

THE RELATIONSHIP BETWEEN AFRICAN AMERICAN HIGH SCHOOL STUDENTS'
DESIRE TO ATTEND COLLEGE, THEIR PERCEIVED LIKELIHOOD TO ATTEND
COLLEGE AND ACTUAL COLLEGE ENROLLMENT

A DISSERTATION IN
Counseling
Psychology

Presented to the Faculty of the University
of Missouri- Kansas City in partial fulfillment of
the requirements for the degree

DOCTOR OF PHILOSOPHY

by
MAKINI LATEEFAH KING

B.A., Emory University, 2003
M.A., University of Missouri – Kansas City, 2010

Kansas City, Missouri
2013

© 2013
MAKINI LATEEFAH KING
ALL RIGHTS RESERVED

THE RELATIONSHIP BETWEEN AFRICAN AMERICAN HIGH SCHOOL STUDENTS'
DESIRE TO ATTEND COLLEGE, THEIR PERCEIVED LIKELIHOOD TO ATTEND
COLLEGE AND ACTUAL COLLEGE ENROLLMENT

Makini Lateefah King, Candidate for the Doctor of Philosophy Degree

University of Missouri- Kansas City, 2013

ABSTRACT

African American students continue to be an underrepresented population in institutions of higher education. This study uses Mickelson's Attitude-Achievement Paradox to explain the effect of individual and contextual SES, students' sense of belonging, achievement and engagement on student's desire to attend college and perceived likelihood of attending college and eventual college enrollment. Using waves I and III of the Adolescent Health dataset, the researcher explores how SES and individual high school experiences impact the desire and perceived likelihood of college enrollment and actual college enrollment for 1775 African American 9-11th grade students. Multi-level model analysis showed that individual and contextual SES and students' high school experiences were more strongly related to perceived likelihood of attending college than to desire and that these variables also predicted actual college attendance. Perceived likelihood partially mediated the relationship between desire, SES, belonging, achievement and actual college attendance. These results suggest the importance of encouraging positive high school experiences for African American students, assisting students with locating financial support for college and increasing students' perception that they are likely to attend college.

APPROVAL PAGE

The faculty listed below, appointed by the Dean of School of Education, have examined a dissertation titled “The relationship between African American high school students’ desire to attend college, their perceived likelihood to attend college and actual college enrollment,” presented by Makini L. King, a candidate for the Doctor of Philosophy degree, and certify that in their opinion it is worthy of the acceptance.

Supervisory Committee

Carolyn E. Barber, Ph.D., Committee Chair
Department of Counseling and Educational Psychology

LaVerne Berkel, Ph.D.
Department of Counseling and Educational Psychology

Bonita Butner, Ph.D.
Department of Education Leadership, Policy, and Foundations

Jacob Marszalek, Ph.D.
Department of Counseling and Educational Psychology

Tamera M. Murdock, Ph.D.
Department of Psychology

Johanna Nilsson, Ph.D.
Department of Counseling and Educational Psychology

TABLE OF CONTENTS

ABSTRACT iv

LIST OF ILLUSTRATIONS vi

LIST OF TABLES vii

ACKNOWLEDGEMENTS viii

Chapters 1

 1. INTRODUCTION 1

 2. LITERATURE
 REVIEW

 3. METHODOLOGY 31

 4. RESULTS 42

 5. DISCUSSION 52

Appendix 67

REFERENCE LIST 73

VITA 84

ILLUSTRATIONS

Figure	Page
1. Full Model.....	67

TABLES

Table	Page
1. Add Health Variables and Responses	68
2. Summary of Multilevel Modeling for Variables Predicting Students' Desire to and Perceived Likelihood of Attending College	70
3. Summary of Generalized Multilevel Modeling for Variables Predicting Actual College Attendance of African American High School Students	71
4. Correlations of Variables	72

ACKNOWLEDGEMENTS

I would not have been able to finish my dissertation without the guidance and support of my advisors, committee members, friends and colleagues, or husband and children.

I would like to express my deepest gratitude to my advisor Dr. Carolyn Barber. Her kindness, patience, and dedication to my success helped carry me through this long and complex process. Somehow she, without fail, knew to check in with support and inquiry into my progress at the exact moments that I would lose focus and try to avoid my tasks. I also want to thank Dr. Tamera Murdock, who I always felt believed in my abilities even when I did not. She made sure to challenge me in academics and research so that I could not only get better at those things, but become more comfortable in sharing my ideas and knowledge with the rest of the world.

To my friends who were right there with me on this very daunting journey. Many times we questioned our sanity and why anyone would ever choose to put themselves through this. Though we may have complained daily, we supported each other in every way possible. I am sure that I would not have made it without you right beside me.

It is because of my family that I even had the ability to pursue this dream all. You are all models for what I can accomplish if I want to. You provided your never ending support and made sure that I had anything and everything I needed emotionally and physically to realize this degree. This degree is as much yours as it is mine.

Lastly, to my husband Caleb and my children, Amina and Sam. I love you, love you, love you. You were patient with me and tolerated the nonsense. You believed in me and sung your praises of me to anyone who would listen. I always looked forward to seeing your smiling faces at the end of a long day. I couldn't ask for anything more. Thank you.

CHAPTER 1

INTRODUCTION

While the proportion of African Americans in higher education has steadily increased over the years, the rates at which they pursue a degree in post-secondary education still lags behind Whites (National Center for Education Statistics [NCES], 2007). For example, according to the U.S. Department of Education (2010), in the fall of 2008, 44.2% of Whites who graduated from high school, between the ages of 18 and 24, enrolled in colleges or universities, while only 32.2% of African Americans enrolled in the same types of institutions. The average freshmen high school graduation rates for 2007 show that Whites graduate at a rate of 80.3 while African Americans graduate at a rate of 60.3. Additionally, of White students that graduated from high school in 2007, 50% of them enrolled in a degree granting institution the following fall, whereas rates were only 8% for African American high school graduates.

Many explanations have been used to explain the discrepancies in educational attainment between African Americans and Whites. Some evidence suggests that African American underrepresentation in institutions of higher education might be due to the academic inequities in primary and secondary education. For example, African Americans have continually underachieved in both science (Parsons, 2007) and mathematics (Tate, 1997) compared to White students. In 2005, 32% of White high school graduates had taken precalculus but only 17.9% of African Americans graduates took the course (NCES, 2010). In this same timeframe, 29% of White graduates took biology, chemistry and physics, while only 21.3% of African American graduates took those same courses.(NCES, 2010). Additionally, in 2008, 49% of Whites met the college readiness ACT benchmark score in

Math while only 11% of African Americans did. Thirty-three percent of Whites met the ACT benchmark in science while only 5% of African Americans did (NCES, 2010). It has also been argued that higher proportions of African American students are placed in special education categories and consequently make fewer academic gains (Blanchett, 2006; Zhang & Katsiyannis, 2002). According to the NCES (2010), in 2007 12.2% of African Americans ages 6 to 21 year served under the Individuals with Disabilities Education ACT compared to 8.47% of Whites. Both of these phenomena indicate a lack of academic preparation, which might account for the underrepresentation of African Americans in higher education.

Fordham and Ogbu (1986) suggest that a history of social, educational, and environmental inequities cause many African Americans to perceive little value in high academic achievement because of the belief that the social barriers block any occupational or social benefit to be gained from academic achievement (Fordham & Ogbu, 1986). These inequities are easily seen in the persistent poverty and income discrepancies between African Americans and Whites in America. In 2009 the median income for African Americans was \$32,584 and the median income for Whites was \$54,461; a \$22,000 difference (DeNavas-Walt et al., 2010). This gap has persisted given that in 1980 African Americans earned a median income of \$25,218 while Whites earned \$43,583 (DeNavas-Walt et al., 2003). According to the 2010 census data, 26% of African Americans lived below the poverty line in 2009 compared to only 9.4% of Whites (DeNavas-Walt et al., 2010). These figures have not changed much since 1972 where 33.3% of African Americans were below the poverty line compared to 9% of Whites (Census, 1974). Even when African Americans pursue an advanced degree, their earnings are lower than Whites with that same degree. For example, in 2009, African Americans with a bachelor's degree earned an average of \$47,799 while

Whites with the same degree earned \$57,762 (Census, 2012). Thus, according to this perspective, the underrepresentation of African Americans in post-secondary education can be explained, in part, by their perception that obtaining an education will not likely help them achieve success comparable to Whites due to a history of social inequality.

The high financial burden of attending college may further explain why African Americans are underrepresented. Obtaining a college education has become increasingly expensive over the years and many African Americans may not see the value in pursuing such a degree when it may not provide them any additional success. For example, Freeman (1997, 1999) conducted a qualitative study that examined African American students' perception of economic barriers for college and found that African American students had difficulty perceiving any long term benefits of college such as a good job and high income that would be worth the high cost to attend. Additionally the availability of financial aid may not increase African Americans' enrollment in college. Perna (2000) found a negative relationship between college loans and African American enrollment in college. This is largely due to the fact that African Americans, like other minorities, are hesitant to take out larger loans when they perceive they may be unable to pay them back (St. John, Paulsen, & Carter, 2005).

In spite of the fact that many African Americans are ill prepared for college compared to White Americans and suffer unique external barriers in the pursuit of higher education, many African Americans still express a strong desire to attend college (Hanson, 1994; Kao & Tienda, 1998). Mickelson (1990) calls this phenomenon the "attitude-achievement paradox," which expresses that many African American students have positive regard for education even though their academic performance is low. She purports that people hold two attitudes

toward education: abstract attitudes that education will be a vehicle for success, and concrete attitudes that reflect the realities of what education might bring as demonstrated by the experiences of others similar to them (Mickelson, 1990). Thus, African Americans may express a desire to attend college, because they hold the belief that education is supposed to lead to success, which she termed “abstract educational attitudes”. However, due to the limited success that education has brought to their significant others, they may also concretely believe that such academic goals are fruitless and make few attempts at academic gains. In her seminal study, Mickelson found that African American high school students held similarly high abstract attitudes as their White peers but embraced lower concrete attitudes and, as a result, had a larger discrepancy between their concrete and abstract attitudes. More important, for all students, their concrete attitudes better explained their achievement than their abstract beliefs. She suggested that African Americans may abstractly believe that education will lead to success, but their lack of achievement is better explained by the concrete reality of what they see education doing or not doing for those close to them. In other words, these arguments suggest that there is a discrepancy between what African Americans may want from their education and what they perceive they are likely to get from their education.

This study will look within the African American student population to more closely explore the contextual and psychological factors that are associated with African American students’ concrete and abstract educational attitudes toward higher education and their eventual enrollment into higher education. It will extend Mickelson’s work in four ways. First, whereas Mickelson focused on the relations of concrete and abstract attitudes to high school achievement, this study will focus on college student enrollment as the outcome.

Accordingly, attitudes will be measured in ways that specifically focus on college attendance. Abstract attitudes will be operationalized by high school students' reported desire to attend college; "concrete" attitudes will be measured by their assessment of the "likelihood" that they will attend college. This extends upon Mickelson's research by focusing on college enrollment, rather than high school achievement, as they are predicted by attitudes.

Second, Mickelson focuses on how the attitude-achievement paradox explains differences between racial/ethnic groups. This study focuses on students' socioeconomic context (SES) as an additional factor that influences the development of these attitudes within the African American population. Specifically, it will examine the extent to which students' SES, the SES of their school and their experiences as high school students predict the abstract and concrete attitudes that students develop about college.

Although Mickelson's (1990) theory is useful for explaining some of the racial and SES gaps between concrete and abstract attitudes, within these groups some students will continue to believe strongly in the importance of college for themselves and remain engaged in education whereas others will not. Psychological theories of school engagement and disengagement which emphasize the developmental role of the larger social context (i.e., past school experiences, peer socialization) may help to explain this within group variation their attitudes towards future schooling. As such, the third extension of this study is to examine the predictive value of psychological variables, such as sense of school belonging, academic engagement and achievement, which are also known to contribute to school engagement, performance and academic decision making.

A fourth and final extension of this study is that this study will use a national sample and follow students prospectively from high school through college age. Mickelson (1990)

relied on convenience samples and one-time correlational designs. This extension will not only increase the external validity of the results, but will also strengthen the predictive validity by examining the relations of African American high school students' school experiences, SES and college plans to actual college enrollment.

Educational Aspirations: Desire and Perceived Likelihood

For this study, educational aspirations are presumed to be comprised of two distinct dimensions: students' desire to attend college and their perceived likelihood of attending college. From this point forward, I will refer to students' hope or aspirations of attaining a college education as "desire" and their assessed likelihood or expectation of attending college as "perceived likelihood." In previous research, assessments of students' educational aspirations used a single scale that included items for both a student's desire to achieve a certain educational level and the student's perceived likelihood of attaining that level (Gorman-Smith, Tolan, Henry & Florsheim, 2000; Nichols et al., 2010). Other studies conceptualized aspirations solely as an assessment of the expectations of achieving a certain educational level (Mau & Bikos, 2000). Still other studies have made a clear separation between aspirations and expectations stating that aspiration reflects a student's desire, or the more ideological goal or hope of attaining an educational goal (Trusty, 2002).

Although several studies make a distinction between the two separate constructs (Hanson, 1994; Hauser & Anderson, 1991; King & Murdock, 2010), only one study, a comparison of aspirations and expectations for Latino students by Bohon, Kirkpatrick-Johnson & Gorman (2006), expressly states the similarities between aspirations and expectations and Mickelson's paradox. Bohon et al., (2006) purport that Mickelson's conceptualization of "abstract" attitudes towards education is similar to aspirations because it

implicates the ideal belief that education is a vehicle of success for all people. On the other hand, they state that the expectation dimension aligns with Mickelson's "concrete" attitudes and reflects the student's perceived likelihood of achieving an educational goal that was developed based on their assessed reality of the economic return on education they see for people around them (Mickelson, 1990). The authors ultimately found that aspirations and expectations varied within the Latino population such that Mexicans and Puerto Ricans showed weaker aspirations and expectations compared to Cubans.

Predictors

Mickelson (1990) uses the social inequality of the opportunity structure to explain the attitude-achievement paradox for African Americans. Thus, it seems likely that African American students' individual and SES and the SES of the schools that they attend affects their own desire and likelihood to attend college. Following Mickelson's theory, one might expect a greater gap between abstract and concrete attitudes for students of a lower individual and contextual SES. For example, a student of lower SES or who attends a school of lower SES may hold the ideal belief that attending college is necessary and feasible (abstract), but in reality, due to the experiences and opportunity offered by their economic circumstance, may not believe that it is feasible for himself (concrete). In contrast, a higher SES student who is surrounded by others with economic capital should be more likely to see examples of education "paying off" for those around them and therefore have concrete values that are more similar to their abstract beliefs. In sum, the relationship between desire and perceived likelihood of attending college may be weaker for students of a lower versus higher individual and/or contextual SES.

From a psychological standpoint, however, there are many other factors that influence students' educational performance and decision making. Academic engagement, achievement and school belonging are psychological variables frequently found to be linked to positive school outcomes including educational aspirations and college enrollment (Anderman, 2002; Atanda, 1999; Chenoweth & Galliher, 2004; Bohon et al., 2006; Sirin & Rogers-Sirin, 2004). For example, a student who puts more effort into his or her academic work (academic engagement) by completing assignments on time, dedicating more hours to studying, and paying attention in class, is more likely to be successful in school (Bohon, Johnson, & Gorman, 2006; Sirin & Rogers-Sirin, 2004). Achievement, which can be defined as the student's academic accomplishments, is often found to be a reliable predictor of achievement in subsequent years, enrollment in higher level courses, self-efficacy, and social adjustment (Atanda, 1999; Chenoweth et al.2004). Additionally, sense of belonging, or how connected a student feels to her school, in both secondary and higher education has been linked to academic achievement (Anderman, 2002; Finn, 1989) and persistence in college (Tinto, 1975). In a sense, this study will examine both sociological and psychological variables as significant predictors of African American college enrollment.

Mickelson (1990) explains that African American students' underperformance is a result of the concrete attitudes they hold towards education. In other words, their behavior is somehow negatively impacted by the understanding that education will not provide them with upward mobility. In this study, I will not only examine the effect of students' high school achievement, but also the effort that they put into their work (academic engagement) and their sense of feeling a part of their educational environment (school belonging). The expression of these variables may reflect the concrete attitudes African Americans hold

towards education. Given Mickelson's findings, there should be a stronger relationship between these variables and students' perceived likelihood of attending college (concrete attitudes) than there is between these predictors and their desire to attend college (abstract attitudes). Concrete attitudes are representative of the realities of the world and the students' perceived likelihood of attending college should likewise represent this reality and be reflected by the students' motivation, achievement and sense of belonging.

College Enrollment

For this study I have conceptualized college enrollment as a representation of upward mobility. The act of pursuing college may mirror the students' ideal understanding that education leads to upward mobility, just as achievement in Mickelson's study represented education as a step towards upward mobility. In this study, college enrollment will serve as the determinant of reality such that a student's perceived likelihood (concrete attitude) of attending college should be assumed to affect whether she actual attends, more so than simply her desire (abstract attitude) to attend college. While previous studies have found that belonging, engagement and achievement all impact one's enrollment in college (Eccles, Vida, & Barber, 2004; Zarate & Gallimore, 2005), this study aims to understand the extent to which likelihood act as mediators between the students' individual experiences, SES and college enrollment and whether contextual SES acts as a moderator between desire and likelihood and likelihood and enrollment.

Research Hypotheses

This study will use Mickelson's attitude-achievement paradox as a guide to examine the relationship between African American high school students' individual and contextual SES, their high school experiences, college desire and perceived likelihood and college

enrollment. I predict that contextual factors such as the SES of the adolescent's school will be more strongly related to the students' perceived likelihood than their desire and that school SES will strengthen the relationship between desire and likelihood and likelihood and enrollment. Similarly, I predict that the students' individual SES will be more strongly related to perceived likelihood than desire. While it is assumed that engagement, belonging and achievement will explain some of the variance in both desire and perceived likelihood, given the discrepancy that exists between African American students' abstract and concrete attitudes towards education; I predict that the three variables will have a stronger relationship with perceived likelihood than with desire, such that the relationship between the psychological predictors and perceived likelihood will be stronger. Lastly, I predict that perceived likelihood will be more positively related to enrollment than desire and will better explain the relationship between students' high school experiences and enrollment.

The following four hypotheses will be assessed. A full model of the hypotheses can be found in Figure 1 of the appendix.

Research Hypotheses

- 1) *The individual student's SES will differentially predict African American students' desire to attend college versus her perceived likelihood of attending college, such that the relationship between SES and perceived likelihood is more strongly positive than the relationship between SES and desire.*
- 2) *African American students' sense of school belonging, academic engagement and achievement will differentially predict both their desire (abstract attitudes) to attend college and their perceived likelihood (concrete attitudes) of attending college, such*

- that the relationship between the aforementioned predictors and perceived likelihood will be stronger than those between the predictors and desire to attend college.*
- 3) *School socioeconomic status will positively predict attitudes toward college above and beyond individual SES.*
- a. *The socioeconomic status of the African American adolescent's school will differentially predict the student's desire to attend college versus her perceived likelihood of attending college, such that the relationship between the school's SES and perceived likelihood will be more positive than the relationship between the school's SES and desire.*
 - b. *The school's SES will also act as a moderator between the student's desire to attend college and perceived likelihood of attending college; specifically, the strength of the relationship between these variables will increase as the school level SES increases.*
- 4) *African American students' perceived likelihood of attending college will mediate the relationship between students' desire to attend college, sense of school belonging, academic engagement, achievement and college enrollment*
- 5) *The school's SES will also act as a moderator between the student's perceived likelihood of attending college and actual college enrollment. Specifically, the strength of the relationship between these variables will increase as the school level SES increases.*

Dataset

For this study, I will use archival data from the Adolescent Health (AddHealth). AddHealth is a longitudinal study intended to explore health related behaviors and

contributing individual and environmental factors that influence adolescents. This study's purpose is to examine how adolescent factors predict eventual college enrollment and the AddHealth dataset allows one to look at a nationally representative sample with data collected on its constituents from adolescence to adulthood. The data were collected in four waves from a nationally representative sample of adolescents in grades 7-12 during 1994-95 school year (Wave I). Data were again collected in 1996 for Wave II and then, six years later in 2002. Wave IV data were collected finally in 2007 and 2008 on individuals who could be located from the original Wave I collection. The content of the data includes (but is not limited to) many topics including social, economic, psychological and physical well-being with data on the school, family, neighborhood and peers. These data will be used to explore academic, social and contextual variables that impact African American students' desire and perceived likelihood of attending college as well as their actual college attendance.

In the following sections I will present a review of the existing research regarding this study's purpose. As has been previously mentioned a clear conceptualization of college aspirations does not exist in the literature. Consequently, this literature review will consist of studies that examine students' aspirations, expectations and other variables that reflect students' attitudes towards attending college. The first two sections will present a review of literature that examines individual SES and contextual SES as variables that affect students' attitudes towards college. The next three sections present a review of three of the most common high school experiences and their relationship with students' attitudes towards attending college. These sections are named according to their respective variables including sense of school belonging, academic motivation and achievement.

CHAPTER 2

REVIEW OF LITERATURE

The purpose of this study is to examine both individual and contextual variables as they relate to African American high school students' desire and perceived likelihood to attend college. The following sections will review literature regarding both individual and contextual SES, Academic Engagement, Sense of School belonging and Achievement as they have been found to impact students' college plans.

Socioeconomic Status (SES)

A student's SES has long been a factor that influences his or her pursuit of higher education (Mello, 2009). SES reflects both one's financial disposition status and one's ability to pursue certain opportunities that are financially dependent (Bratlinger, 1992) such as a college education. For many students, the ability to pay for college becomes the predominant factor that eventually prevents actual college attendance (Freeman, 1997; Perna, 2000). Studies continue to demonstrate the importance of SES by showing that students who come from a lower SES background are far less likely to attend college compared to their higher SES counterparts (Perna, 2000). However, SES not only impacts actual college attendance, but it similarly acts upon students' preceding aspirations and expectations for college attendance.

Although this section's focus will be to review studies that demonstrate the important impact that students' SES has on their attitudes toward their future academic endeavors in college, it will also discuss any effect that race plays on SES and the educational aspirations and expectations because the sample for the proposed study will be solely African American students. This section highlights three studies in depth, each of which analyzes variations in

educational aspirations as a function of SES. The last study is unique in that it looked at aspirations and expectations as two separate concepts, something the proposed study aims to do.

Zena Mello (2009) examined changes in educational and occupational expectations of 14 to 26 year olds and how these expectations varied according to both SES and race using data from the National Education Longitudinal Study of 1988 (NELS: 88). The sample included 10, 282 8th -12th grade high school students who were followed for 12 years. To disentangle race from SES, Mello's sample included minority groups of high SES and a White sample of low SES. A composite variable of SES was used that included parental education, occupation and income. Educational expectations were measured using a single item from each wave of data collection of the NELS: 88 database. The item in the first three waves stated "As things stand now, how far in school do you think you will get," the fourth wave stated, "when you are age 30 what level of education do you plan to hold," and the last wave used said "what is the highest level of education you expect to complete." Across the five waves, these items confounded desire to attend college and perceived likelihood of attending college and provide an unclear conceptualization of educational plans. Additionally, the wording of the item changed from wave to wave, which further muddied the measurement of this construct. Mello found that SES was strongly and positively related to educational expectations while controlling for academic achievement. In addition, the findings support previous research that African Americans have similar if not higher educational expectations to Whites.

In a later study, Kao and Tienda (1998) used the National Education Longitudinal Study of 1988 (NELS: 88) to examine race and SES variation in educational aspirations for

8th through 12th grade students. The dependent variable was a single item that asked whether the student aspired to graduate from a four year institution. They found a strong relationship between parent's education and family background and college aspirations. This effect was strongest in 8th grade, prior to the students being sorted into college or vocational tracks. African American and Hispanic students, while having high aspirations in 8th grade, were less likely to have maintained their aspirations by 12th grade compared to White and Asian students. Kao and Tienda propose that this occurs due to the eventual awareness, for African American and Hispanics, of the realities of college. Similarly, having home resources raised the level of college aspirations for girls in 8th grade, but the effect did not persist through high school. It is worth noting that, although Kao and Tienda frame their findings in concepts relevant to Mickelson's concrete attitudes (by focusing on the "realities of college") the wording of the outcome item itself is more akin to abstract attitudes (in that it focuses on aspirations). These results would suggest that students' abstract attitudes about the value of education may become less idealized over time among students from lower resourced families.

Hanson (1994) used data from the 1980 senior cohort of High School and Beyond (HSB) survey conducted by the National Center for Education Statistics (NCES) to examine how gender, race and class impacted three measures of "lost talent:" unequal educational expectations and educational aspirations, lowered educational expectations and failure to live up to educational expectations. Aspirations were conceptualized as wanting to go to college and expectations were conceptualized as expecting to receive a college degree. Like Mickelson, she argued that expectations are more concrete than desire and therefore more influenced by the realities of students' lives, including their socio-economic status.

Unequal expectations and aspirations indicated that as a senior in high school in 1980, a student aspired to college but did not believe he was likely to attend. Reduced expectations indicated that the senior aspired to college, but did not expect to receive one in 1986. Failure to meet expectations was indicated by a senior expecting to receive a college degree in 1980, but had not attended college by 1986. Results were reported for Whites versus Non-Whites, and suggested that SES was one of the larger predictors of lost talent. Over twice as many seniors of low SES, compared to high SES seniors, had mismatched educational aspirations and expectations. Seniors from the low SES group were also significantly more likely to experience both reduced and unrealized educational expectations (Hanson, 1994).

The proposed study will extend upon the aforementioned ones by clearly and differentially conceptualizing and measuring aspirations and expectations. The study will further explore how individual SES will impact the variations within African American adolescents' aspirations, expectations and enrollment. I predict that individual SES will have a stronger relationship with African American students' perceived likelihood (concrete) of going to college than their desire (abstract) for college.

School Level Socioeconomic Context

Although the SES of an individual student plays an important role in their opportunity structure, so too does the social economic context that surrounds them. Evidence suggests that low income students fair better academically when they are in schools where the average SES of the students is higher than lower. Being surrounded by more students for whom the prospect of college is more likely may affect students own educational aspirations (King & Murdock, 2010; McDill & Coleman, 1965).

One of the first studies to include socio-economic context to studies of college plans was conducted by Sewell and Armer (1966) who explored whether the school's SES would affect the educational aspirations of its students above that of family SES or individual ability. Data were taken from a survey of all high school seniors in public and private schools and included variables such as educational and vocational plans, SES, and measured intelligence. Contextual SES was measured for each neighborhood or school enrollment district and defined as the percentage of males over the age of 14 years who were employed in white collar occupations. College plans were assessed by asking the student whether he definitely planned to enroll in a degree-granting college or university after high school graduation.

Results showed that less than one-fourth of the students attending schools in low-status neighborhoods planned on attending college, while more than one-half of those attending schools in high-status neighborhoods had plans to attend college. After controlling for intelligence, gender and SES, results showed that students from either a high SES family, or who attended school in a higher SES neighborhood had stronger college plans compared to those of lower SES families and neighborhoods. Thus, the authors conclude that while most of the students' college plans were explained by individual SES, gender and intelligence, the SES of the surrounding area also had some effect (Sewell & Armer, 1966).

A later study conducted by Nelson (1972) sought to elaborate on Sewell and Armer (1966) by adding the additional control variable of student class rank. Nelson believed that because rank is also an important predictor of college aspirations – in addition to gender, SES, and intelligence- controlling for that variable might increase the relationship between college plans and school socioeconomic context. His data were taken from the Student

Counseling Bureau at the University of Minnesota. Results showed that when rank was introduced to his analysis there were overall higher correlations between school socioeconomic status and college aspirations. Nelson suggests that the direct effects of school status on aspirations are being cancelled out by the negative effect of school status on aspirations related through rank placement.

Alexander, McDill, Fennessey and D'Amico (1979) created a model to examine the impact that the average student SES level in a school would have on the educational plans of its students. Mother's education was used to measure SES and the school SES was composed from the within school average. Educational plans assessed whether the student intended to attend college. Over 3,000 students from 18 schools were used in the assessment and the results showed that school's average level SES affected individual plans, peer's plans and the student's curriculum choices.

More recently King and Murdock (2009) established that school socio-economic context was an important factor in predicting both the students' desire for college attendance as well as their perceived likelihood of attending college for African American 9th, 10th and 11th grade high school students. Specifically the relationship between African American students' desire to attend college and their perceived likelihood of attending college was moderated by the SES of the school as measured by the number of mothers in the school who had attended college. Attending a school of a higher SES led to a stronger relationship between the student's desire for and perceived likelihood of attending college. The proposed study will again look at the impact of the school's SES on African American high school students' college aspirations.

Psychological Predictors of Aspirations and Expectations.

Previous research suggests that students who are engaged and bond to their school are more successful in school academically and more likely to have greater expectations for future schooling enrollment (Anderman 2002; Atanda, 1999; Chenoweth et al., 2004; Bohon et al., 2006; Sirin & Rogers-Sirin, 2004). Thus, their engagement and achievement in high school should predict their future academic aspirations.

Academic Engagement

Academic engagement generally refers to one's investment in learning. Although there is debate over how exactly school engagement should be conceptualized, researchers typically describe it as consisting of some combination of three components: behavioral (e.g. positive conduct, effort and participation, time on tasks, homework completion), emotional (e.g. one's interests, sense of belonging and positive attitude toward school), and cognitive (one's investment in learning) (Appleton, Christenson, & Furlong 2008; Finn, 1989; Jimerson, Campos, & Greif, 2003). In this study, I will focus on some behavioral and emotional components of engagement. In this section, I highlight the behavioral component and in the following section, I will review the research on the sense of belonging, a more emotional component

Behavioral Engagement

Whereas motivation may be conceptualized as the underlying psychological processes leading to a behavior, engagement is the action that occurs as a result of the motivation (Reeve, Jang, Carrell, Jeon, & Barch, 2004; Russell, Ainley, & Frydenberg, 2005, p. 1). Behavioral engagement can be thought of as the connection between the person and the activity. In a sense, the more effort that a student puts into his or her academic work by

completing assignments on time, dedicating more hours to studying, and paying attention in class, the more likely he or she will be successful in school. As a result of both the student's behavioral engagement and subsequent academic success, the student may be presented with many more academic opportunities such as a post-secondary education. Behavioral engagement may also impact the student's educational aspirations. If the student gives a lot of effort, he or she may also embody many of the characteristics that place him or her on the path of both wanting to attend college as well as perceiving that he or she has the ability to attend college.

The following two studies present findings that show a relationship exists between behavioral engagement and college aspirations (desire) and expectations (perceived likelihood). Both studies utilize the Add Health dataset, which is the data set that will be used for the proposed study.

Sirin and Sirin (2004) explored how various individual (expectations, self-esteem, engagement) and parental level factors contribute to school achievement for the African American middle class adolescents using data from 336 African American adolescents and their biological mothers from Wave I of the Add Health dataset. School engagement was assessed using nine items that reflected the students' sense of belonging (e.g. you feel safe in your school) and classroom behaviors and activities (e.g. how often you have trouble (1) paying attention (2) getting homework done). Educational expectations were assessed using items asking how much a student wanted to attend college, how likely it was that they would attend college and how likely they were to graduate from college. School engagement had the strongest relationship with educational expectations above self-esteem, parent

involvement, and other statistical controls. Note, however, in this study, items measuring emotional and behavioral engagement were collapsed into one scale.

Bohon et al. (2006) also utilized the Add Health data set to examine factors such as academic disengagement that impact college aspirations and expectations within the Latino population. The items used to assess academic disengagement reflect the behavioral component of school engagement; specifically, they used 3 Add Health items that asked how often the student had trouble paying attention, getting homework done in addition to a question about how often the student skipped class. College aspirations were assessed using a single item that reflects the degree to which the students want to attend college, and expectations were assessed with a single item that asked how likely it is that the students would attend college. After controlling for a variety of other variables (including SES), academic disengagement was negatively associated with both aspirations and expectations to attend college within their sampled population. The proposed study will continue to examine the relationship, if any, between academic effort and college aspirations. Specifically, it will explore how academic effort for African American high school students impacts their desire to attend college, their perceived likelihood of attending college and ultimately their actual college enrollment.

Sense of Belonging

Students' psychological sense of belonging to their academic environment has been defined as students' feelings that they are respected and important members of their school or classroom (Booker, 2004). The original concept was termed by Goodenow (1993a) who developed the Psychological Sense of School Membership scale (PSSM) for middle school students to assess students' perceptions of acceptance, respect and value as it relates to

academic environments both at the classroom and school level. Sense of belonging is considered an emotional component of a student's academic engagement (Appleton et al., 2008; Finn, 1989), which implies that a student's school connectedness is related to his or her academic commitment.

Students' sense of belonging has been linked to academic achievement in both secondary school and higher education (Anderman, 2002; Finn, 1989) and to persistence in college (Tinto, 1975). More specifically, a strong sense of school belonging is related to higher GPA, better academic adjustment, more motivation to achieve, easier transitions, and persistence in high school and college (Anderman, 2002; Finn, 1989; Goodenow, 1993b; Goodenow & Grady, 1993). Sense of Belonging may be particularly important for African American students as they are generally considered at greater risk of not completing college than majority students in the academic environment. Having a strong sense of belonging in one's institution has been identified as critical for prevention of dropping out for students at-risk (Walton & Cohen, 2007). Additionally, some research suggests that African American students may experience lower levels of belonging in certain environments than their majority peers. Racial disparities in students' sense of belonging have been documented at various school levels with greater disparities for racial minorities occurring when minority students perceive a tense racial environment and when schools are composed of the racial majority (Booker, 2004; Goodenow, 1993; Hurtado & Carter, 1997). The following three articles examine the link between sense of belonging and educational aspirations. The first article does so for an African American population and the second two articles are conducted in Latino and Appalachian populations respectively, but show important connections

between sense of belonging and effort, engagement, school comfort, and other positive academic outcomes.

Jones, Castellanos & Cole (2002) conducted a qualitative study on the experiences of ethnic minorities at a predominantly white university and found that minority students felt a lack of diversity on campus both in terms of students and faculty in addition to feelings of not belonging and perceiving the campus environment as nonwelcoming. Goodenow (1993a) found that for Hispanic and African American middle school students in urban schools, school belongingness scores are typically low and are significantly lower than White students' in suburban schools. When students are unable to define themselves as part of the school community, or perceive that they are not a welcomed and respected member, they begin the gradual process of disengagement, are at greater risk of poor academic outcomes and eventually drop out (Finn, 1989; Uwah, MacMahon, & Furlow, 2008). Thus, African American students are at greater risk of these negative risks associated with less school belonging. Due to the possibility that African American students on a majority white campus may experience lower levels of belonging, the concentration of African Americans will be controlled for in the proposed study to improve validity.

Uwah, MacMahon and Furlow (2008) conducted a study that examined the relationship between belonging, academic self-efficacy and educational aspirations among African American males. The sample consisted of 40 males who attended a predominately African American high school in a large Southeastern city. Educational aspiration was measured by asking the student for the highest degree he expected to earn. Although Uwah et al. (2008) labeled their variable aspirations; their conceptualization appears to reflect the students' expectations more appropriately. To assess school belonging, the authors used a

subscale of the Psychological Sense of School Membership (PSSM) scale termed the Perceived Likeness and Inclusion (PLI), which measures the extent to which students perceive that they are liked and accepted by school staff and peers. Additional variables were Feeling Encouraged to Participate (FEP), General Feelings of Belonging (GFB) and academic self-efficacy.

Educational aspirations were significantly related to PLI. The authors proposed that it would be beneficial for future studies to look at this relationship more closely in order to determine the actual effect of belonging as a predictor of educational aspirations. Additionally, they suggested that researchers conduct a longitudinal study in which the participants are followed over several years to determine lasting impacts of and relationships between these variables. The current study proposes to improve upon Uwah et al.'s (2008) study by examining sense of belonging in relation to both desire (aspirations) and perceived likelihood (expectations) of attending college as well as actual college enrollment for high school African American adolescents. This way a clear picture is depicted of the relationships between belonging, both aspirations and expectations.

Other studies have examined the relationship between students' sense of belonging and educational aspirations more directly. These studies do not focus on the African American population; nevertheless they examine other groups of students who are at increased risk of school leaving than the general population and therefore may be relevant to my study. Sanchez, Colon and Esparza (2005) examined the relationship between belonging, gender and academic outcomes in a Latino and urban high school sample. Participants were 143 senior Latino students from a large Midwestern public high school where the population was 95% Latino. Belonging was assessed using the 18 items from the PSSM (Goodenow,

1993b). Sanchez and her colleagues assessed aspirations and expectations as separate constructs using one item for each. The results showed that females had more consistent positive outcomes as measured by educational aspirations and academic effort than males and that sense of belonging predicted motivation, absenteeism and effort, but not expectations or aspirations. They hypothesize that the use of single item measures for expectations and aspirations may have resulted in the lack of relationships between those variables and belonging.

In an effort to understand Appalachian culture and factors that influence their aspirations for college, Chenoweth & Galliher, (2004) predicted that individual characteristics, SES, parental influence, educational attainment, peer and family influences, and cultural values would impact the decision to attend for high school seniors. The participants were 242 seniors in the rural counties of West Virginia College. Aspirations were measured by asking students whether they planned to attend college the following year. School belonging was assessed using 8 items adapted from the Add Health dataset (Udry, 1998). A factor analysis was conducted for these items and two factors were identified; School Belonging and School Comfort. The authors provide sample items for the original eight items (such as “I feel close to people at this school” and “I enjoy learning”), but they do not elaborate on how the specific items loaded onto two separate factors. The researchers also assessed peer, family, financial status, achievement, planning, and reasons for attending or not attending college.

Results of interest showed that belonging was not related to college aspirations, although males did demonstrate a greater sense of belonging compared to females. A significant and positive effect was found between School Comfort and college aspirations.

The authors note that a limitation of this study is that had no knowledge of whether these students actually attended college and suggest that future researchers examine these factors as they relate to actual college attendance (Chenoweth & Galliher, 2004).

The proposed study will extend upon the last two studies by assessing the relationship between belonging, aspirations and expectations. Aspirations and expectations will be clearly distinguished. I predict that for African American high school students, belonging will predict both aspirations (desire) and expectations (likelihood), but will have a much stronger relationship with expectations. According to Mickelson, concrete (likelihood) attitudes are more aligned with students' reality compared to abstract (desire) attitudes and as students' sense of school belonging is based upon the reality of how students feel that they fit into their academic environment, it is hypothesized that belonging will have a stronger impact on expectations than aspirations.

Academic Achievement

Achievement is often found to be a reliable predictor of many academic outcomes including, achievement in subsequent years, and enrollment in higher level courses, self-efficacy, as well as some post-secondary and occupational outcomes (Atanda, 1999; Chenoweth et al.2004; Cunningham, Corprew, & Becker, 2009). For the purpose of this proposed study, I will focus on the academic achievement of African American high school students as it relates to their desire to attend college, perceived likelihood of attending college and their actual college enrollment.

Primary and secondary school achievement has been measured in many ways including overall GPA, grades obtained in particular courses like advanced math and language courses, enrollment in Advanced Placement courses, enrollment in foreign

language courses, and percentiles and scores on standardized tests (Atanda, 1999; Chenoweth et al., 2004). Often, in studies that aim to examine the role that achievement plays in other academic outcomes, achievement is represented by variables that distinguish students from one another in terms of academic progress or success. GPA is frequently used as an indicator of academic achievement because it literally represents a student's academic performance in the classroom (Kuncel, Crede, & Thomas, 2005). Researchers argue that GPA and standardized tests can be used interchangeably as measures of achievement (Stipek & Weiss, 1981; Wentzel, 1989). For this study, I will be using GPA as the measure for the students' achievement.

This section will review several articles that pertain to the relationship between high school students' achievement and their college aspirations. Although some of the studies reviewed use measures other than GPA, I include them because they still provide some evidence of the relationship between achievement, college aspirations, expectations and enrollment.

Robert Atanda conducted a study for the National Center for Education Statistics (1999) where he examined enrollment in 8th grade math and foreign language courses as a potential pipeline for eventual college enrollment. He hypothesized that the pipeline begins with 8th grade enrollment in algebra or enrollment in any foreign language. Students who take these courses are more likely to enroll in higher level math and foreign language courses during high school, which is the 2nd step of the pipeline. He predicted that students who take this course down the pipeline will be more likely to enroll in a 4 year college or university compared to those who did not take these courses.

Atanda (1999) obtained data from the NELS: 88 base year and second follow up surveys. Results showed that students enrolled in advanced courses early are more likely to enroll in college. Overall, it is important to highlight that higher achievement in both middle and high school is likely to lead to enrollment into college. Although this study only looks at achievement as it relates to college enrollment, it is important to consider the implications of achievement on students' desire and perceived likelihood of attending college. The proposed study will extend upon Atanda's by looking specifically at African American students' academic achievement –as measured by GPA- as a high school experience that may predict their desire and likelihood to attend college as well as their actual college enrollment. While Atanda's study provides clear evidence of the relationship between achievement and college enrollment for all students, others have found that achievement impacts African American students differently than their White counterparts (Qian & Blair, 1999).

Hill et al. (2004) found that achievement in both 6th and 9th grade (as defined by percentile rank on standardized tests in math and language skills) was found to be positively related to college aspirations in the 11th grade after controlling for SES, parent academic involvement, school behavior problems, and occupational aspirations. Adolescent aspirations were measured in the 11th grade and the two items that were used asked the adolescents to report on their chances of graduating from high school and attending college on a four point scale. This item, as worded, sounds less like whether a student aspires or wants to attend college, but instead better represents what the student perceives is the likelihood of attending college. Thus, their conceptualization and measurement of the aspiration variable may be confounded. Results, nevertheless showed that 9th grade achievement was highly and positively related to 11th grade aspirations. The proposed study aims to clearly distinguish

desire and perceived likelihood as they may very well be differentially impacted by achievement.

Cunningham et al. (2009) sought to determine whether having high academic future expectations would make high achieving African American students less vulnerable to the impact of negative friends. Here the authors examined the associations between self-esteem and GPA and both general and future expectations. Future expectations were broken down into two variables. Academic future expectations were measured using one item that asked “how many years do you think you will go to school?” The second expectations variable was called Future Likelihood Scale that assessed students’ perceptions of how likely an event will happen 10 years in the future. Examples of these events were things like having a good job, or becoming a community leader. GPA was determined based upon the students’ science and math GPA from their end of year transcripts.

Both the academic and the general future expectations had significant correlations with student GPA. Of relevance to the proposed study is that the academic future expectations, which asked specifically about perceptions about education, were more strongly associated with GPA than general future expectations. Whereas this study looked specifically at higher achieving students, the proposed study seeks to examine similar relationships within a wider range of achievement in African American students (Cunningham et al., 2009).

Given the aforementioned studies, it is clear that achievement is related to college plans in some form. While achievement can be measured in multiple ways, I plan to specifically examine the relationship that African American adolescents’ GPA has on college aspirations and expectations. As has been outlined, many studies have examined the impact

that students' SES and individual-level school experiences such as belonging, engagement and achievement have on high school students' college plans. Similarly, research suggests that contextual SES, or school SES, also plays an important role in the college decision making process. However, these individual and contextual level variables have only loosely been examined together and certainly not with a consistent and clear operationalization of college plans. This proposed study aims to not only explore the joint impact of these individual and contextual, but also with regard for their impact on African American students' desire and perceived likelihood of attending college.

CHAPTER 3

METHODOLOGY

The National Longitudinal Study of Adolescent Health (AddHealth) is a longitudinal study of adolescents and the social contexts in which they live. The study was initially developed to study factors that influence adolescents' health and risk behaviors. As the adolescents in the study aged, the goals of the study expanded to focus on how the adolescents' experiences and behaviors were related to their decisions, behaviors and outcomes during their transition into adulthood. Data were collected from adolescents, their peers, school administrators, parents, siblings, friends, and romantic partners through both in-school and in-home administration of the surveys.

Sampling

Add Health utilized a multi-stage random sampling procedure to collect four waves of data beginning in 1994 when the adolescents were in grades 7-12 (ages 10-20) and ending with wave IV when the respondents were 24-32 years old. In Wave I during the 1994-1995 school year, during the first stage of sampling, data were collected from 80 high schools which represented the U.S. schools with respect to region of country, urbanicity, size, type, and ethnicity. The initial sampling included high schools in the United States that had an 11th grade with at least 30 enrollees, in addition to a feeder school if the target school did not include 7th and 8th grade. More than 70% of the original 80 high schools participated in the study. A total of 132 high schools and feeder schools participated in the core study.

All students were eligible for selection in the in-home sample if they were listed on the school roster. Students in each school were stratified by grade and gender and then 17 students from each stratum were randomly chosen. Approximately 200 students from each

school were selected from the 80 schools to be interviewed, for a total core sample of 12,105. When weighted to account for the complex sample design, the core sample was nationally representative of the nation's sample of adolescents, grades 7-12, in the US in 1994-1995. In addition, the AddHealth study oversampled other groups including four ethnic groups, students with disabilities, and siblings. One thousand and thirty eight African American students from well-educated families (parent with a college degree) were also oversampled. This was done in order to gain a larger sample size from subpopulations, which are typically underrepresented in national samples. Due to this oversampling, the results should be interpreted with the precaution that the results may be less representative of the nation's African American high school population. The sample for the proposed study will include African American students in this oversampled population. In all, over 90,000 adolescents were interviewed in Wave I.

Wave II consisted of follow-up in-home interviews with the adolescents and school administrators in 1996. This second wave of data surveyed nearly 15,000 of the same adolescents one year after Wave I. 12th grade students from Wave I who were not related to another respondent were not sampled in Wave II.

Wave III data collection was conducted between August 2001 and April 2002 during in-home interviews with the respondents. A total of 15,170 Wave I respondents were located and re-interviewed. Lastly, a fourth in-home interview was conducted in 2007 and 2008 with the original Wave I respondents. This collection was designed as a follow-up study to the original adolescents sampled in the Wave I collection. At the time of this collection, the adolescents were ages 24-32 years old and entering adulthood.

All participants who indicated that they were African American and who participated in both waves I and III were selected. Cases were also selected only for participants who were grades 9 through 11 in Wave I. A total of 1775 students from 78 schools who were in grades 9,10 and 11 in Wave I reported that they were African American.

Data Collection

Only data from the in-home interviews administered during Waves I and III were used for this study. The first in-home questionnaire was administered between April and December 1995. The in-home questionnaire included, but was not limited to, topics such as health status, nutrition, peer networks, decision-making processes and educational aspirations and expectations. All students received the same interview, which was between one and two hours long. All data were recorded on laptop computers with no paper recordings in order to protect confidentiality. Less sensitive items were read aloud to the respondent and the answers were entered in the computer. For sensitive items the respondent listened to pre-recorded questions through headphones and entered her own items in the computer. In this study, data on African American students high school experiences, SES, school SES and college desire and perceived likelihood will be taken from the in-home dataset.

The Wave III questionnaire was designed to obtain information on relationships, childbearing, educational, work/career histories, and participant health from participants who could be located from Wave I. Additional sections were added that were more relevant to young adult issues.

Measures

The following measure descriptions included the operationalization of the measure, items that make up the measure, evidentiary literature which has used that particular

measure, factor loadings for the scales, and the Cronbach's alpha as evidence of the reliability of the measure. Variables, questions and responses can be found in Table 1 in the Appendix.

Mother's Education (Proxy for Individual SES)

Assessment of the students' SES were based on the mothers' level of education which has frequently been used as an indicator of SES (Bornstein & Bradley, 2003; Entwisle & Astone, 1994; Mistry, Biesanz, Chien, Howes, & Benner, 2008). Although Add Health also has a family income variable, which might be another appropriate measure of SES, more than five percent of that data were missing. Additionally, income may not be the best indicator of SES for the African American sample given that African Americans, even with college degrees, tend to earn less money than the White majority (Census, 2012). Thus, mother's level of education was a better indicator for SES in this study given these factors. Respondents with mothers who have higher levels of education were considered as having a higher SES as those who have lower levels of education. For this study, mothers were categorized as either having no college or as having some college.

In the Add health Study a single item in the in-home interview asked the students to indicate their residential mothers' highest level of education. The responses were *eighth grade or less; more than eight grade, but did not graduate from high school; went to a business, trade, or vocational school instead of high school; completed a GED, went to a business, trade or vocational school after high school; went to college, but did not graduate; graduated from a college or university; professional training beyond a four-year college or university; she never went to school; and she went to school, but student does not know what level*. In this study all responses were dichotomously coded. Any endorsement of *went to*

college, but did not graduate; graduated from a college or university; or professional training beyond a four-year college or university will be coded as having some college. The responses *eighth grade or less; more than eight grade, but did not graduate from high school; went to a business, trade, or vocational school instead of high school; completed a GED, or went to a business, trade or vocational school after high school* were coded as not having any college.

Percentage of Mothers in School with Some College (Proxy for School SES)

This measure served as a proxy for the SES of the schools that each student attended. For each school, the mother's education was determined for every student in that school using the same process described above. The school level variable was then determined by calculating the percentage of youth in the school whose mothers had some college. Similar risks and limitations to the individual level SES proxy, mother's education, apply to this variable. Schools with a higher percentage of mothers who attended college have higher school SES.

Sense of Belonging

This 5-item measure assessed students' senses of belonging to their school environment. Sample items include "you feel close to the people in your school" and "you feel like a part of your school". The items uses a Likert type scale ranging from 1-5 where 5 = strongly disagree and 1 = strongly agree. Items will be reverse coded and averaged so that a score of 5 indicates having the most fit and one indicates the least fit. The five items selected have also been used in previous studies as a form of school belonging and have demonstrated adequate reliability (Galliher, Rotosky & Hughes, 2004; McNeely, Nonnemaker, & Blum, 2002). For example, Galliher, Rotosky and Hughes (2004) used the

same items to assess school belonging for 7 through 12th grade students and had a Cronbach's alpha of 0.77. This same scale was used by King & Murdock (2010) when they assessed individual and contextual predictors of African American students' desire to attend college and perceived likelihood of attending college. Principal Component Analysis (PCA) analysis was run that extracted one variable with 49.62% percent variance explained. The internal consistency of the scale in that study was 0.75 (Cronbach's alpha).

Behavioral Engagement

This measure consists of two items that assess students' motivation to perform in school. The items asked how often the student has trouble getting homework done and how often the student has trouble paying attention in class. The measure used a Likert type scale with item responses including 0 = never, 1 = just a few times, 3 = almost every day, 4 = everyday, 6 = refused. The items will be coded such that 1 = never, 2 = just a few times, 3 = almost every day, and 4 = every day. Scores from both items were averaged and then reverse coded where 4 indicates having the most motivation. PCA analysis was run which extracted one variable with a total explained variance of 74.48% explained. Good internal consistency was established in King and Murdock's (2010) study, which used the same two items to measure academic behavioral motivation and found a Cronbach's alpha of 0.83.

Achievement

Students' achievement was assessed by calculating their grade point average (GPA) in four subjects; math, science, social studies and English. Questions in this measure asked students to choose their most recent grade in that class. Self-reporting grades can limit the accuracy of this variable (Kuncel et al, 2005). Findings show, for example, that minority students tend to report having lower grades than non-minority students while high school

students' self-reported grades are less accurate than college students' self-reported grades (Kuncel et al., 2005). However, research has shown that self-reported grades can still be used as a proxy for actual grades if treated with caution. These trends were considered in the analysis of this data. Item responses include A, B, C, and D or lower. All letter grades will be coded with a number where A = 4, B = 3, C = 2 and D or lower = 1. The scores for each grade will be averaged and that number will represent the students' GPA. King and Murdock used this same scale, which had a Cronbach's alpha of 0.90. This method of calculating achievement has been used in other Add Health studies (Eng et al., 2008).

Desire to Attend College/ Perceived Likelihood of Attending College

Students' desire to attend college were each measured using a single item that asked students to rate how much they want to go to college. The item used a Likert scale ranging from 1-5 with 5 representing the highest desire.

Students' perceived likelihood of attending college was measured using 1 item that asked students to rate how likely it is that they would attend college. This item used a Likert scale ranging from 1-5 with 5 being the mostly likely.

Although it is not ideal to use a single item to measure students' desire and perceived likelihood to attend college, the Add Health dataset does not include other items that examine these constructs. One major risk of using a single item measure is that it risks limiting the measure's construct validity. However, previous studies have used single items to measure various constructs related to adolescent's aspirations and expectations (e.g. Hanson, 1994; Kao & Tienda, 1998; Mello, 2009). Additionally these particular single item variables have been used successfully to measure aspirations and expectations in previous studies (Bohon et al., 2006; King & Murdock, 2010).

College Enrollment

College enrollment was measured by enrollment into a two year or four year, degree granting institute of higher education between the first and second year following high school graduation. Other studies have conceptualized college enrollment in this way where a student is considered enrolled if he or she enrolls in a 2 or 4 year program following graduating from high school (Eccles, Vida, & Barber, 2004; Perna & Titus, 2005; Zarate & Gallimore, 2005). However studies differ in the amount of time after high school graduation that a student must be enrolled. For example, Eccles, Vida, & Barber (2004) measured college enrollment as far as two years post-graduation whereas Zarate and Gallimore (2005) assessed college enrollment no more than one year post graduation. This study followed suit with Eccles et al. and assess college enrollment in a 2-4 year institute of higher education no more than 2 years post high school graduation. A grace period of two years was used so as not to limit the number of students who might be missed should the enrollment cutoff be only one year post high school graduation. Wave III was used to collect the college enrollment data.

A student's enrollment was assessed by determining the month and year she received her high school diploma and the month and year she enrolled in a two-year or a four-year college. Enrollment was established if the time between receiving a high school diploma and enrollment into the two or four year institute is 2 years or fewer.

Controls

African American school concentration. The concentration of African American students in a school is an important characteristic of school context, and given the African American sample in this study, would be likely to impact the other variables. In an effort to better understand the impact that contextual SES has on the variables at hand in this study, it

was appropriate to control for the concentration of African Americans in the schools. This was measured using the percentage of African Americans in the school where the student attended from Wave I of Add Health. The concentration of each student's school was assessed by calculating the percentage of African Americans in that school.

Gender. Gender was additionally used as a control in the study as it has been found to be a strong indicator for many of the examined variables (Goodenow, 1993a; Hanson, 1994; Sanchez et al., 2005; Wood, Kaplan & McLoyd, 2007). For example, females are more likely to report a greater sense of belonging than males (Goodenow, 1993a; Sanchez et al., 2005), are less likely to have unequal aspirations and expectations (Hanson, 1994) and have higher college expectations overall (Wood, Kaplan & McLoyd, 2007). Although gender effects are an important factor to consider in the evaluation of college plans, this study focuses mainly on the impact that mother's education and other high school experience variables have on college plans and actual enrollment.

Analytic Plan

Preliminary analyses were run in order to determine whether assumptions of normality (for continuous predictors), linearity, homogeneity of variance, and multicollinearity have been met. Univariate and multivariate outliers were analyzed and deleted as necessary. Additionally, a missing values analysis was conducted; results of this analysis appear in Chapter 4.

Analyses of the data were completed using IBM SPSS version 20.0. The design of this study is descriptive and quantitative. First a correlational analysis was run that includes all individual-level variables: individual SES, achievement, behavioral engagement, desire for college, perceived likelihood for college and college enrollment. The correlation between

school SES and concentration of African-American students in the school was also calculated. A second correlational analysis included both individual-level and school-level variables. These analyses demonstrate the patterns in relationships between all of the variables.

The hypotheses were analyzed using the linear mixed modeling module in SPSS 20.0 using restricted maximum likelihood estimation. Models were built that correspond to the five proposed hypotheses using multilevel modeling. Multilevel modeling was used because it allows for more accurate analyses that take into account both individual and contextual factors. To examine individual predictors, t-statistics and their statistical significance were used to examine whether relationships significantly differed from zero.

Generalized linear mixed modeling will be used for hypotheses with enrollment as the outcome because of its dichotomous nature. More specifically, a logit link function will be used to model the log likelihood of each outcome given the various predictors, and restricted penalized quasi-likelihood estimation (restricted PQL estimation) is used to estimate the models. When using generalized linear mixed modeling an approximate calculation of the ICC appropriate for use with multilevel logistic regression (described in Snijders & Bosker, 1999) was used to justify the use of multilevel modeling. To examine individual predictors, t-statistics¹ associated with the individual log-likelihood values and their statistical significance were used along with the odds ratios and 95% confidence intervals.

Ethical Considerations

¹ Although Wald Z-tests are used to assess the statistical significance of predictors in single-level logistic regression analyses, SPSS 20.0 employs t-tests to assess the significance in the multilevel generalized linear model framework. These t-tests do not come with degrees of freedom in SPSS 20.0

This study used an archived database from Add Health for all analyses. The author completed a Human Subjects Determination Form to allow the SSIRB an opportunity to verify that this research falls outside of its purview. However, since the data used was restricted in content, all procedures followed the confidentiality agreement set up by Add Health. All data analyses were conducted in the designated confidential areas and no data were removed from these areas. No identifying data were used in the analysis. There are no serious anticipated risks involved for the participants of the study.

CHAPTER 4 RESULTS

Preliminary Analysis

Missing values analysis showed that grades for History and Science were missing more than 5% of their values; 13.1% and 8.7% respectively. It was determined that the highest percentage of missing values was due to students not having taken these courses, as 11.9% of the participants with missing cases for science and 7.7% for history selected this response option instead of reporting a grade. Consequently, substitute values were not input for these missing values and they were counted as system missing, and GPA was calculated using available data only. All other variables were missing fewer than 5% of the cases, so list wise deletion was used before variables were created.

For the individual level variables, scales were created for Sense of Belonging, Engagement, GPA, College Enrollment, and Mother's SES. Acceptable scale reliability was demonstrated for Belonging (.74), Engagement (.66) and GPA (.67). The values for Engagement and GPA are slightly lower than desired. The Engagement scale consisted of only two items, which might account for the lower alpha level, thus we chose to keep the scale. The calculations used to determine GPA have been used in other studies (Eng, et al., 2008; King & Murdock, 2010), which is evidence that the scale has substantive meaning. Belonging was reverse-coded so that it matched coding of other variables where, higher numbers on the scale represent greater belonging. Similarly, higher numbers indicated greater engagement on the Engagement scale, and higher GPA on the GPA scale. Mother's education was coded as 1 if mother had some college education and as 0 if mother had no college education. For school level variables, School's SES was determined by calculating

percentage of all students in school who had mothers with some college education.

Percentage of African Americans in each school was also calculated.

All variables were checked for normality and were found to be within acceptable limits for kurtosis and skewness. No univariate outliers were deleted. A standard regression analysis was run in order to determine the presence of multivariate outliers. Cook's distance and Centered Leverage values were within the normal range. Prior to all analyses, continuous variables were all converted to z scores in an effort to standardize the values, center them on their grand mean, and allow for easier interpretation of the data. Also, because gender is a dichotomous variable, it was grand-mean centered but not z-scored.

Hypothesis Analysis

The following five hypotheses were examined using SPSS 20.0.

- 1) *The individual student's SES (examined in terms of mother's education) will differentially predict African American students' desire to attend college versus her perceived likelihood of attending college, such that the relationship between SES and perceived likelihood is more strongly positive than the relationship between SES and desire.*
- 2) *African American students' sense of school belonging, academic engagement and achievement will differentially predict both their desire (abstract attitudes) to attend college and their perceived likelihood (concrete attitudes) of attending college, such that the relationship between the aforementioned predictors and perceived likelihood will be stronger than those between the predictors and desire to attend college.*

3) *School socioeconomic (examined here as the proportion of mothers going on to college) status will positively predict attitudes toward college above and beyond individual SES.*

a. *The socioeconomic status of the African American adolescent's school will differentially predict the student's desire to attend college versus her perceived likelihood of attending college, such that the relationship between the school's SES and perceived likelihood will be more positive than the relationship between the school's SES and desire.*

b. *The school's SES will also act as a moderator between the student's desire to attend college and perceived likelihood of attending college; specifically, the strength of the relationship between these variables will increase as the school level SES increases.*

4) *African American students' perceived likelihood of attending college will mediate the relationship between students' desire, sense of school belonging, academic engagement, achievement and college enrollment*

5) *Actual college attendance will be differentially predicted by the student's perceived likelihood of attending college and the students' social context. The school's SES will also act as a moderator between the students's perceived likelihood of attending college and actual college enrollment. Specifically, the strength of the relationship between these variables will increase as the school level SES increases.*

In order to conduct multi-level modeling in SPSS, a model without predictors, or the null model for each outcome variable was first built. The purpose of the null model is to provide an estimated mean score for both students' likelihood and desire. The null model also

provides an estimate for the intraclass correlation (ICC), which is used to describe the proportion of variance that is common to each Level 2 unit. It roughly helps estimate variance associated between schools. According to Heck, Thomas, and Tabata (2010) 5% is often the cutoff point by which researchers determine whether further multilevel analysis is warranted due to sufficient level 2 variance. The ICC for the students' perceived desire was 3.7% and 4.6% for perceived likelihood. This means that 3.7% of the variability in desire lies between schools whereas 4.6% of the variability of likelihood lies between schools. Although the ICCs are somewhat lower than Heck et al.'s cutoff, multilevel modeling was still warranted as the contextual variables are being considered as a way to further explain relationships between individual factors as will be done in Hypotheses 4 and 5.

Hypothesis 1

To assess whether the relationship between mother's education and perceived likelihood is more strongly positive than the relationship between mother's education and desire, mother's education was used as a predictor of each outcome. Mother's education was used to first predict desire and then to predict perceived likelihood. Gender was used as a control.

Results showed that students' perceived likelihood was more strongly associated with mother's education than desire (Table 1). Likelihood produced a larger t score ($t(1501.82) = 8.04, p < .001$) than desire ($t(1446.83) = 5.08, p < .001$). Overall, mother's education accounted for 10.4% of the within school variability in students' perceived likelihood of attending college, whereas they only accounted for 8.4% of the within school variability of students' desire to attend college. Mother's education also explained 39.13% of the between

group variance in likelihood whereas it explained 37.84% of the between-group variance in desire.

Hypothesis 2

To assess whether African American students' high school experiences would be more strongly associated with their desire (abstract attitudes) to attend college or their perceived likelihood (concrete attitudes) of attending college, sense of school belonging, academic engagement and achievement were used as predictors of each outcome (see Table 1). Results showed that after controlling for gender and mother's education, both GPA and Belonging significantly predicted students' desire to attend college ($t(1377.81) = 7.35, p < .01$, $t(1595.47) = 5.30, p < .001$). The same analysis was run with students' likelihood as the outcome variable and again, both GPA and Belonging were significant predictors ($t(1334.73) = 10.72, p < .001$, $t(1587.84) = 6.42, p < .001$). Additionally, the within school variance explained by the high school experiences were calculated using residual estimates from level 1 analyses with just mother's education as the predictor and then with mother's education and high school experiences for both outcome variables. Overall, students' high school experiences accounted for 11.9% of the within school variability in students' perceived likelihood of attending college, whereas they only accounted for 6.8% of the within school variability of students' desire to attend college. These experiences explained 39.13% of the between group variance in desire while explaining 67.86% of the between-group variance in likelihood.

Hypothesis 3

To assess whether school context would be more strongly related with perceived likelihood than with desire, school SES (% of mother's education in school) was added, as a

predictor, to both models (desire and likelihood) in addition to individual mother's education and high school experiences. In this analysis the two level-2 variables were added to the previous models. Then, variables for the percentage of mothers' in the schools with some college education (mothers' SES-level 2) and percentage of African American students in the school were added into the analysis. Both of these variables represented the school context as level 2 variables.

Results showed that neither school level-2 variable significantly predicted students' desire to attend college. Results also showed that only mothers' SES (level 2) was significantly related to students' perceived likelihood of attending college, not percentage of African American students ($t(35.65) = 3.49, p < .001$), with a slope of .09, $p < .001$. There was also no change in the within group variance explained of either outcome variable when the social context variables for school SES and percentage of African American students in each school were added. However, Mothers' education on level 2 explained 14.29% of the between group variance in desire and explained 33.33% of the between group variance in likelihood.

Next, school context was assessed as a moderator between desire and likelihood in mixed model analysis. The variable for students' desire was added to the model as a random effect with perceived likelihood as the outcome variable with all other predictors in the model in order to determine whether there was between-school variability in this relationship that could be explained by school SES. Results showed that there was no significant slope variance, which meant that there was no difference between schools in how desire related to likelihood. Thus, there was no reason to continue to calculate the interaction.

Hypothesis 4

To assess whether perceived likelihood of attending college would mediate the relationship between desire, individual mother's education, high school experiences (belonging, engagement, achievement) and actual college enrollment, the pseudo-ICC for logistic regression was calculated according to Snidjers & Bosker's (1999) formula. According to the calculations, 20.3% of the variance in college attendance lies between schools. It is important to note that the pseudo-ICC value is significantly higher than the ICCs calculated previously. The previous two outcome variables, desire and perceived likelihood, are subjective constructs compared to actual college attendance, which is an objective construct. It can be argued that subjective constructs are based on one's perceptions and are more individually determined whereas college enrollment is an outcome that schools have a more direct impact on, which might explain why there is more between school variance. To assess the mediation, college enrollment was entered as the outcome variable in a generalized linear mixed model. Desire, students' high school experiences, mothers' education and gender as a control were added as predictors (see Table 2). Results showed that GPA, mother's SES and Desire were all significant predictors of initial college enrollment. Results showed that for every 1 unit increase in a student's GPA, the student is 0.64 ($t(1590) = .64, p < .001$) times more likely to attend college. For every 1 unit increase in mother's SES the student is 0.44 ($t(1590) = .44, p < .001$) times more likely to attend college. For every 1 unit increase in a student's desire to attend college, she is 0.44 ($t(1590) = .44, p < .001$) times more likely to attend college.

Next, the same generalized linear model was run with the addition of students' perceived likelihood added to the model. Again, results showed that GPA, mother's SES and desire were all significant. Results showed that for every 1 unit increase in a student's GPA,

she is 0.59 ($t(1589) = .59, p < .001$) times more likely to attend college. For every 1 unit increase in mother's SES she is 0.40 ($t(1589) = .40, p < .001$) times more likely to attend college. For every 1 unit increase in a student's desire to attend college, she is 0.41 ($t(1589) = .41, p < .001$) times more likely to attend college. Lastly, for every 1 unit increase in a student's likelihood to attend college, she is 0.21 ($t(1589) = .21, p < .05$) times more likely to attend college.

Students' GPA and desire and mothers' SES all had a lower effect on college attendance when perceived likelihood was added. This indicated that likelihood may be a mediator and explain some of the variance between college attendance and GPA, mom's SES and desire. According to Baron and Kenny (1986) when three variables are related to one another testing for mediation is justified. The Baron and Kenny method was used to test for mediation between the predictors, likelihood and college attendance. The estimates and standard errors for the calculations were taken from the analyses of desire, mother's education, engagement, GPA and belonging on perceived likelihood and from the analysis of perceived likelihood on college attendance. Results showed that desire ($t = 2.43, p < .05$), mothers' education ($t = 1.39, p < .05$), GPA ($t = 2.34, p < .05$), and belonging ($t = 2.07, p < .05$) all produced a significant Sobel Test suggesting that likelihood mediated the relationship between those variables and college attendance.

Hypothesis 5

For this hypothesis both school context variables were added to the aforementioned model to assess whether the addition of the school context variables would significantly explain more variance in students' actual college attendance. Thus, students' desire and likelihood, high school experiences, mothers' education and school SES and percentage of

African Americans in each school were now in the general linear model (see Table 2). As was stated in hypothesis 4, results showed that for every 1 unit increase in a student's GPA, the student is 0.59 ($t = 8.09$, $p < .001$) times more likely to attend college. For every 1 unit increase in mother's education the student is 0.40 ($t = 6.36$, $p < .001$) times more likely to attend college. For every 1 unit increase in a student's desire to attend college, the student is 0.41 ($t = 4.82$, $p < .001$) times more likely to attend college. Lastly, for every 1 unit increase in a student's likelihood to attend college, the student is 0.21 ($t = 2.43$, $p < .05$) times more likely to attend college.

The final model, which included the contextual variables, showed that for every 1 unit increase in a student's GPA, the student is 0.58 ($t = 8.06$, $p < .001$) times more likely to attend college. For every 1 unit increase in mother's SES the student is 0.37 ($t = 5.94$, $p < .001$) times more likely to attend college. For every 1 unit increase in a student's desire to attend college, the student is 0.21 ($t = 2.45$, $p < .05$) times more likely to attend college. For every 1 unit increase in a student's likelihood to attend college, the student is 0.41 ($t = 4.74$, $p < .001$) times more likely to attend college. School SES was the only significant context variable, showing that for every 1 unit increase in the school's SES, the student is 0.42 ($t = 3.78$, $p < .001$) times more likely to attend college.

When the residuals from each model are compared, there is a 20% change in explained group variance of students attending college. In other words, school context as represented by school's SES explains college attendance 20% more than the level 1 predictors. School context was assessed as a moderator for perceived likelihood and actual college enrollment. To confirm whether analysis of an interaction was necessary, the variable for students' likelihood was added to the model as a random effect with perceived college

enrollment as the outcome variable and with all other predictors in the model. The analysis produced an error message that stated that the validity of the model fit is uncertain. No data were produced to determine the slope of the random effect. According to Heck, Thomas and Tabata (2010) this error message occurs when the parameter of the random slope is too small to calculate. In other words, the program was unable to estimate whether the slope between likelihood and college attendance varied among schools. Although the ICC was rather high, the ICC is an estimate of the intercept variance for the outcome variable. The error message pertains to the slope variance between likelihood and the predictors on college attendance. This indicates that the schools vary in proportion of the students who actually go to college, but that perceived likelihood has a consistent relationship with the variables across schools. Thus, there was no reason to continue to calculate the interaction.

CHAPTER 5

DISCUSSION

The purpose of this study was to explore the extent to which student and school SES, engagement, achievement and belonging jointly predicted African American students' college decision making process and actual college attendance. This study used Mickelson's attitude-achievement paradox to conceptualize educational aspirations into two distinct constructs where the variable for students' desire represents their abstract attitudes and their perceived likelihood represents their concrete attitudes. Results showed that both mothers' education and students' high school experiences were more strongly related to perceived likelihood of attending college than they were to students' desire to attend. School socioeconomic context, as represented by the percentage of mothers in the school with some college, also had a stronger relationship with perceived likelihood than with desire; however, school context did not serve to moderate the strength of association between desire and likelihood. Results also showed that the individual level variables, including students' desire and perceived likelihood, were significant predictors of students' actual college enrollment. More significantly, likelihood acted as a partial mediator between the individual level variables and college enrollment. School SES was found to explain further variance in college attendance; however, it did not act to moderate the relationship between the individual level variables and college attendance.

The initial steps of the study were to determine the strength of relationships between mother's education and desire and likelihood. Our hypothesis was supported in that SES differentially predicted African American students' desire to attend college versus their perceived likelihood of attending college. According to Mickelson's (1990) attitude-

achievement paradox abstract attitudes, which we conceptualized as student desire, represents the idealistic belief that education is possible for all people. Contrarily, concrete attitudes, or perceived likelihood is a product of one's economic status and therefore more reality based. The results of the first hypothesis support this conceptualization. While mother's education, or individual level SES, was related to both desire and perceived likelihood, there was a stronger relationship between mother's education and likelihood. Therefore it could be said that the students' SES is a better indicator of the students' concrete and reality based belief that they would be able to attend school. This supports the idea that all students regardless of economic status may hold the abstract beliefs that education is available to all, but the stronger relationship between SES and likelihood suggests that for African American students, their perceived likelihood of attending college is dependent on their economic circumstance.

The second hypothesis was also supported. The relationship between students' high school experiences and desire and likelihood were examined and results showed that students' sense of school belonging and GPA were more strongly related to likelihood than desire. Previous research shows that sense of belonging is often linked to many positive outcomes such as achievement (Anderman, 2002; Finn, 1989) and college persistence (Tinto, 1975). Studies also show that certain reality based characteristics of a school are linked to students' belonging. For example, when African American students perceive a tense racial environment, they experience less belonging (Booker, 2004; Goodenow, 1993A; Hurtado & Carter, 1997). Thus, sense of belonging can be conceptualized as a concrete, reality-based attitude that students hold towards their environment. In this study sense of belonging predicted likelihood which represents students' concrete attitudes toward college attainment.

This suggests, for example, that African American students who have the positive experience of feeling more connected to their current educational context may be more likely to believe they can continue their education after high school.

As previously mentioned, achievement has also been linked to students' sense of school belonging (Anderman, 2002; Finn, 1989) and like belonging, it can be conceived as a representation of the student's reality. A student's GPA is frequently used as an indicator of academic achievement because it represents a student's academic performance in the classroom (Kuncel et al., 2005). GPA was used in place of achievement testing, which is often used interchangeably as a measure of achievement (Stipek & Weiss, 1981; Wentzel, 1989), because GPA (like engagement and sense of school belonging) is closely linked to the high school experience. Therefore, GPA can be thought of as a part of the student's reality, much like their sense of school belonging. The results support this theory in that the students who performed better academically perceived themselves as more likely to attend college, regardless of their abstract level of desire.

Engagement was neither a significant predictor for desire nor for likelihood. Like belonging and achievement, engagement has been linked previously to educational aspirations (Bohon et al., 2006; Sirin & Sirin, 2004), however there has been debate over how exactly engagement should be conceptualized and measured. We chose to focus on behavioral engagement, which is just one component of Academic Engagement. Our version of behavioral engagement was supposed to express the effort the student puts into his academic work. We used two variables that we believed best represented this concept; how often the student had trouble getting his homework done and how often the student has trouble paying attention. Other researchers who measured similar facets of engagement using the

Add Health data set, namely school engagement and disengagement, included these two variables in more comprehensive measures (Bohon et al., 2006; Sirin & Sirin, 2004).

Although these two variables together showed moderate internal consistency, perhaps the assessment of how often a student has trouble getting her homework done and has trouble paying attention in class alone were not the best representation of behavioral engagement and did not fully capture this concept. Rather, the variables that were used may have better reflected the students' problem behaviors more so than their engagement behaviors. In this case it might make sense that the variables would not necessarily predict the student's desire to and perceived likelihood of attending college.

Another reason that engagement may not have been a significant predictor of the outcome variables may have been because there may be too much shared variance between engagement and achievement. Looking at the bivariate correlations in Table 3, engagement was significantly correlated GPA and likelihood. When both engagement and GPA are included as predictors of likelihood in the same model and engagement is not a significant predictor, GPA could be explaining the same portion of variance in likelihood as engagement. Further research may need to be done to create a better conceptualized way to measure this variable using Add Health data, and which one is a better predictor for African American college decision making. Overall the first two hypotheses demonstrate how reality based factors such as belonging, GPA and mother's education are more strongly related to the concrete and reality based concept of perceived likelihood of attending college than the abstract idea of simply wanting to attend college. With the exception of engagement, the stronger relationship between belonging, GPA and likelihood represents the students' concrete attitudes whereby the students' perceived likelihood of attending college is a better

reflection of the students' achievement and belonging which are more reality based and reflective of the idealism of their desire or abstract attitudes.

Hypothesis 3 was partially supported in that the schools' SES was a stronger predictor for students' likelihood than desire, but did not support the hypothesis that school SES would be a moderator between desire and likelihood. Results showed that the school's SES was not a significant predictor of desire, but did predict students' perceived likelihood. These results suggest that African American students' concrete attitudes towards higher education are related to the reality of their school's SES status. It also indicates that a student's economic environment at school has little to do with whether they want to attend college when their individual SES and high school experiences are considered. The results might suggest that an African American student's individual SES may, along with the other individual level variables, be enough to explain the student's desire to attend college. Although both individual and social SES may be reality based, the school's economic environment may not be important enough to affect whether the student wants to go to college over and above the individual's SES. This might even suggest that individual level variables are generally better indicators for desire as they more strongly impact the student than do social context variables.

Regarding the second part of Hypothesis 3, results showed that it was unnecessary to calculate an interaction between desire and school SES on likelihood because desire predicted likelihood to the same degree regardless of the school attended. This means that regardless of school attended, there is a similar relationship between African American students' desire and perceived likelihood of attending college. Thus, a school's economic status cannot not strengthen or weaken the relationship between the African American

student's desire for college and perceived likelihood of attending college across different schools, because there is no variance across schools to explain. This means that a student who attends a school with a higher SES will have a similar disparity between abstract and concrete attitudes as a student who attends a school with a lower SES. This effect, in addition to the finding that the school's SES is a better predictor of the student's perceived likelihood than it is of desire, suggests that a student's idealistic beliefs may be a separate consideration for the student's decisions about college attendance from other reality based factors.

Results supported the fourth hypothesis that students' perceived likelihood of attending college would mediate the relationship between desire, mother's education, high school experiences and actual college enrollment. Likelihood mediated the relationship of students' desire, mother's education, belonging, GPA to college attendance. These results first demonstrate that a student's desire to attend college is connected to their actual college attendance, but that this relationship is in part due to the extent to which they are associated with the extent that the student perceives that he is likely to attend college.

The effects of belonging and GPA on actual college attendance were both partially mediated by perceived likelihood. As previously found, engagement has not been a significant predictor for any outcome variables in this study, so the lack of mediation effect for engagement on college attendance follows suit. Belonging is a subjective and individualistic experience that represents how the student perceives the reality of herself in the school. In other words, a student's perception of belonging may be based in the reality that she feels like she is a part of her school, she feels close to other people in her school or that she feels safe in her school. As these qualities are based in her reality, belonging can be

considered as grounded in concrete experience and perceived likelihood (which is assessed at the same time that students report a particular level of belonging) may tap into part of this. One reason likelihood explained the relationship between belonging and actual attendance could be because the student's perceived likelihood is a future oriented perception and belonging represents the student's perception in the present, so likelihood, in turn, bridges the gap between a present perception and future event. An African American student who feels that she is a significant part of her high school community may believe that it is likely she will attend college with the assumption that college will be just as welcoming, safe and supportive as high school. As a partial mediator, the direct effect of belonging on attendance may be due to the support and encouragement that the student feels around academic decision making. For instance, an African American student may make the decision to attend college and the encouragement and support from her high school on the matter may lead to college enrollment.

Like belonging, likelihood partially mediated the relationship between GPA and college attendance. A student's GPA could be seen as a direct representation of a student's abilities to complete work and function in an academic environment and thus a solid reflection of their concrete attitudes towards education. Again, GPA represents a student's academic performance (Kuncel et al., 2005). So, like belonging, perceived likelihood may have simply represented the student's perception of the reality of attending college and may also demonstrate to the student that if he can earn good grades in high school, he can likely earn good grades in college. As a partial mediator, GPA also directly predicted college attendance and good grades are often required for college enrollment. Thus high achievement directly predicts whether a student goes to college. However, this analysis demonstrates that

at least part of the effect of a high GPA on college attendance is due to the strengthening of students' beliefs about their ability to attend colleges.

Likelihood also partially mediated the relationship between actual college attendance and mother's education, which is a reflection of the student's economic reality. In this study a student's economic reality is represented by his mother's education. So, if a student knows that his mother has attended college and presumably was economically able, the student might perceive that it is also likely that he could attend college and have the wherewithal to do so, which would be the catalyst to then actually enroll. As a partial mediator, mother's education represents the reality of economic opportunity, which is directly necessary in order to attend college. In other words, for African American high school students, college enrollment will be dependent upon the economic opportunity that their mothers' education represents.

The last hypothesis was partially supported in that college attendance was differentially predicted by the students' perceived likelihood and the students' social contexts, but school context was not a moderator between likelihood and college attendance. As was stated in the results section, according to Heck et al. (2010) it is difficult to calculate a random slope if it is too small, which it seemed to be in this case. The program was thus unable to estimate whether the slope between likelihood and college attendance varied among schools. The results showed that school context did explain additional variance in college attendance. So in addition to students' desire, likelihood, GPA, and mother's education, the school's SES was another predictor of the African American students' college attendance. However, the results also showed that the relationship between these predictors and college attendance did not vary across schools. So, the relationship between mothers'

education, GPA, desire, likelihood and college attendance stayed the same regardless of the school context. In other words, for an African American student, her mother's education, GPA, desire and likelihood would predict her college attendance the same regardless of whether she went to a school with low SES or with a higher SES.

Given these findings it appears as though many African American high school students, regardless of socioeconomic status, seem to believe in the idea that everyone can attend college. However, how those students perceive their likelihood of actually attending, which is aligned with Mickelson's concrete attitudes, is heavily reliant on those students' SES, achievement in high school and sense of belonging to their school. In other words, an African American student who has a strong sense of school belonging, performs well academically, and has a mother who has attended some college, is more likely to perceive himself as being likely to attend college.

Given that perceived likelihood acted as a partial mediator between desire, mother's education, belonging, achievement and actual college attendance, this study further demonstrates the importance of African American students' concrete attitudes (i.e., beliefs based in reality) on their educational aspirations. Not only do we know that perceived likelihood is a product of these individual level predictors, but we know that beliefs about likelihood is the vehicle through which college attendance is partially explained by those predictors. In other words, an African American student's desire to attend college, his sense of school belonging, achievement and his individual SES are influential in whether he actually attends college because those factors give credence to the likelihood that he could actually attend college. It is also important to acknowledge the direct effects that these variables have on college attendance. These effects imply that individual SES, belonging,

achievement and desire, alone, are also important in creating a specific reality for the student composed of the student's ability to fund college, the student's feelings about her environment, getting the grades to actually enroll, and simply wanting to go to college.

The results also imply that the school's economic environment also contributes to the student's actual college attendance. Again, this aligns with Mickelson's theory in that like perceived likelihood, college attendance is also a reflection the reality for the African American student and the school's economic environment. Once again, these relationships did not vary across schools, which suggests that an African American student who desires to attend college, perceives he is likely of doing so, who has a higher GPA and whose mother has attended some college, is more likely to actually attend college regardless of his school's economic status.

Implications

The results of this study demonstrate that African American students' 'abstract attitudes such as their desire to attend college are less important to actual college attendance than the students' concrete attitudes such as whether the students perceive they are likely to attend college. Interventions should address students' concrete attitudes about their academic experience and future. Counselors and teachers who work with African American high school students should not rely on their desire to go to college as enough to motivate them to get there, but instead encourage students' academic achievement and school belonging and address their economic limitations in an effort increase the students' perceived likelihood of attending college.

This study suggests that both their individual and contextual level SES and high school experiences are important factors in their perceived likelihood of attending college

and actual college attendance. Regarding the importance of SES, this study supports evidence that economic opportunity is an extremely strong predictor of both perceived likelihood (concrete attitudes) and college attendance, which can be very discouraging for educators and students as they have little control over these factors. To challenge this effect, educators could create interventions that address this issue. Studies have demonstrated previously that when urban students get help with financial aid applications for college, they are more likely to attend (Roderick, Coca, & Nagaoka, 2011). For instance, all school staff who are in contact with the students could support students' college aspirations by actively and consistently speaking with students about college as a viable option throughout their schooling process. Additionally, educators could add lesson plans and programs for students from a lower income household that assist them in locating funding for their education.

Although this study suggests that students' decisions around college attendance are in large part due to a larger social context of economic opportunity, it also highlights the importance of developing strong relationships in high school to increase one's sense of school belonging. For example, providing general support for students in their academic and career decisions would be helpful in getting students to consider college as an option. Additionally, African American students often lose a sense of school belonging when they encounter racial disparities in their academic environment (Booker, 2004; Goodenow, 1993a; Hurtado & Carter, 1997) so educators, administrators and counselors should also work to make the academic environment more multiculturally sensitive and welcoming to African American students in order encourage those students to pursue higher education.

An argument can be made that one major assumption behind this study is that the hypothesis are all culturally based. In other words, the factors involved as predictors

including their concrete and abstract attitudes towards education and individual and school level SES are participant specific or based from the participant's subjective experience and environment. Alternatively, there are other factors, of a larger scale, that may also play a role in how these decisions are made. For example there are political factors such as school funding, district sizing and arrangement, national and state curriculum requirements, and even the availability and quality of loan distribution and repayment that can affect decision making about college. Future research can address the differences between these cultural and political factors and their effects on participant expectations and aspirations for college.

Limitations and Future Research

One of the common limitations that occurs when working with large datasets and then compiling one's own measures and constructs is that the researcher is unable to create the items she uses to construct those measures. Consequently, we had to utilize the preformed items to create the measures and then test for the validity and reliability. Even so, the validity of the measure is still at risk because we can assume we are unaware of the item writer's intent for the item, nor the participant's interpretation. The negligent effect that the engagement variable had on the outcome variables in this study suggests that perhaps the two items used to conceptualize engagement may have been less a matter of incorrect hypotheses and more a matter of poor measure validity. It is also not ideal to use single items to conceptualize a construct as was done for both the items for desire and perceived likelihood. Again, this is a sacrifice that was made when using a large database with preformed and limited items.

Large scale, longitudinal national data sets offer many assets. It increases the generalizability or population validity that otherwise may have been lost through

convenience sampling. The sample in this study was representative of African American high school students across the nation, which would imply that the results could be applicable to all African American high school students. However, the data was collected over 15 years ago, so future researchers could replicate this study on a more current sample. As the data collection is longitudinal, further research might also explore how decision making about college may affect the same participants' future decisions collected in future waves.

Further research should continue to explore other factors that may increase students' perceived likelihood of attending college. There may be high school experiences in addition to achievement and belonging that also impact one's perceived likelihood of attending college. Engagement should also be re-examined both in its relationship to GPA and in its prediction of likelihood. Additionally, future research should examine whether these same patterns of college decision making apply to other communities. Given the economic implications of this study, it will be important to understand how other marginalized groups such as Latino American students, refugee populations and immigrants make the decision to attend college. Similarly, it may be important to see whether these patterns also hold true for Euro American students and whether there are important differences between the college decision-making process for student groups who typically have fewer economic opportunities and those who have more economic opportunities.

Although this study only considered gender as a control and did not include an extensive theoretical consideration of the construct, it should be noted that gender did significantly predict one's perceived likelihood of attending college. Specifically, results showed that there was a relationship between female African American participants and their perceived likelihood of going to college where females were significantly likely to perceive

going to college through all three steps of the analysis. Interestingly, no significant effect for gender was found in the prediction of college attendance, which suggests that neither gender had a significant relationship with actual college attendance. Future research should continue to explore gender effects in college expectations and attendance; specifically examining why gender differences exist in expectations and aspirations for college attendance, but not for actual college enrollment. Researchers can further explore the gender dynamics in African American students' educational attainment.

Another direction for future research might be to explore specific parental effects on these outcome variables. Mother's education was used in this study as a proxy for SES, however future studies might take a more in depth look at how father's education and even father's presence in the participant's household impacts the student's decisions about college. Additional family variables may also be considered such as sibling and peer influence.

This study attempts to shed light upon factors that may be responsible for the underrepresentation of African American students in higher education. When a person obtains a bachelor's degree or higher, a host of opportunities open up, including career satisfaction and stability, higher social class, and positive outcomes for one's children. Since African American students are less likely to pursue a degree in higher education, they miss out on many of these opportunities. By the time a senior graduates from high school, they have had variety of experiences that have shaped their decision to attend college. This study implicates the importance of both individual and school level SES, a sense of school belonging, and achievement in shaping African American high school students' academic decision making. It additionally seeks to help educators and researchers understand the difference in outcome of an African American student who has the abstract idea that college,

in theory, is available to everyone and the student who holds the more realistic and concrete attitude that if they believe they are likely to attend college, they more likely will.

This research is supported by a grant from the American Educational Research Association which receives funds for its “AERA Grants Program” from the National Science Foundation and the National Center for Educational Statistics of the Institution for Education Sciences (U.S. Department of Education) under NSF Grant #REC-9980573. Opinions reflect those of the author and do not necessarily reflect those of the granting agency.

ILLUSTRATIONS

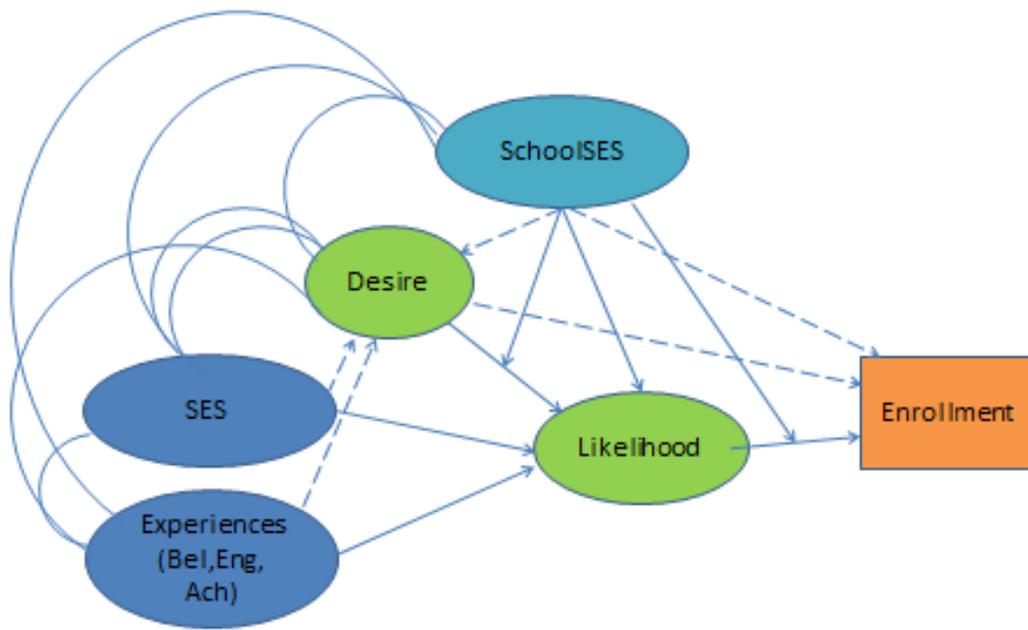


Figure 1. *Full Model*

APPENDIX

Table 1
Add Health Variables and Responses

Variable	Questions	Responses
Desire	On a scale of 1 to 5, where 1 is low and 5 is high, how much do you want to go to college?	
Perceived Likelihood	On a scale of 1 to 5, where 1 is low and 5 is high, how likely is it that you will go to college?	
Academic Behavioral Engagement	Since school started this year, how often have you had trouble:	0 Never 1 Just a few times 2 About once a week 3 Almost everyday 4 Everyday
Sense of Belonging	paying attention in school? getting your homework done? How much do you agree or disagree with the following statements:	1 Strongly agree 2 agree 3 neither agree nor disagree 4 disagree 5 strongly disagree
Achievement	you feel close to people at your school. feel like you are part of your school. You are happy to be at your school. The teachers at your school treat students fairly. You feel safe in your school. At the {MOST RECENT GRADING PERIOD/LAST GRADING PERIOD IN THE SPRING}, what was your grade in English or language arts? And what was your grade in mathematics? And what was your grade in history or social studies? And what was your grade in science?	1 A 2 B 3 C 4 D or lower

Table Continues

Variable	Questions	Responses
Individual SES	<p>How far in school did she (residential mother) go?</p> <p>Some College - <i>went to college, but did not graduate; graduated from a college or university; or professional training beyond a four-year college or university</i></p> <p>No College - <i>eighth grade or less; more than eight grade, but did not graduate from high school; went to a business, trade, or vocational school instead of high school; completed a GED, or went to a business, trade or vocational school after high school</i></p>	<p>1 eight grade or less</p> <p>2 more than eighth grade, but did not graduate from high school</p> <p>3 went to a business, trade, or vocational school instead of high school</p> <p>4 high school graduate</p> <p>5 Completed a GED</p> <p>6 went to a business, trade, or vocational school after high school</p> <p>7 went to college or university, but did not graduate</p> <p>8 graduated from a college or university</p> <p>9 professional training beyond a four year college or university</p> <p>10 she never went to school</p> <p>11 she went to school, but I don't know what level</p>
School level SES (context)	% of residential mothers in school with some college	
College Enrollment	<p>In what (month and) year did you receive your high school diploma?</p> <p>In what (month and) year did you first enroll in or attend this school?</p> <p>Is this a high school, a two-year college, a four-year college, or a graduate school?</p>	<p>1 high school</p> <p>2 two year college</p> <p>3 four year college</p> <p>4 graduate school</p>

Table 2

Summary of Multilevel Modeling for variables predicting students' Desire to and Perceived Likelihood of attending college
($N = 1775$, $N = 78$)

Variable	Desire				Likelihood			
	Null	Step 1	Step 2	Step 3	Null	Step 1	Step 2	Step 3
Intercept	.021(.038)	.052(.034)	.044(.031)	.039(.03)	.01(.041)	.042(.036)	.034(.028)	.036(.024)
Gender		.095(.048)*	.055(.048)	.055(.048)		.238(.047)**	.174(.046)**	.173(.046)**
Mother's Education		.121(.024)**	.113(.023)**	.106(.024)**		.194(.024)	.183(.022)**	.165 (.023)**
Engagement GPA			.013(.025)	.015(.025)			.04(.024)	.044(.024)
			.184(.025)**	.181(.025)**			.257(.024)**	.252 (.034)**
Belonging			.129(.024)**	.129(.024)**			.149(.023)**	.146 (.023)**
School: Mother's Education				.036(.029)				.085 (.024)**
AA%				-.035(.031)				-.035(.031)
Variance Components								
% Reduction		37.84%	39.13%	14.29%		39.13%	67.86%	33.33%
Level 1 (Residual)	.966**(.033)	.884*(.031)	.824**(.03)	.825**(.03)	.954**(.954)	.855**(.031)	.753**(.027)	.753**(.027)
% Reduction		8.4%	6.8%	-		10.4%	11.9%	-
Level 2	.038*(.016)	.023**(.012)	.014(.010)	.011(.01)	.046**(.046)	.028*(.013)	.009(.008)	.003(.006)

Note. ** $p < .01$, Gender was entered as control at each step, Values are Estimate (Standard Error), $N =$ participants, schools

Table 3

Summary of Generalized Multilevel Modeling for Variables Predicting Actual College Attendance of African American High School Students (N=1597 participants, 78 school)

Variable	College Attendance			
	Null	Step 1	Step 2	Step 3
Intercept	.032(.014), 1.38 *	.288(.142), 1.33*	.256(.141), 1.29	.228(.135), 1.26
Gender		-.118(.124)	-.045(.126)	-.118(.124)
Mother's Education		.438 (.062), 1.55**	.398(.063), 1.49**	.373(.063), 1.45**
Engagement		-.039(.064), .96	-.055(.064), .94	-.045(.065), .96
GPA		.637(.071), 1.89**	.587(.072), 1.80**	.582(.072), 1.80**
Belonging		-.037(.063), .96	-.064(.064), .94	-.064(.064), .94
Desire		.444(.069), 1.56**	.206(.085), 1.23*	.208(.085), 1.23*
Likelihood			.412(.085), 1.51**	.405(.085), 1.50**
School: Mother's Education				.417(.110), 1.52**
AA%				-.140(.119)
Variance Components				
Level 1 (Residual)	1.000	1.000	1.000	1.000
Level 2	.839(.217)**	.653(.191)**	.621(.183)**	.419(.146)*

Note. **p < .01, Gender was entered as control at each step, Values are Estimate (Standard Error) Odds Ratio

Table 4
Correlations of Variables

	Gender	Mom's Education	GPA	School Belonging	Engagement	Desire	Likelihood	School SES	% African Amer.	College Attend.
Gender	1	-.052*	.180**	-.105**	.104**	.051*	.113**	-.002	.012	-.067**
Mom's Education		1	.057*	.004	-.019	.139**	.212**	.310**	-.016	-.260**
GPA			1	.182**	.303**	.240**	.334**	.107	.006	-.307**
School Belonging				1	.257**	.165**	.209**	.058	.071**	-.098**
Engagement					1	.107**	.160**	-.046	.037	-.091**
Desire						1	.655**	.098**	-.035	-.288**
Likelihood							1	.182**	.018	-.361**
School SES								1	.064**	-.284**
% African American									1	.032
College Attendance										1

Note. For Gender, 1 equals Female and 0 equals Male.

** correlation is significant at the 0.01 level (2-tailed)

REFERENCES

- Alexander, K.L., McDill, E.L., Fennessey, J., & D'Amico, R.J. (1979). School SES influences-composition or context? *Sociology of Education*, *52*, 222-237.
- Anderman, E. M. (2002). School effects on psychological outcomes during adolescence. *Journal of Educational Psychology*, *94*(4), 795-809. doi:10.1037//0022-0663.94.4.795.
- Appleton, J.J., Christenson, S.L., & Furlong, M.J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct, *Psychology in the Schools*, *45*(5), 369-386. doi:10.1002/pits.20303
- Atanda, R. (1999). Do gatekeeper courses expand education options? National Center for Education Statistics. *Education*, *63*, 44-61.
- Aud, S., Fox, M., & KewalRamani, A. (2010). *Status and Trends in the Education of Racial and Ethnic Groups* (NCES 2010-015). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Baron, R. M. & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Sociology*, *51*(6), 1173-1182. doi:10.1037/0022-3514.51.6.1173.
- Blanchett, W. J. (2006). Disproportionate representation of African American students in Special Education: Acknowledging the role of White privilege and racism. *Educational Researcher*, *35*(6), 24-28. doi:10.3102/0013189X035006024.
- Bohon, S.A., Kirkpatrick-Johnson, M., & Gorman, B.K. (2006). College aspirations and expectations among Latino adolescents in the United States. *Social Problems*, *53*(2), 207-225. doi:10.1525/sp.2006.53.2.207.

- Booker, K.C. (2004). Exploring school belonging and academic achievement in African American adolescents. *Curriculum and Teaching Dialogue*, 6(2), 131-143.
- Bornstein, M. H., & Bradley, R. H. (2003). Socioeconomic status, parenting, and child development: An introduction. In M. H. Bornstein & R. H. Bradley (Eds.), *Socioeconomic status, parenting, and child development* (pp. 1-10). Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.
- Brantlinger, E. (1992). Unmentionable futures: Post school planning for low-income teenagers. *The School Counselor*, 39, 281–291
- Chenoweth, E., & Galliher, R.V. (2004). Factors influencing college aspirations of rural West Virginia high school students. *Journal of Research in Rural Education*, 19(2), 1-14.
- Cunningham, M., Corprew III, C.S., & Becker, J.E. (2009), Associations of future expectations, negative friends, and academic achievement in high-achieving African American adolescents. *Urban Education*, 44(3), 280-296.
doi:10.1177/0042085908318715
- DeNavas-Walt, C., Cleveland, R., & Webster, B.H. Jr. (2003). *Income in the United States: 2002*. U.S. Census Bureau, Current Population Reports, P60-221, U.S. Government Printing Office, Washington, DC.
- DeNavas-Walt, C., Proctor, B.D., & Smith, J.C. (2010). *Income, Poverty, and Health Insurance Coverage in the United States: 2009*. U.S. Census Bureau, Current Population Reports, P60-238, U.S. Government Printing Office, Washington, DC.

- DeNavas-Walt, C., Proctor, B.D., & Smith, J.C. (2011). *Income, Poverty, and Health Insurance Coverage in the United States: 2010*. U.S. Census Bureau, Current Population Reports, P60-239, U.S. Government Printing Office, Washington, DC.
- Eccles, J.S., Vida, M.N., & Barber, B. (2004). The relation of early adolescents' college plans and both academic ability and task-value beliefs to subsequent college enrollment. *The Journal of Early Adolescence, 24*, 63-77.
doi:10.1177/0272431603260919.
- Eng, S., Kanitkar, K., Cleveland, H., Herbert, R., Fischer, J., & Wiersman, J. (2008). School achievement differences among Chinese and Filipino American students: Acculturation and the family. *Educational Psychology, 28*, 535–550.
doi:10.1080/01443410701861308.
- Entwisle D.R., & Astone N.M. (1994). Some practical guidelines for measuring youth's race/ethnicity and socioeconomic status. *Child Development, 65*, 1521–1540.
doi:10.2307/1131278.
- Finn, J.D. (1989). Withdrawing from school. *Review of Educational Research, 59*(2), 117-142.
- Fordham, S., & Ogbu, J. U. (1986). Black students' school success: Coping with the “burden of ‘acting white’”. *The Urban Review, 18*(3), 176-206. doi:10.1007/BF01112192
- Freeman, K. (1997). Increasing African Americans' participation in higher education: African American high school students' perspective. *Journal of Higher Education, 68*(5), 523-550. doi:10.2307/2959945.
- Freeman, K. (1999). The race factor in African Americans' college choice. *Urban Education, 34*, 4-25. doi:10.1177/0042085999341002.

- Freeman, T.M., Anderman, L.H., & Jensen, J.M. (2007). Sense of belonging in college freshmen at the classroom and campus levels. *The Journal of Experimental Education, 75*(3), 203-220. doi:10.3200/JEXE.75.3.203-220.
- Gallagher, R. V., Rotosky, S. S., & Hughes, H. K. (2004). School belonging, self-esteem, and depressive symptoms in adolescents: An examination of sex, sexual attraction status, and urbanicity. *Journal of Youth and Adolescence, 33*, 235–245. doi:10.1023/B:JOYO.0000025322.11510.9d.
- Gorman-Smith, D., Tolan, P.H., Henry, D.B., & Florsheim, P. (2000). Patterns of family functioning and adolescent outcomes among urban African American and Mexican American families. *Journal of Family Psychology, 14*(3), 436-457.
- Goodenow, C. (1993a). Classroom belonging among early adolescent students: Relationships to motivation and achievement. *Journal of Early Adolescence, 13*(1), 21-43. doi:10.1177/0272431693013001002.
- Goodenow, C. (1993b). The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools, 30*, 79–90.
- Goodenow, C., & Grady, K. E. (1993). The relationship of school belonging and friends' values to academic motivation among urban adolescent students. *Journal of Experimental Education, 62*, 60–71.
- Gutman, L.M., & Midgley, C. (2000). The role of protective factors in supporting the academic achievement of poor African American students during the middle school transition. *Journal of Youth and Adolescence, 29*(2), 223-249, doi:10.1023/A:1005108700243

- Hanson, S. L. (1994). Lost talent: Educational aspirations and expectations among U.S. youths. *Sociology of Education*, 67(3), 159-183. doi:org/10.2307/2112789.
- Hauser, R. M., & Anderson, D. K. (1991). Post-high school plans and aspirations of Black and White high school seniors: 1976-86. *Sociology of Education*, 64(4), 263-277. doi:10.2307/2112707.
- Heck, R.H., Thomas, S.L., & Tabata, L.N., (2010). *Multilevel and longitudinal modeling with IBS SPSS* (2nd ed.). New York, NY: Routledge Academic.
- Herr, N.R. (n.d.). *Mediation with dichotomous outcomes*. Retrieved July 2013, from <http://www.nrpsych.com/mediation/logmed.html>.
- Hill, N.E., Castellino, D.R., Lansford, J.E., Nowlin, P., Dodge, K.A., Bates, J.E., & Pettit, G.S. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development*, 75(5), 1491–1509. doi:10.1111/j.1467-8624.2004.00753.x.
- Hurtado, S., & Carter, D.F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education*, 70, 324-345. doi:10.2307/2673270.
- Jimerson, S.R., Campos, E., & Greif, J.L. (2003). Toward an understanding of definitions and measures of school engagement and related terms. *The California School Psychologist*, 8, 7-27.
- Jones, L., Castellanos, J., & Cole, D. (2002). Examining the ethnic minority student experience at predominantly White institutions: A case study. *Journal of Hispanic Higher Education*, 1(1), 19-39. doi:10.1177/1538192702001001003.

- Kao, G., & Tienda, M. (1998). Educational aspirations of minority youth. *American Journal of Education, 106*, 349–84. doi:10.1086/444188.
- Kewal Ramani, A., Gilbertson, L., Fox, M., & Provasnik, S. (2007). *Status and Trends in the education of racial and ethnic minorities* (NCES 2007-039). National Center for Education Statistics, Institute of Education Sciences, U.S.
- King, M., & Murdock, T. (2010). Predictors of self-assessed college attendance among African American high school students. Poster and paper presented at the Society for Research in Adolescence Conference, Philadelphia, PA.
- Kuncel, N.R., Crede, M., & Thomas, L.L. (2005). The validity of self-reported grade point averages, class ranks, and test scores: A meta-analysis and review of the literature, *Review of Educational Research, 75*(1), 63-82. doi:10.3102/00346543075001063.
- MacKinnon, D. P., & Dwyer, J. H. (1993). Estimating mediated effects in prevention studies. *Evaluation Review, 17*, 144-158. doi:10.1177/0193841X9301700202.
- Mau, W., & Bikos, L.H. (2000). Educational and vocational aspirations of minority and female students: A longitudinal study. *Journal of Counseling and Development, 78*, 186-194.
- McDill, E.L., & Coleman, J. (1965). Family and peer influences in college plans of high school students. *Sociology of Education, 38*(2), 112-126. doi:10.2307/2112194.
- McNeely, C. A., Nonnemaker, J., & Blum, R. W. (2002). Promoting school connectedness: Evidence from the National Longitudinal Study of Adolescent Health. *Journal of School Health, 72*, 138–146. doi:10.1111/j.1746-1561.2002.tb06533.x.

- Mello, Z.R. (2009). Racial/ethnic group and socioeconomic status variation in educational and occupational expectations from adolescence to adulthood. *Journal of Applied Developmental Psychology, 30*, 494-504. doi:10.1016/j.appdev.2008.12.029
- Mickelson R. A. (1990). The attitude-achievement paradox among black adolescents. *Sociology of Education, 6*, 44-56. doi:10.2307/2112896.
- Mistry, R.S., Biesanz, J.C., Chien N., Howes, C., & Benner, A.D. (2008). Socioeconomic status, parental investments, and the cognitive and behavioral outcomes of low-income children from immigrant and native households. *Early Child. Research Quarterly, 23*(2), 193–212. doi:10.1016/j.ecresq.2008.01.002.
- Nelson, J.I. (1972). High school context and college plans: The impact of social structure on aspirations. *American Sociological Association, 37*(2), 143-148.
doi:10.2307/2094022.
- Nichols, T.M., Kotchick, B.A., Barry, C.M., & Haskins, D.G. (2010). Understanding the educational aspirations of African American adolescents: Child, family, and community factors. *Journal of Black Psychology, 36*(1), 25-48.
doi:10.1177/0095798409344084.
- Parsons, E. C. (2007). Learning contexts, black cultural ethos, and the science achievement of African American students in an urban middle school. *Journal of Research in Science Teaching, 45*(6), 665-683. doi:10.1002/tea.20240.
- Perna, L. W. (2000). Differences in the decision to attend college among African Americans, Hispanics, and Whites. *The Journal of Higher Education, 71*(2), 117-141.
doi:10.2307/2649245.

- Perna, L. W., & Titus, M. A. (2005). The relationship between parental involvement as social capital and college enrollment: An examination of racial/ethnic group differences. *Journal of Higher Education, 76*(5): 485-518. doi 10.1353/jhe.2005.0036.
- Qian, Z., & Blair, S.L. (1999). Racial/ethnic differences in educational aspirations of high school seniors. *Sociological Perspectives, 42*(4), 605-625. doi:10.2307/1389576.
- Reeve, J., Jang, H., Carrell, D., Jeon, S., & Barch, J. (2004). Enhancing students' engagement by increasing teachers' autonomy support. *Motivation and Emotion, 28*(2), 147-169. doi:10.1023/B:MOEM.0000032312.95499.6f.
- Roderick, M., Coca, V., & Nagaoka, J. (2011). Potholes on the road to college: High school effects in shaping urban students' participation in college application, four-year college enrollment, and college match. *Sociology of Education, 84*(3)178-211. doi:10.1177/0038040711411280.
- Russell, V. J., Ainley, M., & Frydenberg, E. (2005). *Schooling issues digest: Student motivation and engagement*. Retrieved July 2013, from http://www.dest.gov.au/sectors/school_education/publications_resources/schooling_issues_digest/schooling_issues_digest_motivation_engagement.htm
- Sanchez, B., Colon, Y., & Esparza, P. (2005). The role of sense of school belonging and gender in academic adjustment of Latino adolescents. *Journal of Youth and Adolescents, 34*(6), 619-628. doi:10.1007/s10964-005-8950-4.
- Sewell, W.H., & Armer, J.M. (1966). Neighborhood context and college plans. *American Sociological Review, 31*(2), 159-168. doi:10.2307/2090901.
- Sewell, W.H., & Orenstein, A.M. (1965). Community of residence and occupational choice. *American Journal of Sociology, 70*(5), 551-563. doi:10.1086/223931.

- Sirin, S.R., & Rogers-Sirin, L. (2004). Exploring school engagement of middle-class African American adolescence. *Youth Society*, 35(3), 323-340. doi 10.1177/0044118X03255006
- Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. Thousand Oaks, CA: Sage.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological Methodology 1982* (pp. 290-312). San Francisco: Jossey-Bass.
- Stevens, C. J., Puchtell, L. A., Ryu, S., & Mortimer, J. T. (1992). Adolescent work and boys' and girls' orientations to the future. *Sociological Quarterly*, 33(2): 153–169.
- Stipek, D. J., & Weisz, J.R. (1981). Perceived Personal Control and Academic Achievement, *Review of Educational Research*, 51(1), 101-137. doi:10.1111/j.1533-8525.1992.tb00369.x.
- St. John, E., Paulsen, M.B., & Carter, D. F. (2005). Diversity, college costs, and postsecondary opportunity: An examination of the financial nexus between college choice and persistence for African American and Whites. *The Journal of Higher Education*, 76(5), 545-569. doi:10.1353/jhe.2005.0035
- Tate, W. (1997). Critical race theory and education: History, theory and implications. In M.W. Apple & D. Cooper (Eds.), *Review of research in education* (vol.22, pp. 195-247). Washington, DC: American Educational Research Association.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 45(1), 89-125. doi:10.3102/00346543045001089.

- Trusty, J. (2002). African Americans' educational expectations: Longitudinal causal models for women and men. *Journal of Counseling and Development, 80*, 332- 345.
doi:10.1002/j.1556-6678.2002.tb00198.x.
- Udry, J. R. 1998. *National Longitudinal Study of Adolescent Health, Waves I & II, 1994-1996*. Chapel Hill, NC: Carolina Population Center.
- U.S. Census Bureau, Statistical Abstract of the United States: 2012. 152 Education. Table 232. Mean earnings by highest degree earned: 2009. Retrieved July 2013, from <http://www.census.gov/compendia/statab/2012/tables/12s0232.pdf>.
- U.S. Census Bureau. (1973). *Current Population Reports, Characteristics of the Low-Income Population: 1972*, Retrieved July 2013, from <http://www2.census.gov/prod2/popscan/p60-091.pdf>.
- Uwah, C, J., McMahon, H.G., & Furlow, C.F. (2008). School belonging, educational aspirations, and academic self-efficacy among African American male high school students: Implications for school counselors. *Professional School Counseling, 11*(5), 296-305. doi:10.5330/PSC.n.2010-11.296
- Walton, G.M., & Cohen G.L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology, 92*(1), 82-96.
doi:10.1037/0022-3514.92.1.82.
- Wentzel, K.R. (1989). Social relationships and motivation in middle school: The role of parents, teachers, and peers. *Journal of Educational Psychology, 90*(2), 202-209.
doi:10.1037/0022-0663.90.2.202.
- Wilson, A.B. (1959). Residential segregation of social classes and aspirations of high school boys. *American Sociological Review, 24*(8), 36-45. doi:10.2307/2088572.

- Wood, D., Kaplan, R., & McLoyd, V.C. (2007). Gender differences in the educational expectations of urban, low-income African American Youth: The role of parents and the school. *Journal of Youth Adolescence*, 36, 471-427. doi:10.1007/s10964-007-9186-2
- Zarate, M.E., & Gallimore, R. (2005). Gender differences in factors leading to college enrollment: A longitudinal analysis of Latina and Latino students. *Harvard Educational Review*, 75(4), 383-489.
- Zhang, D., & Katsiyannis, A. (2002). Minority representation in special education: A persistent challenge. *Remedial and Special Education*, 21, 180-187.
doi:10.1177/07419325020230030601.

VITA

Makini Lateefah King was born on January 15, 1981, in Kansas City, Missouri. She was educated in private schools in Kansas City until 8th grade and attended high school at an all girls' private, boarding and preparatory academy called Emma Willard School in Troy, New York graduating in 1999. She received her Bachelor of Arts at Emory University in Atlanta, Georgia in 2003 with a Psychology major and Spanish minor.

Ms. King initially sought a Master's degree in School Counseling at the University of Missouri-Kansas City, but eventually made the decision to pursue a Ph.D. in Counseling Psychology given her strong interests in both counseling and research. Over the course of Ms. King's academic career in the doctorate program she presented a symposium and posters at several national conferences, published a book chapter and two peer reviewed journal articles and gained counseling and assessment practicum experience at counseling centers, mental health hospitals and veteran's hospitals. Ms. King spent her internships year at the University of Kansas Counseling and Psychological Services where she continued her training via weekly seminars, individual and group therapy, outreach programming and supervision.

Ms. King will graduate in the summer of 2013 with a Ph.D. in Counseling Psychology and will continue training for one year post internship as a resident fellow at the Kansas City Veterans Administration in Kansas City, Missouri.