do you feel like, after being in Honors Biology, do you belong in Honors Biology?

STUDENT A: C, it depends on what we do in there and how we take quizzes and stuff.

THOMPSON: Ok, very good. Do you believe the teacher and the other students think you belong in the class?

STUDENT A: The teacher believes me but I don’t know about the students because they don’t come up to me and ask me stuff.

THOMPSON: What are some of the differences between your standard courses and Honors Biology? The academic rigor, the people in the classes, the expectations, the behavior in the classes?

STUDENT A: The behavior like, some students they don’t pay attention and I’ll be telling them to pay attention. They still don’t do it so I have to move to a different seat to pay attention.

THOMPSON: Can you describe any successes you’ve had in Honors Biology? Anything that’s gone really well?
STUDENT A: We just did a lab today about the temperature changes when you put hot water, cold water in warm temperature. How the plant had C02 bubbles coming up. We had to count how many times it comes up in each minute.

THOMPSON: Do you think you did a good job on that one?

STUDENT A: Yes

THOMPSON: Describe an challenges you had in Honors Biology

STUDENT A: The first time, she gave us a pre-test. It was like a college-level, so everybody was trying their hardest to do it. Some people got some right and some people got none of them right. When I first did it, I went back over my test. The ones I didn’t know, I skipped it, and the ones I did know I did them first and came back to the ones I didn’t know.

THOMPSON: How does being in an honors course if at all, change your self-esteem?

STUDENT A: I don’t know. Good I guess.

THOMPSON: When you found out you were taking honors classes did you feel good about yourself, or did you have any feeling at all towards it?

STUDENT A: I feel good. When I was in middle school, I had two teachers in one class, and this year I have one teacher in each class.

THOMPSON: How has Honors Biology changed you as a student? Do you spend more time studying the higher expectations they might have for you; do you have higher expectations for yourself? How has Honors Biology changed you as a student, if at all?

STUDENT A: It changed me because I knew some teachers. When I go to a different class, I meet the teacher and the students that I don’t know and see if the can help me with this homework or that homework, and see if they can help me pass to another grade.

THOMPSON: What grade do you expect to earn in Honors Biology? You had a C in the marking period. At the end of the year, what grade do you think you’ll end up with?

STUDENT A: AT LEAST a B or an A

THOMPSON: Name one thing you like about the class and one thing you don’t like about the class.

STUDENT A: I like when we do activities. I don’t like the tests and quizzes.

THOMPSON: How often do you have tests and quizzes?
STUDENT A: Almost every 2 or 3 weeks

THOMPSON: And how often do you do the activities—the labs?

STUDENT A: We do labs almost every day. We do a warm up first, and she talks about how we’re gonna do this, and then sets everybody in a group and do a different lab.

THOMPSON: has this course encouraged you to take more honors courses or possibly an AP course as you continue HS? Do you think that now you’re in an honors course and getting a C and hope to get an A or a B, do you think you’ll take more courses or an AP course before you graduate?

STUDENT A: I would take AP classes help me with that class. If I don’t get an A or a B, I would take the AP class and help me to get that.

THOMPSON: has this course had any impact, positive or negative, on your plans to attend or not attend college?

STUDENT A: Positive

THOMPSON: Were you thinking about attending college before you got to HS?

STUDENT A: Yes

THOMPSON: and you’re thinking more about it now?

STUDENT A: yes

THOMPSON: Has this course changed you as a student? We talked a little about the way you go about getting help. Have you learned more strategies to be better at note-taking, study habits, how to work with peers, that type of stuff?

STUDENT A: When we watch a video, like a brainstorm, they tell us to take out papers to write notes down. Everybody had their whole paper filled up so we can learn and re-read all the notes and take a pre-test to see what we know. We take tests the following week, like Wednesday or something, and she tells us to state more of what we know and don’t know, and you see that if you study harder, you can get the questions right.

THOMPSON: Ok, so you learned the benefits of studying. Do you feel like you are treated differently than other students in this class?

STUDENT A: Yeah. Last year, I was getting bullied and kicked around, but this year everybody just changed. They don’t put their hands on me or hit me or anything.
THOMPSON: Do you interact differently with your classmates in this Honors Biology or your honors US History class compared to your other standard-level classes? Are your relationships with students in this class any different than your standard classes?

STUDENT A: Sometimes. It depends how people act when the teacher tells them not to talk and stuff.

THOMPSON: Do you think there is less disruption and playfulness in the honors class than your standard classes?

STUDENT A: They play around too much. They do get their work done, but they play around too much and talk back to the teacher. It’s not cool to talk back to a teacher.

THOMPSON: Is that in Honors Biology?

STUDENT A: (inaudible)

THOMPSON: Ok. Last question: do you have any friends in honors classes, and have you made any new friends in your honors classes?

STUDENT A: The people who went to [patched], I got to know them in the third week of school. And the people that came from Deeds, I already knew them from Deeds. They basically changed their life and stuff. The people from [patched] Middle, I knew half of them, but I met new people I didn’t know.

THOMPSON: Do you have any questions for me or anything else you want to add?

STUDENT A: I’m good.

THOMPSON: Thank you.
STUDENT B INTERVIEW

THOMPSON: Can you tell me what the term achievement gap means to you?

STUDENT B: Achievement gap? I’ve heard of achievement.

THOMPSON: Ok, we’ll go to question number 2. As an [_____] student, how do you feel your ability compares to the other students?

STUDENT B: I think I’m doing well. I’m doing good with the other students, but I could do better.

THOMPSON: Do you feel you belong in Honors Biology?

STUDENT B: No.

THOMPSON: Why do you say no?

STUDENT B: I say no because it’s hard. It’s hard to learn new things every week and take a test every week.

THOMPSON: Yeah, that’s a lot of information. Are you taking any other honors classes?

STUDENT B: Yes, I’m taking Honors History.

THOMPSON: All students in 9th grade take Honors Biology and Honors History, right?

STUDENT B: Mmhmm.

THOMPSON: Well that’s something to be proud of. Do you believe others—teachers and students—think you belong in Honors Biology?

STUDENT B: Yes. I say yes because all teachers should think students should be in honors classes, because if they’re in there then they must have done something to be in there.

THOMPSON: You say all teachers should, but does your teacher think so? I don’t know your teacher so I’m asking you.

STUDENT B: Yes, she does.

THOMPSON: What are some differences between your standard classes and Honors Biology? The rigor, the students in the class, the expectations, the behavior in the class?

STUDENT B: My standard courses are much easier, but the kids in that class don’t act mature like the kids in the honors class.
THOMPSON: So you’re saying the behavior is better in Honors Biology. How about your behavior?

STUDENT B: Bad

THOMPSON: In all classes or in Honors Biology?

STUDENT B: All classes.

THOMPSON: What is bad behavior?

STUDENT B: Talk when my teacher’s talking, don’t take notes, not listening, playing around too much.

THOMPSON: So how were you able to still do well?

STUDENT B: By staying after school when no one’s around, listening to my teacher.

THOMPSON: Do you stay after school for your other classes or just biology?

STUDENT B: Just biology and history.

THOMPSON: Are those teachers available more after school?

STUDENT B: Yes.

THOMPSON: Describe any successes you’ve had in Honors Biology. What are some good things you’ve done in there?

STUDENT B: I do good on my labs.

THOMPSON: So talk about a lab you did well on. Did you surprise yourself or your lab partner? Why would you say it was a success?

STUDENT B: The rest of my grades in that class are either a D or E, but my labs are like a B or A.

THOMPSON: Wow. So that’s an interesting point. What you describe was a student that has a hard time taking notes, sitting quietly, but when you’re doing something hands on like a lab you do well. Why do you think that is?

STUDENT B: Because I can talk to others and move around.

THOMPSON: Describe any challenges you’ve had in Honors Biology.

STUDENT B: Paying attention.

THOMPSON: Is that just in that class or in all classes?
STUDENT B: All classes.

THOMPSON: How has being in an honors course changed, if at all, your self-esteem?

STUDENT B: Not much.

THOMPSON: I don’t want to lead you here, but are you proud to be in honors classes?

STUDENT B: Yeah.

THOMPSON: How has Honors Biology changed you as a student? You talked about staying after school. Do you do more studying? Do you have higher expectations for yourself?

STUDENT B: Yes, I have higher expectations for myself.

THOMPSON: What grade do you expect to earn in Honors Biology for the year?

STUDENT B: An A. I think I might just get an A.

THOMPSON: Name one thing you like about the class and one thing you don’t like about the class.

STUDENT B: I like that my teachers give me help when I need help.

THOMPSON: And the labs—it sounds like you like them also.

STUDENT B: Yeah

THOMPSON: What don’t you like? I’m not going to tell the teacher.

STUDENT B: I’m trying to figure it out… I don’t like when we have a lot of work and we don’t have time to do it.

THOMPSON: How often is that?

STUDENT B: Every day.

THOMPSON: Do you think it’s just you, or do a lot of the students not have enough time to do work?

STUDENT B: A lot of the students.

THOMPSON: So what does the teacher do? Is that when they’re available after school, or do they move on the next day?

STUDENT B: Yeah, they move on the next day, unless we stay after and we could get help.
THOMPSON: Is the teacher available every day or just one day?

STUDENT B: Some days.

THOMPSON: Ok, a couple days a week. Has this course encouraged you to take more honors or possibly an AP course as you continue high school? Since you were exposed to an honors course where you think you might get an A, do you think you would be more likely to take more honors courses?

STUDENT B: Yes

THOMPSON: When you were in middle school and you thought about being in high school, did you think you would be in an honors course?

STUDENT B: Yes

THOMPSON: Has this course had any impact, positive or negative, on your plans to attend or not attend college?

STUDENT B: Yes

THOMPSON: Explain. Did you think you were going to attend college before you went to high school?

STUDENT B: No

THOMPSON: Do you think you would get into college now?

STUDENT B: After I attend high school, yes.

THOMPSON: Do you feel more confident, less confident about it, or the same?

STUDENT B: I feel right in the middle. I don’t know if I’ll make it, but I want to.

THOMPSON: For what it’s worth, I went to college and I took honors courses in high school. I’m sure you can do it. Has this course changed you as a student? Are you a better student or worse student? DO you study more or less? Take notes better? How are you different as a student after taking an honors course?

STUDENT B: I study more and take more time trying to study instead of going outside after school.

THOMPSON: IN your honors classes or in all your classes?

STUDENT B: In my honors classes.
THOMPSON: I don’t want to lead you in your answer, but why do you think you study more for honors classes?

STUDENT B: Because my honors classes are harder than my standard classes.

THOMPSON: Do you feel like you’re treated any differently than the other students in the class?

STUDENT B: No.

THOMPSON: Do you interact differently with your classmates in your honors classes compared to your other classes?

STUDENT B: No.

THOMPSON: So you’re as playful and talkative in all your classes.

STUDENT B: Yes.

THOMPSON: That’s good—you are who you are. Do you have any friends in honors classes and have you made any new friends in your honors classes?

STUDENT B: Yes, I made new friends and I already had friends.

THOMPSON: Your new friends—would you have met them if you were not in Honors Biology?

STUDENT B: Yes.

THOMPSON: It’s not that big of a school, right?

STUDENT B: Yes.

THOMPSON: That’s all the questions I have. Do you have any questions for me?

STUDENT B: No, sir.
THOMPSON: Can you tell me what the term achievement gap means to you?

STUDENT C: Achievement gap?

THOMPSON: Have you heard that term?

STUDENT C: No

THOMPSON: You know what—you’re the third person I’ve interviewed and no one has, so that’s probably a poor question. Question two: As an [ ] student, how do you feel your academic ability compares to those of other students?

STUDENT C: Like making friends with them?

THOMPSON: In this building in this school, do you feel like you’re a good student, bad student, average student?

STUDENT C: Yeah. A good student.

THOMPSON: Why would you say you’re a good student?

STUDENT C: Some of my classes I don’t have a lot of friends in there, so I ask my teacher if I can listen to music. He or she says ‘yeah’ and I just do my work.

THOMPSON: Are you taking any other honors courses besides Honors Biology?

STUDENT C: Yeah, Honors US Government.

THOMPSON: US Government or US History?

STUDENT C: Yeah, US History.

THOMPSON: Every 9th grader is taking HONORS BIOLOGY and HONORS US HISTORY, right?

STUDENT C: Yeah.

THOMPSON: Do you feel like you belong in honors classes, specifically HONORS BIOLOGY?

STUDENT C: Yeah.

THOMPSON: Do you feel like you can do all the work?

STUDENT C: Yeah.
THOMPSON: Do you think the teacher and the other students think you belong in HONORS BIOLOGY?

STUDENT C: Yeah.

THOMPSON: What are some of the differences between your standard courses and HONORS BIOLOGY? Rigor, difficulty, student expectation, student composition, student behavior, those types of things.

STUDENT C: Last year, there were no honors classes in middle school, so in high school there’s more work.

THOMPSON: Do the teacher or the students act different in honors classes?

STUDENT C: No, well maybe, sometimes.

THOMPSON: mostly just more work then?

STUDENT C: Yeah, but kids care more about the work.

THOMPSON: Describe any successes you’ve had in HONORS BIOLOGY. Anything that’s went really well.

STUDENT C: Homework and labs. Labs are good for sure.

THOMPSON: What part of the class do you like the most?

STUDENT C: Getting in a group and teamwork in my lab group.

THOMPSON: The labs? Why do you like the labs more?

STUDENT C: Because you actually know stuff. You get to do it instead of the teacher just talking up there. If the teacher’s just talking up there, I don’t get it right, but if a teacher makes us work together in the lab, I understand it more.

THOMPSON: Ok. Describe any challenges, if any, that you’ve had in HONORS BIOLOGY.

STUDENT C: Just more work.

THOMPSON: Do you ever stay after to work with the teachers?

STUDENT C: Yeah.

THOMPSON: How often?
STUDENT C: I ask what my grade is and if it’s down, like it’s a D, I stay after and ask for work.

THOMPSON: Do you stay after for any of your other classes?

STUDENT C: I do, but if I ask and they say I’m doing good, I won’t stay after.

THOMPSON: Out of all of your classes, what do you think you’ve stayed after the most for?

STUDENT C: HONORS BIOLOGY

THOMPSON: How does being in an honors course change your self-esteem, if at all? Do you feel good about yourself, being in an honors course?

STUDENT C: Yeah.

THOMPSON: How has being in Honors Biology changed you as a student? Do you have higher expectations for yourself, do you do more studying?

STUDENT C: You get more stuff to do. It’s different from middle school. I thought it was going to be like the same thing, but there’s a lot of work to do. There’s not a lot of work, but for me, it is and I understand because it’s an honors class.

THOMPSON: And you don’t mind it?

STUDENT C: No.

THOMPSON: What grade do you expect to earn in HONORS BIOLOGY?

STUDENT C: A C or a B.

THOMPSON: What grade do you have now?

STUDENT C: A D.

THOMPSON: Percentage-wise, what was it?

STUDENT C: Like a 60 or something like that.

THOMPSON: Ok, so you’re close to a C. Name one thing you like and one thing you don’t like about HONORS BIOLOGY.

STUDENT C: Working in groups.

THOMPSON: You like working in groups?

STUDENT C: Yeah. I don’t like just staring at the teacher when he talks.
THOMPSON: Ok, I think that’s very common. Has this course encouraged you to take more honors or possibly an AP course when you continue high school?

STUDENT C: Yes.

THOMPSON: When you were in middle school, did you think you were going to take honors or AP courses in high school?

STUDENT C: Yes.

THOMPSON: So you’re pretty confident you can get it done?

STUDENT C: Yeah.

THOMPSON: Has this course had any impact, positive or negative, on your plans to attend or not attend college?

STUDENT C: No.

THOMPSON: Do you think you might attend college?

STUDENT C: Yeah.

THOMPSON: So did this course make you feel more strongly about maybe you can or maybe you can’t?

STUDENT C: It did make me feel more strong.

THOMPSON: That you can?

STUDENT C: Yeah.

THOMPSON: Because you can get the work done. Has this course changed you as a student?

STUDENT C: No.

THOMPSON: Do you feel like you are treated any differently than other students in the class?

STUDENT C: No.

THOMPSON: Do you interact differently with the students in HONORS BIOLOGY compared to the students in your other classes?

STUDENT C: No.
THOMPSON: Ok. And what I’ve said to some of the other students is because there’s more work—and all the students described that’s the biggest difference—do you find yourself talking more, messing around more, off task more, or are you pretty much the same student in all your classes?

STUDENT C: Same student in all my classes.

THOMPSON: That’s a good thing. Do you have any friends in honors classes and have you made any new friends you might not have made if you weren’t in honors classes?

STUDENT C: Yeah, I made new friends.

THOMPSON: That is all the questions I have, any questions for me?

STUDENT C: No.
STUDENT D INTERVIEW

THOMPSON: Can you tell me what the term achievement gap means or what it means to you?

STUDENT D: Like achieve… achieve in amount of time?

THOMPSON: Ok, and that’s one of the ones I said might be poorly written. That hasn’t been a good question for anybody. The other one might be a little more straightforward. As an ___ student, how do you feel your academic ability compares to the other students in the school? Do you see yourself as a good student, great student, average student, below average, not so good…?

STUDENT D: Good student.

THOMPSON: Why would you say you’re a good student?

STUDENT D: I get my work done and not late to classes.

THOMPSON: Are you taking any other honors classes? I know all 9th graders take HONORS BIOLOGY and HONORS US HISTORY, are you taking any others?

STUDENT D: NO.

THOMPSON: Do you feel like you belong in Honors Biology and Honors US History?

STUDENT D: Yes.

THOMPSON: Do you believe the teachers think you belong in honors classes—Honors Biology?

STUDENT D: Yeah.

THOMPSON: What are some differences between your standard classes and Honors Biology? It could be the amount of work, the way the teacher teaches…

STUDENT D: Honors they give us homework every class, and standard we get it every once in a while.

THOMPSON: Do you do the homework?

STUDENT D: Yeah.

THOMPSON: Do you stay after school much for Honors Biology?

STUDENT D: Yeah.
THOMPSON: More than your other classes?

STUDENT D: Yeah.

THOMPSON: Describe any successes you’ve had in Honors Biology.

STUDENT D: I ace my quizzes and tests.

THOMPSON: Some of the other students didn’t like the quizzes and tests; they liked the labs. What do you think about the labs?

STUDENT D: They’re fine.

THOMPSON: So you’re probably a pretty good student—quizzes, tests, labs, you like it all?

STUDENT D: (nods yes)

THOMPSON: Describe any challenges, if any, that you’ve had in Honors Biology?

STUDENT D: Doing all the homework.

THOMPSON: So, finding the time is difficult. How does being in an honors class change your self-esteem? Sometimes people might feel like, I’m in a pretty tough class, I feel good about myself. Are you proud to be in honors classes?

STUDENT D: Yes.

THOMPSON: When you were in middle school did you think you would take honors classes?

STUDENT D: Yes, I hoped I would.

THOMPSON: How has Honors Biology changed you as a student? Do you study more or have higher expectations for yourself?

STUDENT D: I Study more.

THOMPSON: Do you study more for your honors classes or do you study more in everything?

STUDENT D: Everything.

THOMPSON: Oh, good. What grade do you expect to earn in the class at the end of the year?

STUDENT D: A
THOMPSON: very good. Name one thing you like and one thing you don’t like about the class.

STUDENT D: I like it.

THOMPSON: I’m not going to talk to the teacher, so if there’s anything you want to say, you can. A lot of other students talked about this—almost everybody seemed to think the labs and the group work in biology was one of the best things in any of their classes. Is that something you really enjoy or do you like all of it?

STUDENT D: I enjoy the labs.

THOMPSON: Why do you enjoy the labs?

STUDENT D: Because we get out of our seats and can walk around.

THOMPSON: Has this course had any impact, positive or negative, on your plans to attend college? Do you plan to go to college?

STUDENT D: Yeah.

THOMPSON: Does taking an honors course make you think more about college or less about college?

STUDENT D: More.

THOMPSON: Has this course changed you as a student?

STUDENT D: No.

THOMPSON: You were a pretty good student before. Do you feel you are treated differently than other students in your class?

STUDENT D: No.

THOMPSON: Do you interact differently with students in your honors class than in your other classes?

STUDENT D: No.

THOMPSON: Do you have any friends in your honors classes, and did you make any new friends that you wouldn’t have made if you had not taken an honors class?

STUDENT D: Yes.

THOMPSON: Yes you had friends?
STUDENT D: Yeah.

THOMPSON: And you made new friends?

STUDENT D: Yeah.

THOMPSON: Ok. Do you have any questions for me?

STUDENT D: No.

THOMPSON: Alright, that wasn’t bad. Thank you very much.
STUDENT E INTERVIEW

THOMPSON: Have you heard of the term achievement gap?

STUDENT E: No.

THOMPSON: Ok. That one, no one has, so we'll skip it. As an [ ] student, how do you feel your academic ability compares to other students.

STUDENT E: My academic ability? What do you mean?

THOMPSON: Do you feel like you’re a good student, bad student, average?

STUDENT E: Average.

THOMPSON: Ok. Most of us are average. Do you feel like you belong in Honors Biology?

STUDENT E: A little bit, but not really. I don’t think it helps me in any way.

THOMPSON: What do you mean by that?

STUDENT E: I don’t want to be a scientist. I don’t want nothing to do with science.

THOMPSON: Ok, we’ll get more to that later. Do you believe others, specifically the teacher and the students, believe you belong in that class?

STUDENT E: Yeah, I pay attention and I do the work and everything, but science is hard sometimes but certain things not.

THOMPSON: Ok. A lot of the students talked about really liking the labs and the group work.

STUDENT E: Yeah, I really like that.

THOMPSON: What are some of the differences between your standard courses and Honors Biology? Is it more work, is it harder? What are the students like? What are the teachers like?

STUDENT E: The work isn’t really like any other class. The labs are more fun than math or social studies. In science, labs are cool to me.

THOMPSON: Ok, sorry about that interruption. Can you describe any successes that you’ve had in Honors Biology? What’s gone well this year in Honors Biology?

THOMPSON: How about some challenges? What doesn’t go as well?

STEDENT E: Like, when you go to a month and then switch it to something else. I know we probably learned it in 7th grade but we might forget it.

THOMPSON: some of the students were saying the class moves fast—so you cover something one day, and then move on to something the next day.

STEDENT E: That’s how it is.

THOMPSON: That’s challenging—moving so quickly?

STEDENT E: It’s not moving quickly. It’s like, sometimes my teacher will teach stuff real fast and you’re supposed to know it right then, you know. Sometimes I don’t click onto it.

THOMPSON: Do the labs help you click on to it?

STEDENT E: Later on in the class I’ll catch on to it.

THOMPSON: How does being in an honors course change your self-esteem? Are you proud of being in an honors class?

STEDENT E: Not really; I don’t see it being something special. I mean, it’s supposed to be, but I don’t see it like that.

THOMPSON: Why don’t you see it like that?

STEDENT E: It seems like everybody has it.

THOMPSON: Did you tell your family you were in honors?

STEDENT E: Yeah. My grandmother was surprised.

THOMPSON: Surprised, why?

STEDENT E: She don’t know me like that. Doing good in school. She was surprised, but happy. I guess I did like that a little.

THOMPSON: How has Honors Biology changed you as a student? Do you study more? Do you have higher expectations?

STEDENT E: No.

THOMPSON: Do you study more for Honors Biology?
STEDENT E: No, I really only pay attention to that class because it’s like a core class for me, because it’s science.

THOMPSON: Do you stay after at all for any of your other classes?

STEDENT E: Every Tuesday.

THOMPSON: What class do you stay for the most?

STEDENT E: Either math, science, or social studies.

THOMPSON: Who is your science teacher?

STEDENT E: Mr. [ ]

THOMPSON: What grade do you expect to earn in Honors Biology by the end of the year?

STEDENT E: Definitely over a D, probably a C or a B.

THOMPSON: Ok, that’s pretty good. Name one thing you like and one thing you don’t like about the class.

STEDENT E: I like the labs and the thing I don’t like… there’s nothing really wrong with the class, but I don’t click. It’s not my specialty; I don’t like it.

THOMPSON: Do you think it’s because it’s an honors class or because it’s science?

STEDENT E: I think it’s just science.

THOMPSON: What did you think of your science class in middle school? Same thing?

STEDENT E: Yeah.

THOMPSON: After taking two AP classes—because you’re in AP Bio and AP Us History—do you think—I’m sorry, Honors Biology and Honors US History, do you think you might try to take another AP or honors class?

STEDENT E: Unless they put me in it; if they feel like I might be in it, I wouldn’t take it.

THOMPSON: So you wouldn’t volunteer, but if they put you in it…

STEDENT E: Yeah, I wouldn’t switch out.

THOMPSON: Why wouldn’t you volunteer to take on your own?
STEDENT E: I don’t want to struggle in the class if I don’t feel like I’m supposed to be in it. I know I’m supposed to be standard, but I don’t know about AP classes, unless I’m supposed to be in it.

THOMPSON: But you feel like you belong in Honors Biology? You can do the work—I mean, you got a C.

STEDENT E: I know I can do the work.

THOMPSON: Ok. Has this course had any impact on your plans to attend college or not? Do you think about going to college?

STEDENT E: Yeah, a lot.

THOMPSON: Has this course made you think any more about going or not going; like you can do it or can’t do it?

STEDENT E: Not really. Not unless I do a science class.

THOMPSON: Has this course changed you as a student at all? Do you feel like you’re a better student, worse student, more efficient?

STEDENT E: Not really. I don’t think it changed anything.

THOMPSON: Do you feel like you’re treated differently than other students in this class?

STEDENT E: No.

THOMPSON: Do you interact differently with your classmates in Honors Biology compared to other classes?

STEDENT E: People that I know, I talk to them, and some people—I talk to everybody in that class, really.

THOMPSON: Do you think in your honors class and more Honors Biology, are students more serious and is there less playing around or less talking, or not necessarily?

STEDENT E: It all depends on what we’re doing. If we’re doing a lab, everybody does the lab. Paperwork—writing—that’s when it starts up because people get bored.

THOMPSON: Do you have any friends in honors classes?

STEDENT E: Yeah.

THOMPSON: have you made any new friends in your honors classes that you might not have med otherwise?
STUDENT E: Yeah.

THOMPSON: Do you have any questions for me?

STUDENT E: Why are you asking questions about Honors Biology?

THOMPSON: I’m going to stop it here.
STUDENT F INTERVIEW

THOMPSON: Can you tell me what the term achievement gap means to you? Have you ever heard of achievement gap?

STUDENT F: (silence)

THOMPSON: No one has yet, so that was a bad question. As an [ ] student, how do you feel your academic ability compares to those of other students?

STUDENT F: Kind of equal.

THOMPSON: Ok, and do you feel like you’re a pretty average student?

STUDENT F: Yeah.

THOMPSON: Most people feel like they’re average students. Do you feel like you belong in Honors Biology?

STUDENT F: I’m not gonna say I don’t, but Honors Biology and the other one are pretty much the same deal.

THOMPSON: All 9th graders are taking Honors Biology and Honors US History, correct? Do you believe the teachers and other students in the class feel like you belong there?... Do you have an opinion one way or another?

STUDENT F: no

THOMPSON: Ok. What are some of the differences between your standard courses and Honors Biology?

STUDENT F: Pretty much everything’s the same as my other classes.

THOMPSON: Ok, so you don’t see much of a difference?

STUDENT F: No.

THOMPSON: Describe any challenges you’ve had in Honors Biology.

STUDENT F: The DBQ, when I first did it again, I forgot how to do it. Then he taught me, and I understood it again, and it’s easier.

THOMPSON: I’m not a science person. What does DBQ stand for?

STUDENT F: When you do a test, it’s an essay thing.
THOMPSON: Ok. How does being in an honors class change your self-esteem? Are you proud of being in an honors class?

STUDENT F: It really don’t matter to me.

THOMPSON: So when you saw your schedule and you see your report card or you tell relatives you’re in two honors classes, it doesn’t make you feel good? It’s ok if it doesn’t.

STUDENT F: No. My mom was surprised though.

THOMPSON: Did you like surprising her?

STUDENT F: Maybe, well, she was probably proud of me. Thant was cool I guess.

THOMPSON: How has Honors Biology changed you as a student?

STUDENT F: Not that I know.

THOMPSON: Do you find yourself doing more homework for your honors classes?

STUDENT F: NO.

THOMPSON: Do you ever stay after school?

STUDENT F: Yeah, a lot.

THOMPSON: What classes do you stay after for?

STUDENT F: Biology.

THOMPSON: Ok, so you are doing more work. What grade do you expect to earn at the end of the year in Honors Biology?

STUDENT F: At least a B

THOMPSON: Name one thing you like and one thing you don’t like about the class.

STUDENT F: I like everything… I don’t like everything.

THOMPSON: You do like everything or you don’t like everything?

STUDENT F: I’m kind of in the middle.

THOMPSON: What’s your favorite part of the class?

STUDENT F: Doing the projects and stuff.

THOMPSON: Labs?
STEDENT F: Yeah, the labs.

THOMPSON: What do you like about the labs?... There’s not a right answer—if you like to talk to your friends that’s fine; if you like to do the hands-on stuff…

STEDENT F: Hands-on stuff.

THOMPSON: Ok. What do you like the least?

STEDENT F: Going on the computers and searching stuff up.

THOMPSON: You’re the first person who’s said that. Most people don’t like the lecture part of it. Has this course had any positive or negative impact on your plans to attend or not attend college?

STEDENT F: No

THOMPSON: Do you plan on going to college?

STEDENT F: Yes

THOMPSON: Does taking an honors class make you feel any better or worse about going to college? Do you feel more confident, less confident?

STEDENT F: More confident.

THOMPSON: Has this course changed you as a student in any other way?

STEDENT F: No.

THOMPSON: Were you a good student before?

STEDENT F: Yes.

THOMPSON: Do you feel you’re treated differently than other students in the class?

STEDENT F: No.

THOMPSON: Do you interact differently with your classmates in Honors Biology compared to your standard classes? Do you do more talking, more messing around…?

STEDENT F: No

THOMPSON: Do you have any friends in honors classes?

STEDENT F: Yeah
THOMPSON: Have you made any new friends you might not have made if you weren’t in honors classes?

STUDENT F: Yes

THOMPSON: That’s all the questions I’ve got. Do you have anything you want to say or ask me?

STUDENT F: No.
STUDENT G INTERVIEW

THOMPSON: Have you ever heard of the term achievement gap?

STUDENT G: I know achievement is a goal that you set to reach.

THOMPSON: As an __________ student, how do you feel your academic ability compares to the other students at the school?

STUDENT G: Good, because I have good grades to play football.

THOMPSON: Do you feel like you belong in the Honors Biology class?

STUDENT G: yeah, because I am capable of being successful.

THOMPSON: Do you believe the teacher and the students in the class think you belong there?

STUDENT G: Yes.

THOMPSON: What teacher do you have?

STUDENT G: Mr. Yue (spelling?)

THOMPSON: What are some of the differences between your standard courses and Honors Biology? I know all 9th graders take Honors Biology and Honors US History. Are all your other courses standard-level courses?

STUDENT G: Yes

THOMPSON: What are some of the differences between your Honors Biology and your standard courses? More work…

STUDENT G: It’s more advanced work and more projects and stuff.

THOMPSON: Do you spend more time on Honors Biology?

STUDENT G: Yeah.

THOMPSON: I know a lot of students stay after school…

STUDENT G: I stay after school to do some work on it.

THOMPSON: Do you stay after school for other classes?

STUDENT G: I stay after sometimes for student seminar.
THOMPSON: Describe any successes that you’ve had in the class. Anything that went really well.

STUDENT G: On my Honors Biology test, I passed it—my unit 2 test—I really had to really study.

THOMPSON: Anything other than studying help maybe?

STUDENT G: By paying attention more in class.

THOMPSON: Do you think the labs reinforce the stuff the teacher teaches? Do you learn a lot doing the labs?

STUDENT G: Yeah we do labs every week. Sometime more than that.

THOMPSON: Describe any challenges that you’ve had in Honors Biology. Is it challenging because of homework, because the periods are long?

STUDENT G: I spend a lot of time on homework because I don’t really have help. I’m by myself.

THOMPSON: Do you stay after school for that class often?

STUDENT G: Yeah.

THOMPSON: Like how often

STUDENT G: An hour.

THOMPSON: An hour a week or a day?

STUDENT G: An hour a week.

THOMPSON: Ok, that’s pretty significant. How does being in an honors course change your self-esteem, if at all? What I’m asking is, do you feel proud to say you’re in an honor’s class?

STUDENT G: Yeah because I know I can do it and I’m doing well in the class.

THOMPSON: (repeat). How does your family feel? Do you tell grandparents, aunts, uncles, that you’re in honors classes?

STUDENT G: Yeah.

THOMPSON: Are you proud of that?

STUDENT G: Yeah.
THOMPSON: I would be proud of that, too. I didn’t take any honors classes in high school. How has Honors Biology changed you as a student? You talked about some of this before—having a class with higher expectations and more homework.

STUDENT G: I can learn a lot more stuff.

THOMPSON: Is that because you’ve learned strategies to take notes? What have you learned to help you learn more?

STUDENT G: Last year I had a teacher who taught me how to take notes.

THOMPSON: So you’ve learned avid note-taking strategies. Are you avid now?

STUDENT G: Yeah.

THOMPSON: What grade do you expect to earn at the end of the year?

STUDENT G: Most likely a B

THOMPSON: What grade did you get first marking period?

STUDENT G: C

THOMPSON: Still good enough to play football. And with all the practices it’s got to be hard doing homework. Name one thing you like and one thing you don’t like about the class.

STUDENT G: one thing I like is how we do labs. Labs are interesting; you get to interact with other people. One thing I don’t like is being there for an hour and 90 minutes. It’s really long.

THOMPSON: I think most people like the labs. Has this course encouraged you to take more honors or possibly an AP course as you continue high school?

STUDENT G: Probably.

THOMPSON: So last year, did you see yourself taking honors courses or did you think much about it?

STUDENT G: I didn’t think much about it until my teachers told me I could do it.

THOMPSON: So you think you might schedule one next year?

STUDENT G: Yeah.
THOMPSON: That’s really good. Has this course had any impact, positive or negative, on your plans to attend college? Before you were in this class, did you plan on going to college?

STUDENT G: Yeah.

THOMPSON: What do you think about going to college now?

STUDENT G: I feel good about going to college now. I know it’s interesting and you want to learn stuff when you go to college.

THOMPSON: So having a hard class and being able to do it makes you feel like you can go to college?

STUDENT G: Yeah.

THOMPSON: Has taking this honors course, a rigorous course, change you as a student at all?

STUDENT G: Yeah. At first I didn’t read through my homework as much, but with me taking this honors class I do more homework.

THOMPSON: As you realize that the expectations are and you realize you have to work harder, you decide you’ll work harder?

STUDENT G: Yeah.

THOMPSON: Do you feel like you’re treated differently in this class compared to the other students?

STUDENT G: No, I think I’m treated the same as any other student.

THOMPSON: How do you interact differently with your classmates in Honors Biology compared to your standard classes?

STUDENT G: The standard class mostly you can work with your partner, but you gotta do it by yourself. The teacher can’t tell you the answer but he can help you.

THOMPSON: That’s in standard or Honors Biology?

STUDENT G: That’s in Honors Biology, the teacher can’t show you how to do it. He can show you how to do it, but he can’t tell you the answer. Standard classes you have a partner that helps you out.

THOMPSON: So the teacher expects you to get the answer on your own, and some of the standard classes will give you the answer?
STUDENT G: Yeah.

THOMPSON: Do you have any friends in honors classes, and have you made any new friends being in honors classes?

STUDENT G: Yeah, one of my friends from football is in honors.

THOMPSON: Have you made any friends in Honors Biology that you wouldn’t have met in Honors Biology?

STUDENT G: Yeah.

THOMPSON: Those are all my questions. Do you have any questions for me?

STUDENT G: No
Appendix N: Parent Interview Data

1. Do you believe others (teachers, students) think your child belongs in Honors Biology?

Parent A- I wasn’t so sure in the beginning, but I believe in the teacher, he is a very good teacher

Parent B- Yes

Parent C- They better…he is in there you know, so they better believe in him

Parent D- yeah, she belongs…they all know she belongs especially the teacher

Parent E- Definitely

Parent F- I don’t know, well I don’t know why not. I don’t know the kids, but the teacher and my son are connected.

Parent G-Maybe, I think so, he is doing ok so yes.

2. Describe any challenges or successes your child has had in Honors Biology.

Parent A- umm, he is doing good…maybe the tests have been hard. His grades have been okay though.

Parent B- He just loves his teacher. Stays after school even and does homework. Mostly good stuff, positive.

Parent C- The homework (challenge). Sometimes, most times it gets done, but sports and finding the time. You know…

Parent D- Help days after school, she stays after all the time. She gets the work done and has very good grades.

Parent E- He just don’t like science…never has.

Parent- I don’t’ know…good as far as I can tell.

Parent G- Not sure

3. What does it mean to you for your child to be in Honors Biology?

Parent A- Finally! Well, I was surprised but he has always been smart. Just not good in school like he should be though.

Parent B-I don’t know…If he can do then it is a positive thing.
Parent C-I am proud of him and it seems to make him proud.

Parent D- It is good for her.

Parent E- As long as he can do it, it is the right thing. I was not so sure at first.

Parent F- I don’t know…hard to say.

Parent G- Have not really thought about it.

4. Has being in an honors course changed your child’s self-esteem?

Parent A- It has helped…doing all that work has helped, he can, he knows he can do it now.

Parent B- I don’t know

Parent C- I don’t know…he does like to show off his report card this year. That never happened before.

Parent D- Maybe, she seems to not give up as easy anymore

Parent E- Not sure

Parent F- It is hard to say

Parent G= I hope, he does the work.

5. What grade do you expect your child to earn in Honors Biology class?

Parent A- He says he is getting an A

Parent B- I would be happy with anything passing, a C would be fine

Parent C- I don’t know

Parent D- Hopefully a B

Parent E- Not sure

Parent F- I don’t know

Parent G- He tell me he is making honor roll, so I guess at least a B

6. Name one thing you like and one thing you don’t like about your child’s class.

Parent A-Homework seems too much, but teacher is nice.

Parent B-I really like the teacher
Parent C-Teacher
Parent D-The teacher really take the time with kids
Parent E-There is lots homework
Parent F-I’m not sure
Parent G- Teacher and homework. Too much homework…

7. Has this course had any impact (positive or negative) on your child’s plans to attend or not attend college?

Parent A-I don’t know
Parent B-He plans to go
Parent C-I hope so
Parent D-She always planned to go, but this should help
Parent E-I don’t know
Parent F-Maybe
Parent G-Maybe, yeah probably

8. Do you believe your child is a better student as a result of being in this course?

Parent A- I’d say so
Parent B-Yes
Parent C-most definitely
Parent D-probably
Parent E-I don’t know, maybe
Parent F-Yes
Parent G-Yes

9. How does your child describe the experience of being African-American in the class?

Parent A-I don’t know
Parent B-Never said nothing
Parent C-fine
Parent D-Don’t know
Parent E-Don’t know
Parent F-African American, don’t know
Parent G-Fine

10. Can you tell me what the term “achievement gap” means to you?

Parent A-Differences in achievement
Parent B-some kids aren’t learning the same as others
Parent C-I am not familiar with that
Parent D-Different groups doing better than other in school
Parent E-I’m not sure
Parent F-The African American kids are not doing as well as the other kids
Parent G-Not sure

11. As an African-American student at the school, how does your child perceive his or her academic ability relative to other students’?

Parent A-He doubts himself sometimes, but he can do it
Parent B-Probably about the same, he can do the work
Parent C-He can do it…he knows this
Parent D-She know she is smart enough to do the work
Parent E-I don’t know, he never was that great in school
Parent F-Not sure
Parent G-Same, probably pretty much average
Appendix O: Teacher Interview Data

1. Has your view on your or your students’ abilities changed throughout the study?

   HS Teacher A- I have taught a wider range of abilities. **THOMPSON:** What has this meant for you as a teacher?  **Teacher A-** I have had to be on top of my game and meet the students where they are, with ability, learning styles, more work but it can be done.

   HS Teacher B- No. **THOMPSON:** Can you explain?  **Teacher B-** I always believed in my students. Sometimes there are things beyond school that keeps them from learning, but in my class, when they are with me, they all learn.

   HS Teacher C- Having taught all levels of Biology, I never doubted any student’s abilities so I would say no.

   MS Teacher A- No, I have only taught Science under current system (Honors). I suppose I am programmed to look for the best, or the best potential in my students. **THOMPSON:** How do you spot this potential?  **MS Teacher A-** A combination of things, it can be different, you just have to be looking for it.

   MS Teacher B-I think all students are able to complete their work…not all students want to complete their work. **THOMPSON-** What do you do then?  **Teacher B-** You tell me…talk with them, call home, try to see what is getting in the way. Can be hard though, takes time, getting to know what is going on with them, where they are...

2. Have your motivational strategies changed during this study? How?

   HS Teacher A- Yes, as I have matured as a teacher I have learned new strategies. **THOMPSON:** Can you explain what types of strategies?  **Teacher A-** Mostly differentiating the lessons to address the individual needs in my class. This means taking the time to plan and know the students. It was tough early on, but now, it is just my routine.

   HS Teacher B-No

   HS Teacher C- Just trying to increase relevance and having early lesson “grabber”. **THOMPSON:** Can you explain more?  **HS Teacher C:** Something to get their attention, something relevant to them. If they can relate, that is often half the battle.

   MS Teacher A- No

   MS Teacher B- Not really
3. What do you think is the very best way to motivate students in this class?

HS Teacher A-Student/Teacher Relationships and rapport

HS Teacher B-Relationship Building.

HS Teacher C-Relevance and relationships

MS Teacher A-Have positive relationships with them

MS Teacher B-Build their confidence. Give them scaffold work they can do and then push them

4. List several factors that have a direct impact on student self-belief in your classroom.

HS Teacher A-Rapport with peers and opportunities to learn or demonstrate learning in various ways.

HS Teacher B-Student and teacher relationships, environmental factors liken their home environment, peer interactions both positive and negative and students knowing how they learn best and building on prior knowledge and success. THOMPSON: Sow how do you accomplish all this in your classroom? HS Teacher A: Differentiation. Getting to know them and treating kids like the unique individual they are.

HS Teacher C-Relationship with teacher, peer relationships, reading ability, home situation, and previous academic experiences. THOMPSON: Relationships have come up a lot. How important in your estimation? HS Teacher C: The most important for sure. I’m not saying that you have to be their friend, but you have to know them and earn their trust.

MS Teacher A-Friends (positive & negative), home life, and student to teacher interaction.

MS Teacher B-Reading ability, bullying, positive peer interaction, and family (beliefs about school/absent family members)

5. How would you describe the effect of this heterogeneous initiative on students?

HS Teacher A-It has lifted up many students but frustrated some. THOMPSON: What do you mean? HS Teacher A- For the majority of students it has been tremendously positive. It has challenged them in a new way and they have risen up, been able to better than many expected, including themselves. Students that struggle are those with low reading ability or little in the way of foundational skills.
HS Teacher B-I believe having a greater number of higher performing peers has positively impacted the special education population in my classroom. I have even had many of my students with disabilities ask to be in honor classes the next year. THOMPSON: So would you say they have set their sights on bigger things academically? HS Teacher B-Yes, definitely. I see them taking classes that would never been accessible to them if it was not for this.

HS Teacher C- I think overall it has been positive. Some students shut down because it was difficult. Behavior showed a real improvement when compared to standard level classes in year’s past. Scores overall went up! THOMPSON: So scores went up, are you proud of this? HS Teacher C: yes it feel good…I knew it could work and to prove doubters wrong and see the students succeed..Yeah, it feels good.

MS Teacher A-I think it potentially makes better students as long as the teacher is willing to work hard. IT takes students away from their friends and introduces them to a new group of peers that may be better for their success.

MS Teacher B-I think there is benefits for many students typically “Honor Students” develop social skills and typical “standards” are offered a chance to challenge themselves and see themselves as students. Some students are set up for failure in the old system.
Appendix P – Classroom Observation Data

Class/Teacher: Honors Bio-Teacher A  Time/Date: 5/27, 6/4 & 6/10/14 at 7:17 am
Duration: 90 minutes  Participants Observed: D & E

Observation and Assessment of Participants’ Engagement in Instruction:

- During an exam review, participant E correctly responded to question and let out a loud “Ooooo” in apparent celebration. This was greeted with smiles and an apparent sense of normalcy to celebrate achievement/correct answers.
- Student D was seemingly preoccupied with getting review sheet complete with correct answers and used her peers (mostly female-black and white), which they obliged.
- Both students had ear buds in their ears, but appeared to turn music on and off at appropriate times (i.e., when teacher talking) throughout the class period.
- Student D broke into spontaneous dancing at her seat for brief periods, but still continued to be engaged and actually answered question on one occasion.
- Student E appeared to have a pattern of avoidant behavior during lecture/instruction. He asked to use bathroom, go to guidance and/or nurse 7 times during the 3 observations. Teacher skillfully redirected and negotiated these breaks for later and likely more appropriate breaks (work completion milestones) during the class period.
- Student E asked a silly but apparently genuine off topic but science related question “can you have a brain transplant” which drew the laughter of his peers. The teacher smoothly responded and drew the student back to the topic with his response and follow-up question. Re-engagement was achieved, class kept on-track and student embarrassment and pride!

Observation and Assessment of Participants’ Peer Interactions:

- Very little in the way of peer boundaries observed; all seemed to be comfortable with classmates. Example: students would make their way around the room asking for gum, candy, answers and it seemed routine, comfortable and warmly welcomed by all.
- Worked well with all peer group members when in assigned lab group at end of classes.
- In general boys in class appeared to be a little more aggressive in the interest to interact with female students, but not inappropriate.

Observation and Assessment of Participant-Teacher Interactions:
Teacher greeted students at the door and called them inside after bell rang. Majority of students arrived at or just after bell. By majority, those that were late were African American (including participants each class)

Teacher always called students by name in positive tones.

Teacher regularly used gentle shoulder touches to get students attention or give affirmation.

Students affectionately called teacher “Teach” or by last initial of name.

Regular “high five’s” were with students were observed (one with male participant) during observations. Teacher functioned as teacher, coach, cheerleader throughout observations for students.

**Student Groupings**

- Varied regularly
- Students clearly had primary circle of friends, but clear all had comfort level working with everyone in class.
- Teacher utilized random methods (drawing straws, # on paper) to assign groups.
- Some groupings were based on apparent ongoing teacher formative assessments, so there may be some homogeneous groups in larger heterogeneous grouped classroom.
- Competitive group pride (who was right, first, etc. always present)
- Group members were assigned well defined roles to ensure equitable participation and clear expectations. Roles were student selected, so theoretically suited their comfort level and/or best skill/learning modality.

**Instructional Strategies/Modalities**

- I do (teacher), we do (as group), you do (as individual) strategy on activities observed regularly
- High level of technology integration observed (SMARTboard, docucamera, videos, virtual labs) in all classes
- Low-tech mini dry erase boards used by groups
- Lecture was limited to no more than 15 minutes (of 90 mins.) of any class period
- Interactive notebook was a tool used to support note taking where kids actively cut and pasted notes into their Biology notebook for future reference (clear routine).
- All classes concluded with virtual or traditional lab with lab group at lab stations
- All Bio teachers collaboratively planned so much uniformity/consistency in content, materials and strategies. This did not prevent teacher from still adding their own unique flavor to each class. Basically, it was the same recipe but was not delivered in cookie cutter manner.
Classroom/Behavior Management

- Teacher tolerated a lot of non-traditional honors behavior (tardiness, playfulness, drumming on desk, music, dancing, off-topic discussions) in return for the trust, effort and ultimate engagement of students
- Teacher utilized proximity and touch (and sometimes just a “look”) when students were off task
- Classroom routines and norms were clearly established and followed.
- Behavior was largely regulated by teacher-student positive relationships and classroom norms. Norms allowed students to peer regulate each other’s behaviors.
- Teacher was patient, nurturing and positive
Observation and Assessment of Participants’ Engagement in Instruction:

- Regular and consistent off task behavior observed included: off topic conversations and music. However, student still seemed focused on task completion (Interactive notebook, study guide and lab review) for each class respectively.
- Study participants could be described as more active members by their movement around the room (need for bathroom breaks, sharpening pencils, checking with neighbor for answers), but teacher did nice job getting them refocused.
- Participants would ask for help when needed “teacher come help me”, which teacher responded, “ask me a question”
- Student yelled “I’m done!” when finished assignment with apparent pride.
- Students volunteered calling out answers regularly (sometime right and sometime wrong) and were all smiles when right.

Observation and Assessment of Participants’ Peer Interactions:

- Participants seemed to gravitate to same-sex and race classmates when not assigned to groups.
- Appeared to seek out members from other peer groups when in need of answers or support.
- Worked well with all peer group members when in assigned lab group at end of classes.

Observation and Assessment of Participant-Teacher Interactions:

- Teacher warm and welcoming while greeting and invited students into room by name
- Teacher repeatedly called students by name with a smile
- Teacher regularly “code shifted” between formal and informal interactions with students
- Students joked appropriately with teacher and asked off topic, yet science related questions

Student Groupings

- Varied regularly
Teacher seemed to switch up seating chart weekly
When given choice, student sought out those that were most like them (at least as far as THOMPSON could tell on face value)
Teacher appeared to seize multiple opportunities to purposely group students in a strategic and more diverse groups and these groups were high functioning from the lens of this THOMPSON
Some groupings were based on apparent ongoing teacher formative assessments, so there may be some homogeneous groups in larger heterogeneous grouped classroom.
There was group pride and teacher seized opportunity to make things competitive, which further engaged the class (especially the boys)

Instructional Strategies/Modalities
- I do (teacher), we do (as group), you do (as individual) strategy on activities observed regularly
- High level of technology integration observed (SMARTboard, docucamera, videos, virtual labs) in all classes
- Lecture was limited to no more than 15 minutes of 90 mins) of any class period
- Interactive notebook was a tool used to support note taking where kids actively cut and pasted notes into their Biology notebook for future reference (clear routine).
- All classes concluded with virtual or traditional lab with lab group at lab stations

Classroom/Behavior Management
- Teacher tolerated a lot of non-traditional honors behavior (playfulness, drumming on desk, music, off-topic discussions) in return for the trust, effort and ultimate engagement of students
- Teacher utilized proximity control when students were too off task
- Teacher utilized humor to bring students back into instruction
- Classroom routines and norms were clearly established and followed.
- Behavior was largely regulated by teacher-student positive relationships and classroom norms. Norms allowed students to peer regulate each other’s behaviors.
- Teacher asked participant A to work at the teacher station to keep him engaged during one class
- Teacher brought high-energy, enthusiasm and movement entire class
Class/Teacher: Honors Bio-Teacher C  Time/Date: 5/28, 6/3 & 6/9/14 at 12:30 pm  
Duration: 90 minutes  Participants Observed: A & F  

Observation and Assessment of Participants’ Engagement in Instruction: 

- Ear buds in by participants in all classes but on task behavior (note taking, responding, task completion) observed.  
- Participants briefly out of area during transitions engaging in social interactions, but back to area for next activity in acceptable time.  
- Participants consistently more focused more on tangible task completion activities (worksheets, labs) than lectures and videos.  
- Participants asked relevant questions  
- Participants ask for help as needed  
- Teacher laughed at their own errors. “Maybe I need to read the book again”, “don’t listen to me, you guys obviously know more than I do”.  

Observation and Assessment of Participants’ Peer Interactions:  

- Consistent teacher movement during all classes around room interacting with all students  
- Regular and consistent social interactions, class could be characterized as social overall.  
- Social interactions both on and off topic throughout class  
- Participants regularly engaged in back and forth friendly teasing with other AA male students  
- Males sought interactions with females outside of area/groups  
- AA students gravitated to other AA students, but there was a comfort level overall working and interacting with all students.  
- A general accepting and harmonious classroom was clearly evident.  

Observation and Assessment of Participant-Teacher Interactions:  

- Consistent teacher movement around room, with strong eye contact and non-verbal communication  
- Mutually respectful interactions (names, please, thank you, smiles)  
- Consistent teacher praise—“you can do it”, “go ahead, you know it”, “You always know the answer”  
- Teacher facilitated safe learning environment where students safe to take risks
• Participants willing to take risks and classroom environment supported. Several examples of participants volunteering wrong answer, but seemingly un-phased and willing to risk answering (right or wrong) again.
• Consistently used phrase “ask me a question” to focus students

**Student Groupings**
Varied:

• Pre-assessment based
• Random
• Seating chart
• Balanced in regards to diversity

**Instructional Strategies/Modalities**

• Self-directed
• Lecture
• Video
• Group rotations
• Games/competition
• Lab group activities
• Balanced in diversity

**Classroom/Behavior Management**

• Proactive in anticipating student needs. Teacher: “need a new pencil, here you go”, “You can use the bathroom once you are finished”, “here I have some paper for you”, “go ahead and ask me what you don’t understand”.
• Called on students by name to answer questions when off task. Participants appeared were well aware of this strategy and seemed to enjoy seeing it used on their peers.
• Anticipate student needs in lesson planning
• Pre-assessments and differentiated instructions helped avoid instructional level frustration and minimized behaviors
• Teacher had keen awareness of student needs and cues and responded quickly with 1:1 support strategically as needed
• Consistently used humor. Example, “are you going to lose to these guys?” and I guess the girls are the only ones that can understand” to prompt off task groups to reengage.
• Established routines and class norms maintained vast majority of behavior
• Used an established level of trust and equity that was built over time
• Subtly prompted student with head down to re-engage
Appendix Q: Group Interview/Member Checking Data

THOMPSON: The Second question I asked you guys—as an ____ student, how do you feel your academic ability compares to other students—most of you said you felt average or above average in your academic ability. Is this accurate?

STUDENTS: Yes

THOMPSON: That was a pretty easy one. Do you feel you belong in Honors Biology? What I heard from you guys was, the consensus was that you felt you belonged. I heard from y’all that you felt more than capable of doing the work; it was more of a matter of how much effort you put in that ultimately determines your success. Is this accurate or is there anything else you all want to add?

STUDENTS: It’s accurate.

THOMPSON: So what I’m hearing is the class isn’t easy, but if you put the extra work in, you guys can get a good grade?

STUDENTS: Yeah.

THOMPSON: Do you believe others—the teacher and students—think you belong in Honors Biology? The answers I heard from you guys was that you’ve been given no evidence that anyone would think you didn’t belong. I also heard that the students and teachers were positive and supportive, especially the teachers. Is this accurate?

STUDENTS: Yes.

THOMPSON: Can you all give me another example of how a teacher or student was or is supportive?

STUDENTS: They give you a week to turn your stuff in.

THOMPSON: They give you a week to turn your stuff in?

STUDENTS: Yeah. And if we’re playing around, they’ll tell us to stop playing around and finish our work.

THOMPSON: So they’re working with you—they’ll make exceptions like giving you extra time to turn your stuff in, and they’ll tolerate a little horseplay.

STUDENTS: Yeah.

THOMPSON: They’ll work with you—that’s good to hear. What are some differences between your standard courses and Honors Biology? What I heard was the biggest difference is the amount of work—classwork and homework. Many of you guys believe
that the expectations were higher, and the responsibility fell on you to make sure you were caught up and understood what was going on. Basically, the class would move on with or without you, and you had to stay after and meet with the teacher a lot of times to keep up. Does this sound accurate?

STUDENTS: Yeah.

THOMPSON: The biggest difference is the amount of work? Yeah, students are all nodding their heads. Do you guys get the impression—other than the teacher being pretty flexible—that if you guys don’t keep up with the work, the class is going to move on without you?

STUDENTS: Yes.

THOMPSON: I think, looking around the table and talking with you all, I don’t think anyone got worse than a C or expected to get less than a C. you guys are accepting the challenges and getting it done.

STUDENTS: Yeah.

THOMPSON: Seven of you are nodding yes. What successes have you had in Honors Biology? I heard about successful grades, tests and quizzes, but what I heard probably from all of you the most was the projects and the labs were what you guys did really well at.

STUDENTS: Yeah.

THOMPSON: Other than the labs and the projects, how about another successes or something that goes well that you’d like to share?

STUDENTS: (silence)

THOMPSON: It’s ok. Students are smiling. That’s alright. Describe any challenges that you’ve had in Honors Biology. What I’ve heard after talking to you guys was that keeping up with the fast pace of the class is a challenge. Every day is something new, so you start it, you end it, and the next day you’re on to something else.

STUDENTS: Yeah, yeah, yeah.

THOMPSON: Students are nodding their heads. I’m not videotaping you guys. Is there something else you guys can add? Any other challenges in the course? It’s ok if there isn’t, we got it right the first time; I just want to give you the opportunity to tell me.

STUDENTS: The quizzes and the tests. Yeah. Some of them.

THOMPSON: Remembering everything?
STUDENTS: Yeah.

THOMPSON: It sounds like because the labs are things you enjoy the most, by a show of hands, who their own learning style?

STUDENTS: (5 raised hands—all males)

THOMPSON: Are you all hands-on, kinesthetic learners?

STUDENTS: Yeah.

THOMPSON: So it’s safe to say that the way you learn best is through the labs?

STUDENTS: Yeah.

THOMPSON: This one is tricky and hopefully we’ll have more discussion here. How has being in an honors course changed your self-esteem? I got the impression from most of you guys that you’re pretty proud and confident guys, so you’re not about to say ‘I feel better about myself for being in an honors class.’ I was, once upon a time, a young guy so I know it might not be cool to say that something about school makes you proud. However, most of you did admit to sharing some of the news with family or extended family, and I did get on some level that you were happy with that; it was something positive to share. Maybe it doesn’t make you as proud or make you feel as good about yourself as the first time you dunk a basketball or score your first touchdown, but I think you guys do feel pretty good about being in an honors class. Is that accurate?

STUDENTS: Yes (with majority of heads nodding in the affirmative).

THOMPSON: I’d say all but one student responded yes. How has Honors Biology changed you as a student? I’ve consistently heard you’ve done more homework, and committed to staying after school to meet with teachers for the extra help. Is this accurate and is there anything else to add?

STUDENTS: Accurate.

THOMPSON: To summarize that end—when teachers or classes expect more out of you, you do more.

STUDENTS: Yes.

THOMPSON: Name one thing you like and don’t like about class—the most common response I heard from all of you guys is the lectures, the note-taking, the teacher standing up there talking. Is that accurate?

STUDENTS: Yes.
**THOMPSON**: Many of you guys said the quizzes and tests. Has this course encouraged you to possibly take an AP course as you continue high school? What I heard was now that you’ve been exposed to an honors class and were successful, you’re open to more challenges.

**STUDENTS**: Yeah.

**THOMPSON**: Ok. If there’s anything you want to add ad any time, please give me something. Has this course had any impact, positive or negative, on your plans to attend college? I think most of you told me you planned on attending college before you even started here. What I got the feeling was although you planned, everybody still wonders a little bit ‘am I college material, can I do it, is college going to be too hard?’ I worried about that right up until the day before I moved into my dorm at Penn State. What I heard is doing an honors class and realizing ‘maybe I work a bit more but I’m getting good enough grades, I still plan on it and now I feel even better about it.’ Am I hearing the right things?

**STUDENTS**: Yes you are.

**THOMPSON**: Has this course changed you as a student? Very similar to question number 9. I heard studying more, more time after school; somebody was talking about avid strategies of note-taking. Is there any other ways this may have changed you or made you a better student by taking a more rigorous honors course?

**STUDENTS**: (one) Yeah, it makes me think when I have a low grade, it makes me say ‘I can do better than that.’

**THOMPSON**: Anyone else? Thank you. Question 15: do you feel like you’re treated any differently from other students? I heard ‘no’ from everybody. Is this accurate?

**STUDENTS**: Yes.

**THOMPSON**: Do you interact differently with your classmates in Honors Biology compared to your other classes? Most of you responded that there’s little difference in how you interact or act. A couple of you did say there may be a little more playing or off-task behaviors in standard courses—not all of you but a couple of you. Is this accurate or not accurate?

**STUDENTS**: Accurate.

**THOMPSON**: Show me by raising your hands. Is it accurate or not accurate? All **STUDENTS** raised their hands that there’s more playing and off-task behavior in standard classes. Do you find yourselves fooling around and playing around more in standard-level classes?
STUDENTS: Yeah. It’s more easy.

THOMPSON: More easy, and how about expectations? Is the off-task behavior tolerated more?

STUDENTS: Yeah

THOMPSON: Tolerated by the teacher?

STUDENTS: Yes. In science class, yeah.

THOMPSON: How about tolerated more by the other students?

STUDENTS: Yes.

THOMPSON: What I’m trying to get at is, because it’s more of an academic class and it’s an honors class, do you feel like acting up, others might look at you and think ‘man, this is an honors class why are you acting up?’ I don’t want to put words in your mouth, if you don’t feel that way it’s ok.

STUDENTS: If it’s honors, you gotta work. And standard you just chill. Chill. It’s easy.

THOMPSON: Chill. Alright. Do you have any friends in honors classes and have you made any new ones? You all said you have friends in honors classes—you’re obviously all very social guys. You all did say you met some new friends. What I was trying to get at, and I’m curious, is the new friends you made—would you have made them—did they operate in different social circles, did they have different interests and backgrounds—were there people you would have never looked twice at or met if you weren’t in an honors class? Have you made friends you know darn well know you wouldn’t have never made if you weren’t in an honors class?

STUDENTS: Yes.

THOMPSON: Six say yes. Ok. The last question was actually the first question I asked all of you guys. This is the question that, after I went home, I was like ‘I should have done this a little bit better.’ There’s an educational term called the achievement gap, and us that work in education throw it around a lot, but you as students, it probably didn’t mean anything to you guys which is fine. There’s often a disconnect between us older people and students. In hindsight, I should have asked the question differently or saved it for later in the interview. I Googled achievement gap to come up with a standard definition. The term achievement gap—it’s often defined as the difference between test scores of minority and/or low-income students and the test scores of their upper-middle-class, white, and Asian peers. There can also be a gap between boys and girls early. I don’t know if you guys remember but the girls always seemed to be smarter and achieve higher when you guys were younger—in first or second or third grade girls start reading
earlier, talking earlier. And later in high school, boys often excel more in math and science than girls. Not as a rule, but on average. So given this definition of achievement gap, have you heard of it before? Do you have any thoughts on it?

STUDENTS: I’ve heard of it before.

THOMPSON: Do you as minority students, do you see it? Do you feel it? I heard from you guys that if you do the work—and you all expect A’s or B’s—in layman’s terms, there ain’t no gap here. But do you have any thoughts about it?

STUDENTS: They do have a little gap.

THOMPSON: Do you have any feelings on it?

STUDENTS: NO, not really.

THOMPSON: Anybody else? Any questions for me?