

Chapter 1

Introduction

Only about one-third of African American college students in the United States graduates within five years. This compares to a 48% graduation rate for White students (King, 1999). This substantially lower success rate for African American students and other students of color is one reason that the American College Personnel Association has adopted a goal of improving access and educational success for diverse students as a research agenda item for this century (King, 1999).

The problem of poor African American student graduation rates has several consequences. First, the fact that graduation rates are substantially lower for African Americans than for the general population is a significant educational and financial problem for African American students themselves. Most students' ability to achieve their personal life goals rests largely on their ability to succeed in college. Any factors that impede that success exact a great opportunity cost for the individual student. Further, when a student pays for one or more years of college study through loans, but leaves without a degree or marketable skills, the financial cost of that attrition can be enormous.

Second, low African American graduation rates also pose educational and financial consequences for colleges. The ability of colleges to educate all students well is compromised when African American students leave before graduating. This attrition represents an obvious failure to educate the African American students.

This is especially problematic for Predominately White Institutions (PWIs), where the majority of African American students enroll (Bohr, Pascarella, Nora, & Terenzini, 1995). Most PWIs have an interest in increasing racial and ethnic diversity in their institutions to enhance the

quality of education for all students. Low graduation rates for minority students, and African American students in particular, diminish the quality of diversity that can be expected to influence the educational experience for other students.

All institutions suffer financially from high attrition rates. Colleges rely on enrollments to meet their budgets. When large numbers of students are lost, institutions must rely on bringing in new students to replace those that are lost due to attrition. However, it is less expensive to retain students than to recruit new ones (Astin, 1975). Also, students who leave before graduating rarely become contributors to alumni funds, which also serve to support the institution.

Low African American student graduation rates also generate problems for society in general. Soon ethnic minorities will comprise one-third of the U.S. population (King, 1999). This increase in the minority population raises important questions about how America's emerging leaders will be able to function successfully in business and industry. The lower educational success rate for minorities creates a problem for the overall success rate of society. In summary, the consequences of low African American graduation rates in higher education are problematic for the success of African American students themselves, the colleges they attend, PWIs, and the entire nation.

Traditionally, institutions of higher education have tried to minimize attrition by predicting the likelihood of academic success. These predictions are typically based on standardized tests like the Scholastic Aptitude Test (SAT) and high school grade-point averages (Stern & Briggs, 2001). However, these predictors—originally designed to predict grades for the first year of college—have almost no correlation with grades beyond the first year, retention in any year, or graduation (Stern & Briggs, 2001; Tracey & Sedlacek, 1987). In fact, recent studies have demonstrated that traditional indicators do not account for as much as half of the variance

in freshman grades (Stern & Briggs, 2001). For minority students, in particular, the SAT has almost no relation to factors such as year-to-year retention or graduation (Tracey & Sedlacek, 1987).

However, some better predictors of success for African American students have been identified. Scholars have found that some non-cognitive variables correlate particularly well with grades, retention, and graduation for African American students. These non-cognitive variables are: (a) positive self concept, (b) realistic self-appraisal, (c) understanding of and ability to deal with racism, (d) preference of long-range goals over immediate needs; (e) availability of a strong support person, (f) successful leadership experience, (g) demonstrated community service, and (h) non-traditional/culturally related knowledge acquired in a field (Sedlacek & Brooks, 1976; Tracey & Sedlacek, 1984).

Studies that demonstrate the effectiveness of using non-cognitive variables in predicting academic success use the Non-cognitive Questionnaire (NCQ) designed by Tracey and Sedlacek (1984; 1985). These studies can provide helpful information to college administrators who want to know how to enhance the academic success of their African American students by helping institutions identify factors that are important to the students' experience. By identifying these factors early, administrators can employ their best efforts in retaining African American students.

However, administrators at many universities, including many PWIs, do not have a readily available way to measure the non-cognitive variables in their own students because they do not routinely use the NCQ to assess their incoming students. Many administrators, however, do use the Cooperative Institutional Research Program (CIRP) Annual Freshman Survey (AFS) to profile their freshman classes. First administered in 1966, the AFS is now used at over 1,700 institutions and is the most extensive study of students in American higher education

(Cooperative Institutional Research Program [CIRP], n.d.). The instrument includes over 50 questions about demographic data, information about educational and career goals, personal preferences, family influences, and personal background.

Some questions on the AFS may be tied, at least conceptually, to several of the non-cognitive variables. For example, one of the items on the AFS asks students to rate their social and intellectual self-confidence. This question is similar to the positive self-concept variable discussed in the previous literature. Students' attitudes about their intellectual capabilities are closely related to how they may succeed educationally. The present study used AFS variables that were hypothesized to have close relationship to the identified non-cognitive variables to determine if they were also predictive of academic success for African American students.

Purpose of the Study

The purpose of this study was to identify questions from the Annual Freshman Survey (AFS) that may predict academic success, in the form of six-year graduation, for African American students at a predominately White institution, based on previous research involving non-cognitive variables. It was guided by the following null hypotheses, which are grouped according to the non-cognitive variables they represent.

Positive Self-Concept or Confidence

1. There will be no statistically significant difference in the six-year graduation rate of African American students for those who indicate a high social self-confidence, as compared to those who do not.
2. There will be no statistically significant difference in the six-year graduation rate of African American students for those who indicate a high intellectual self-confidence, as compared to those who do not.

Understands and Deals with Racism

3. There will be no statistically significant difference in the six-year graduation rate of African American students for those who believe that racial discrimination is no longer a major problem in America, as compared to those who do not.
4. There will be no statistically significant difference in the six-year graduation rate of African American students for those who believe that promoting racial understanding is an important personal goal, as compared to those who do not.

Preference for Long-Range Goals Over Immediate Needs

5. There will be no statistically significant difference in the six-year graduation rate of African American students for those who believe that they will not drop out of school either permanently or temporarily, as compared to those who do not.
6. There will be no statistically significant difference in the six-year graduation rate of African American students for those who were strongly influenced to attend college by a plan to attend graduate school or attain an advanced degree, as compared to those who do not.

Availability of a Strong Support Person

7. There will be no statistically significant difference in the six-year graduation rate of African American students for those who decided to go to college because a mentor/role model encouraged them to go, as compared to those who did not.

Successful Leadership Experience

8. There will be no statistically significant difference in the six-year graduation rate of African American students for those who indicate a strong belief in their own leadership ability, as compared to those who did not.

Demonstrated Community Service

9. There will be no statistically significant difference in the six-year graduation rate of African American students for those who performed volunteer work frequently throughout the last year as compared to those who did not.

Definitions

The following terms will be used throughout the study and defined as follows:

African American—Students who identified themselves as “African American/Black” on the Annual Freshman Survey and were also categorized as such in the university census files.

Six-year Graduation Rate—Percentage of an entering cohort of African American students who received a bachelor’s degree from the institution within six years.

Non-cognitive—Measure of personal characteristics, particularly in the purpose of demonstrating educational effect, such as motivation or affect. This term is used synonymously with terms used in previous research, such as nonintellectual and non-academic.

Setting

The institution at which this study was conducted is a large, four-year, predominately White, public, Research-extensive institution located in the southeast. This institution has a majority male student population (59%) and students of racial minority, including Asian American, African American, Hispanic American (non-White), American Indian, and International represent 12.4% of the total student population. African American students are less than 5% of the total student population. A recent study of campus climate at this institution found that non-White students experience the university more negatively than their White classmates. Difference in reactions to campus climate is greatest between African American students and White American students. Overall, African American students believe the campus

to be less hospitable than their White classmates. African Americans have also reported greater levels of unpleasant diversity-related experiences (Hutchinson & Hyer, 2000).

Organization of the Study

This study is organized into five chapters. Chapter One introduced the research topic, purpose, research hypotheses, definitions, significance, limitations, and organization. Chapter Two provides a review of the literature relevant to the topic. Chapter Three describes the methodology used in the study, including sampling procedures, a description of the AFS, and the procedures employed to collect and analyze the data. Chapter Four reports the results of the study, and Chapter Five discusses those results and their implications for future research.

Chapter 2

Literature Review

The issue of academic success for African American students has been the subject of much interest in higher education (Arbona & Novy, 1990; Braddock, 1981; Carey, 1976; Clark & Crawford, 1992; Keller, Piotrowski, & Sherry, 1982; Nettles, Thoeny, & Gosman, 1986; Tracey & Sedlacek, 1985). Main concerns have centered on the fact that attrition rates for African Americans are considerably greater than for White students (Clark & Crawford, 1992; Tracey & Sedlacek, 1987). Furthermore, African American students enrolled in predominately White institutions have even greater levels of attrition than those who choose historically Black institutions (Sedlacek & Webster, 1978).

To address this problem, scholars have examined both traditional academic predictors such as high school grade point average (GPA) and standardized tests scores; and non-traditional predictors (e.g. biographical information, attitudes, beliefs, personality, etc.). The relevance of these predictors to academic success for African American students has been widely researched (Arbona & Novy, 1990; Braddock; 1981; Kallingal, 1971; McCornack; 1983; Nettles, et. al, 1986; Sanford, 1982; Tatham & Tatham; 1974; Tracey & Sedlacek, 1984, 1985, 1987). Studies of particular interest to this problem focus on the relationship between cognitive and non-cognitive factors in predicting academic success, generally interpreted as college GPA, retention, or graduation.

The literature reviewed in this chapter presents the overall problem of predicting academic success for all students using traditional and non-traditional measures, problems associated with predicting academic success for African American students at predominately White institutions, varieties of non-cognition, the non-cognitive variables pertinent to the present

study, and literature reporting the significance of these variables to African American students at predominately White institutions.

Challenges of Predicting Academic Success for All Students

Research reporting the overall predictability for academic success has been inconsistent and varied. While several studies report the significance of predictors such as high school record and academic aptitude tests (Larson & Scontrino, 1976; Price & Kim, 1976), other literature refutes these findings citing the importance of variables such as institutional type, student characteristics, and diversity in student populations (Baird, 1984; Kanoy, Wester, Latta, 1989).

In providing a review of existing research for prediction models for all students in 36 studies, Mouw and Khanna (1993) found that the most consistent set of predictors among the studies were the combination of high school performance and standardized tests. They reported that prediction models using personal characteristics were too few and sporadic to characterize, suggesting the importance for additional research in this area. They also pointed out that when reporting significant findings, several studies categorized variables as significant predictors even if the relationship would have little practical value. For this reason, prediction equations have produced varied results on different populations.

Mouw and Khanna (1993) also compared the progression rates toward graduation for students they categorized as predictors and non-predictors. Predictors were students who were admitted to the institution through normal admissions policies, and non-predictors were students who did not meet the admission criteria and were admitted based on a requirement to meet basic conditions before advancing into regular programs. The results indicated that predictions based on the traditional admissions criteria of high school rank and entrance tests were remarkably inaccurate. In fact, 30% of the predictor students left the institution on academic probation; all

others either graduated or remained in good standing. Of the non-predictors, 50% left on academic probation with the remaining half graduating or remaining in good standing. While the success of 70% of the predictor students was correctly predicted, 50% of the non-predictors were not correctly predicted using traditional admission data (Mouw & Khanna, 1993). Based on the results, students in the non-predictor category who would otherwise perform well in college may not have had the opportunity if admissions decisions were based solely on high school rank and entrance tests. This study demonstrates the importance for further review of other literature reporting predictors of academic success and understanding of discrepancies in prediction research.

Traditional Measures of Predicting Academic Success

Many institutions of higher education rely heavily on high school GPAs and standardized test scores to measure a student's potential for success at the collegiate level (Crouse & Trusheim, 1988; Price & Kim, 1976; Stern & Briggs, 2001). Usually, these standards are examined along with other factors, such as essay quality, leadership experience, and involvement in extracurricular activities to determine the composition of the admitted class of students (Crouse & Trusheim, 1988). Most pertinent, however, for most selection processes is the measure of a student's cognitive abilities. Traditionally, a student's cognitive ability has been recognized as a predictor of potential academic success at the collegiate level and most institutions employ these measures for their students (Sedlacek & Pelham, 1976; Sedlacek & Webster, 1978).

Colleges review high school GPA as a way to learn how a student performed prior to applying for college. It is generally expected that the student's ability to do well in high school (represented by high school grades) will have some impact on the ability to perform well

academically at the college level. However, high school GPA, like other admission variables, is rarely used alone in assessment. Most higher education institutions also require the submission of standardized test scores (either the Scholastic Aptitude Test (SAT) or the American College Test (ACT)). Together, a student's high school GPA and standardized tests scores are often used as indices of the student's cognitive abilities.

In a study examining the predictive validity of high school GPA and the verbal and math sections of the SAT, Larson and Scontrino (1976) evaluated the consistency for predicting college performance over an eight-year period using all three variables. The researchers found that multiple regression equations combining all three variables and predictions using only high school GPA both produced consistently high correlations for college GPA after four years. They also reported that although the inclusion of SAT scores was statistically significant for female students, the scores added little to the accuracy of the prediction equation. This finding suggests that while predictive equations using combined GPA and SAT scores are relevant, there are limitations to the predictive abilities of the SAT for some students.

In a similar study, when Price and Kim (1976) researched variables associated with performance of undergraduate business majors, they found that while both ACT and GPA were associated with college performance, college entrance tests proved to explain more of the variation in college performance than high school grades. Although the Larson and Scontrino (1976) and the Price and Kim (1976) studies both evaluated the validity of prediction models using high school grades and college entrance tests, it is apparent that the amount of variation in college performance explained by these factors differs between studies.

It is clear that even within similar categories of prediction, differences may occur. Furthermore, as found in the Larson and Scontrino study, predictive ability for some traditional

measures may differ among subgroups. For this reason, use of these measures for special populations such as minority students has also been studied.

In an early study, Temp (1971) investigated the predictive validity of the SAT for African American and White students at 13 integrated institutions. Using SAT math and verbal scores and freshman year GPA for similar samples of African American and White students within the same class, Temp analyzed both samples based on a regression system that assumes the two groups be regarded as the same. Temp found that regression planes for the two samples could not be considered the same. For 9 of the 52 comparisons, the regressions were found to be significantly different. Based on these results, Temp concluded that it was not practical to use the same prediction system for SAT scores for both student populations (Temp, 1971).

Temp's (1971) study also found that when predictions for African American students are based upon regression equations used for majority White students, their GPA may at times be over-predicted. In 6 of the 13 institutions multiple regressions were non-significant for African Americans. Other studies have also questioned the ability of the SAT to predict accurately African American academic success.

For instance, McCornack (1983) researched the predictive bias in using traditional, cognitive measures of college performance for four ethnic minority groups. In his study, a regression equation was developed using high school GPA and SAT scores of majority freshmen admitted students to predict first-semester GPA. The equation was then used to make predictions about Asian, African, Hispanic, and American Indian students. McCornack found that small but significant over-prediction appeared for every group except American Indians. The study also indicated that the African and Hispanic American groups demonstrated error variances to a slightly larger degree than the other groups.

In a later study by Crouse and Trusheim (1988), the freshman grades of African American students were inaccurately predicted as compared to their White counterparts. In fact, prediction equations based on SAT scores tended to overestimate the freshman grades of African American students.

These researchers have found that when relying on traditional measures, using the same equations to predict academic success for African Americans and Whites is problematic. This may be because African American and White students demonstrate academic strength differently. The fact that the SAT is not a consistently accurate predictor of African American student grades has led several researchers to investigate other, non-cognitive variables that may be better related to African American student grades, retention or graduation.

Non-Traditional Measures of Predicting Academic Success

Several researchers have studied the influence of non-academic variables in efforts to improve predictors of academic success. Overall, results demonstrate that while these measures are helpful to predicting success of several groups, they too are not without limitations. Non-traditional prediction research may include any combination of factors not generally associated with high school grades or academic aptitude tests. A variety of studies researched non-traditional relationships between college performance by acquiring additional information about students' personality, motivations, experiences, and psychological development (Dunham, 1973; Henson, 1976; Wolfe & Johnson, 1995; Nelson, Scott, Bryan 1984; Balkin, 1987).

For example, Dunham (1973) evaluated the relevance of certain non-intellective factors, including measures of achievement motivation, self-concept, family relations, and birth order in a multiple regression analysis to predict first semester college GPA. His study found statistical significance explaining 45% of the variance in GPA for the combination of three achievement

motivation measures (the Thematic Apperception Test, ego achievement, and the Edwards Personal Preference Schedule), high school grades and sex (Dunham, 1973).

In a related study, Henson (1976) also measured the relevance of motivation in predicting academic success for male college students. His study researched the predictive validity of the expectancy theory of motivation. Results of this study demonstrated that variation in ability produced stronger predictions for academic success than did variations in expectancy. Furthermore, Henson reported that self-esteem, internal and external locus of control, and dogmatism all served to moderate the relationship between expectancy and effort (Henson, 1976).

Nelson, et al. (1984) sought to predict second-semester persistence based on pre-college and entrance characteristics and self-reports of early college experiences. The researchers used data from variables on the ACT (indicating participation in activities and occupational choices), demographic characteristics, and social and academic variables related to early college experiences. This study found that the best prediction (94%) occurred when both pre-college and early college experience variables were used. Pre-college variables alone were also highly predictive (87%) of second-year persistence.

Kanoy et al. (1989) used traditional predictors (high school GPA and SAT scores) along with cognitive and psychological variables (cognitive complexity, locus of control, academic self-concept, and effort) to predict GPA after the first year for college women of two groups: those expected to do well academically and those expected to perform poorly. Using multiple regression analyses for both groups, the researchers found that academic self-concept and high school GPA provided the best predictor for women who were expected to do well, predicting over half of the variance in GPA (Kanoy et al., 1989). Internal locus of control (the belief that

individuals have control over their own outcomes), achievement successes, and effort accounted for over 40% of the variance in GPA for students who were expected to perform poorly. Furthermore, the results indicated that no traditional predictors were effective in predicting GPA for students expected to perform poorly (Kanoy et al., 1989). This study illustrates the importance of some psychological variables in predicting academic success, especially for students at risk.

Several researchers have studied the relationship of various non-cognitive factors to academic success for African American students. For example, Pfeifer and Sedlacek (1974) reviewed data from three inventories—the California Psychological Inventory (CPI), the Holland Vocational Preference Inventory (HVPI) and the University Student Census (USC)—to search for non-academic variables that could be identified as correlates of grades for African American students at the University of Maryland at College Park. The CPI and HVPI are personality measures, and the USC is an inventory used to gather general data including information about attitude and activities about the entering freshmen class. The researchers used freshman year GPA to measure academic success.

Results of this study indicated that a number of non-academic variables correlated with GPA for African American freshmen (Pfeifer & Sedlacek, 1974). Three HVPI scales were found to be significant correlates of freshman GPA: Social, Infrequency, and Masculinity (negatively correlated). Significant correlations identified from the CPI scales were: Sense of Well-Being, Responsibility, Socialization, Communality, Achievement via Conformance, Achievement via Independence, and Intellectual Efficiency. In addition, a number of variables from the USC inventory were significantly correlated with freshman GPA. They were: student participation in extracurricular activities such as holding a student government office, being a member of an

honor society, interest in coursework, belief that instructors care about students, and feeling that the university should have a role in improving social conditions in the state.

This study further found other USC variables were able to predict the performance level of students (Pfeifer & Sedlacek, 1974). For instance, students who had higher freshman GPAs expected time management to be the most difficult aspect of adjustment and felt that financial reasons would be the most likely cause for having to leave the university. Students who performed poorly expected that selecting a major or career would be the most difficult aspect of adjustment and believed lack of academic ability or inefficient reading and study skills would be the most likely cause for having to leave the university. Overall, Pfeifer and Sedlacek found that there was some relationship between personality measures and grades for African American students.

In another study, Beasley and Sease (1974) used biographical data to determine whether non-intellective predictors could be used to enhance standard intellective predictors in better predicting the first semester GPA and cumulative GPA for African American university students. Predictor variables used in the study were ACT English, mathematics, social studies, natural science, and composite scores, and biographical data obtained in the SPS section of the ACT (Beasley & Sease, 1974). The biographical data used provided a variety of information, including facts about personal and educational goals, influence on college choices, and accomplishments in leadership, music, writing, and other special talents.

Beasley and Sease (1974) found significant correlations to both first semester GPA and cumulative GPA for 14 of the 26 SPS variables used. Among the variables found to be predictive of academic success were: influence by a teacher or high scholastic expectations in making college decisions, expression of talents such as writing for a campus newspaper or other

extracurricular activity in high school; demonstrated initiative through independent work experience, demonstrated leadership through appointment to a student office or organization in school politics, and the ability to realize self-deficiencies in learning (i.e., improvement of reading, writing, and study skills). Based on their results, Beasley and Sease concluded that using non-intellective factors in equations using standard predictive measures could significantly increase the predictability of student success.

College GPA, persistence, and graduation commonly measure academic success. However, in the following study researchers were interested in learning about how to enhance academic success through determining what factors may be related to unsuccessful academic experiences. In this study, the relationship between nonintellectual correlates and African American student attrition at the University of Maryland at College Park was examined (DiCesare, Sedlacek, & Brooks, 1972). The purpose of the study was to explore ways African American returning students differed from those that did not return using demographic and attitudinal variables. Researchers reviewed the status of returning students and non-returning students and collected data about the participants using the University Student Census (USC) inventory.

On 4 of the 29 USC items, a significant correlation was found (DiCesare, et al., 1972). Returning students were more likely than non-returnees to use the Student Course Guide when selecting courses. They were also more apt to believe that African Americans did not attend the university because of racism, and feel that the university had an obligation to use its influence to improve social conditions in the state. The researchers also found that returning students expected to complete a bachelor's degree along with one or two years of graduate school. In contrast, a greater percentage of non-returnees indicated that they expected to earn a BA or less.

Based on their results, the researchers determined that African Americans who return to the university demonstrated higher levels of self-confidence, have higher expectations, feel more strongly about the university's role in improving social conditions, and see more racism at the university. This study may be particularly helpful for educators to identify students who are lacking in particular dimensions related to collegiate success (Sedlacek, 1989).

Problems With Predicting Academic Success for African American Students at PWIs

While identifying a consistent set of academic success predictors for all students and particularly African American students has been a difficult task, there is evidence that greater difficulty lies in predicting academic success for African American students at predominately White institutions (Braddock, 1981). Many studies have examined reasons for this, citing incongruence in the relationships between African American students and the institutional culture of PWIs (Braddock, 1981; Carey, 1976; Dawkins & Dawkins, 1980; Gottfredson, 1981; Keller et al., 1982). Overall, African American perceptions of the PWI climate is reported as more negative than the perceptions of White students (Keller et al., 1982).

For example, in a study by Dawkins and Dawkins (1979), African American student perceptions, experiences, and values were examined to identify associations with academic performance at a PWI. Results of this study indicate that students who do not feel that White professors are prejudiced personally and in evaluating coursework are predicted to perform better in college than students who feel differently (Dawkins & Dawkins, 1979). The study also found that the relationship between racial contact and academic performance is influenced in part by high school performance. However, when students interact socially in racially congruent environments, positive associations are made with academic success, regardless of pre-college ability level.

This study also examined students' academic performance using values such as reasons for attending college. When evaluating this factor, the results indicate that students with primary goals of improving intellectual abilities were more likely to have higher academic success than students who identified this reason as a secondary factor (Dawkins & Dawkins, 1979). Furthermore, the desire to go to college to become better equipped to solve Black community problems demonstrated a very weak relationship to academic performance.

In a study researching the equality of African American and White students' performance and experiences at a PWI, Nettles et al. (1986) sought to discover whether a difference occurred in the college performance of African American and White students, what were the significant predictors for college GPAs for African American and White students, and how differences in the quality of college experiences for both student populations can be expected to affect college performance. This study provided several important results. Higher college performances resulted for students indicating lower feelings of discrimination (in both groups). Furthermore, while feelings about faculty concerns about students' academic and career plans were significant predictors of academic success for both groups, actual faculty contact was not. This study implies a relationship between student attitudes about the institutional environment and their college success.

Varieties of Non-Cognition Related to the Present Study

Non-cognitive measures of academic success differ from cognitive measures in that they have no correct standardized answer. Instead, non-cognitive measures are personal and based on the individual (Messick, 1979). Messick identifies several varieties of non-cognition. The following types of non-cognition are most relevant to the variables examined in the present

study: attitudes, beliefs, coping, interests, experiential background factors, social sensitivity, and cognitive styles.

Attitudes

Attitudes are the positive or negative evaluations individuals may have about themselves or a social object (Messick, 1979). They cause individuals to have predispositions to behave in certain ways toward that object. Educational attitudes are important because they are often related to the way a student orients him- or herself toward learning, school, and the role of a learner. This may also be demonstrated through academic self-concept or in the way a student may evaluate the strengths and weaknesses in his or her learning processes.

Beliefs

Similar to attitudes, beliefs are defined as expectancies about relationships between the nature of an object and other objects, concepts, or goals (Messick, 1979). An aspect of belief related to education is locus of control, which refers to the expected relationship between individuals and the source of a situation. Locus of control is a widely studied educational dimension of belief, particularly in the investigation of student motivation (Messick, 1979; Sedlacek, 1987). It is used to differentiate between students who feel responsible for their own behavior and students who believe that their circumstance is attributable to an external force. Perspective of locus of control may be particularly relevant for minority students in a predominately White culture or environment.

Coping

Coping, a non-cognitive measure related to locus of control, refers to the strategies an individual employs when adapting to an environment (Messick, 1979). Coping is also the way an individual may deal with threat or stress. The ability to cope or deal with the prevailing system at

a predominately White institution is particularly important for the academic success for African American students (DiCesare et al., 1972).

Interests

Interests are demonstrated through selective attention to particular activities that are undertaken when other alternatives are available (Messick, 1979). They are reflected in patterns of choice and are closely related to preferences. For example, interests are consistent patterns of preference when other options are available. Interests may be determined by a preference of choosing one consistent pattern of behavior over another. In the educational sense, interests may be indicative of a preference for long-term goals over immediate gratification or through choosing to participate in extracurricular activities, such as community service.

Experiential Background Factors

A widely studied type of non-cognitive measure is experiential background factors (Messick, 1979). Experiential background factors encompass a variety of characteristics personal to an individual. Factors included in this category include demographic variables such as age, sex, social status, and ethnic or racial background. Other factors such as educational history of self and family, work experience, special talents and other educationally relevant factors are also included. Researchers may also learn about supportive influences, such as mentors or student interests by investigating experiential background factors.

Social Sensitivity

Social sensitivity refers to the way an individual may demonstrate levels of social development (Messick, 1979). Social development may be evaluated by social competence and is reflected through empathy, interpersonal participation, leadership, persuasiveness, modeling,

and tolerance. Students may have opportunities to demonstrate social sensitivity through successful leadership experiences.

Cognitive Styles

Cognitive styles are represented in “information-processing consistencies” that reflect individual personality trends (Messick, 1979). An individual’s cognitive style is demonstrated through stable attitudes and preferences for understanding, thinking, and problem solving. It is personal to the individual and may be influenced by a cultural or non-traditional learning process.

Eight Non-cognitive Variables Pertinent to the Present Study

The preceding studies are presented to demonstrate how some researchers have used a variety of non-cognitive factors to determine if relationships exist between these factors and academic success for African American students. In reviewing non-cognitive predictor studies for minorities, Sedlacek and Brooks (1976) originally proposed that there were seven non-cognitive variables important to the academic success of minority students. In three later studies, Tracey and Sedlacek (1984, 1985, 1987) demonstrated the validity of the seven variables and the addition of an eighth variable. These eight variables are the focus of the present study.

Positive Self-Concept or Confidence

Positive self-concept or confidence refers to a student’s feeling about him or herself. It is reflected in a “strong self-feeling, strength of character, determination, and independence” (Sedlacek, 1993, p. 34). Students who have positive self-concept make positive statements about their ability to progress through college and feel confident about graduating (Sedlacek, 1993). They also expect to do well in challenging situations, both academically and non-academically related.

Students who lack this characteristic do not have high expectations for themselves and expect to have trouble balancing their personal and academic lives.

Realistic Self-Appraisal

The ability to “recognize and accept any self-deficiencies,” especially academic-related is the second variable identified (Sedlacek, 1993, p. 34). Students who recognize their academic weaknesses, such as lack of reading, writing, or study skills and work consistently at self-development are in a better position to handle the collegiate experience. Those who have this characteristic expect and welcome feedback to improve their academic behavior. In contrast, students who are not able to appraise themselves realistically generally do not indicate an understanding of how they are doing academically and may overreact to feedback without seeing it in a larger context.

Understands and Deals With Racism

Along with other non-cognitive variables relevant for the general population, African American students must also handle cultural biases typical at predominately White institutions (Sedlacek, 1987). This ability is defined through a realistic belief about racism and the effect it has on the educational system. Students who are attributed this quality are neither “submissive to existing wrongs, nor hostile to society” (Sedlacek, 1993, p. 34). Conversely, students who do not understand and deal with racism well may not recognize racism or the role of a traditionally racist system in their lives. They may also demonstrate that they do not understand and deal with racism well by blaming others for their problems (Sedlacek, 1993).

Prefers Long-Range Goals to Short-Term or Immediate Needs

This non-cognitive variable refers to students’ ability to make decisions about future goals and “respond to deferred gratification” (Sedlacek, 1993, p. 34). Students who are

characterized with this variable set goals and are able to proceed without reinforcement. They demonstrate “planning in academic and non-academic areas” (Sedlacek, 1993, p. 35). Students who lack this quality tend to rely on others for reinforcement and live in the present. They do not show evidence of planning and if they have goals, they are often unclear and unrealistic.

Availability of a Strong Support Person

Previous studies demonstrate that students who are influenced by a support person are more likely to succeed academically (Beasley & Sease, 1974). This person is available to the student as someone to go to in the event of a crisis situation (Sedlacek, 1993). Students may indicate the availability of a strong support person through acknowledgement of “received help, support, and encouragement,” for academic or non-academic related matters (Sedlacek, 1993, p. 35). Those students who do not have availability of a strong support person often do not communicate their problems or ask for help. Instead, they try to handle difficult situations by themselves.

Successful Leadership Experience

Successful leadership experience may include leadership opportunities relevant to a student’s cultural background, church and community activities, in addition to any experiences related to traditional curricular programs (Sedlacek, 1993). Students who demonstrate successful leadership experience show evidence of influencing others in academic or non-academic areas. They comfortably provide direction to others and are able to take the lead in situations when necessary. Students who do not demonstrate this characteristic are non-assertive and do not take the initiative in situations.

Demonstrated Community Service

This non-cognitive variable identifies students who are involved in their cultural community (Sedlacek, 1993). Sedlacek (1989) argues that African Americans who are active in a community have access to a viable support system, important to their survival in a predominately White environment. Students who show evidence of community service have specific and long-term relationships in a community that is cultural, racial, gender-based, or geographical (Sedlacek, 1993). Conversely, students who do not appear to have involvement in a community have limited activities and engage in more solitary activities rather than group activities

Nontraditional Knowledge or Knowledge Acquired in a Field

Traditional ways of acquiring knowledge may not be as relevant for African American students as for other populations since they have been traditionally excluded from the formal educational system (Sedlacek, 1987). Therefore, creative and culturally related ways of learning and demonstrating knowledge may be particularly important for African American student success. Successful African American students typically demonstrate this characteristic through knowledge about a field that they have not been formally introduced to in school. They also may acquire information through innovative ways (Sedlacek, 1993). Students who lack this ability have only knowledge through a traditional approach to learning.

Studies Involving Non-Cognitive Variables and African American Student Success

There are four major studies examining the relationship between the eight identified non-cognitive variables and African American student success at predominately White institutions. The first study was designed to assess the reliability, construct validity, and predictive validity of the Non-Cognitive Questionnaire (NCQ) for both African American and White students (Tracey & Sedlacek, 1984). The NCQ is the instrument developed to measure the proposed eight non-

cognitive indicators of student success. The researchers examined how well the non-cognitive variables predicted success when used with and against SAT scores. Academic success in this study was measured by GPA and enrollment status after three semesters.

Tracey and Sedlacek (1984) found three important results. First, the study demonstrated the reliability and construct validity of the NCQ. Second, the NCQ was also found to have predictive validity for GPAs in both African American and White student samples when used alone and in conjunction with SAT scores. Finally, the NCQ demonstrated that the variables were strong predictors of persistence (continued enrollment) for only the African American students. The SAT did not predict persistence for either racial group. This study is important because it further establishes the relevance of non-cognitive variables to academic success. More importantly, for African American students, this study demonstrates the significance of these non-cognitive measures to African American student retention.

In a subsequent study, Tracey and Sedlacek (1985) examined the ability of SAT scores and NCQ scores to predict academic success at various points over a four-year period. The longitudinal design of this study enabled further examination of the predictive validity of the non-cognitive variables. Cumulative GPA and persistence determined academic success in this study, at intervals over eight semesters. Generally, Tracey and Sedlacek found that used together, the NCQ and the SAT provided relatively accurate predictions for GPA over the four-year period. The NCQ, in particular, was also found to be an equal or better predictor of student grades than SAT scores alone. However, the researchers caution that SAT scores may be more restricted due to admission factors. Specifically for African Americans and Whites, variables related to predicting grades at all points during the four-year period were positive self-concept and realistic self-appraisal. Furthermore, items identifying preference for long-term goals were

predictive of first and third semester grades, but not in later semesters. Conversely, academic familiarity was predictive of later grades in the sixth and eighth semester for White students only.

The second part of this study examined the predictive validity of persistence over the four-year period (Tracey & Sedlacek, 1985). For persistence, the researchers found that use of SAT and NCQ scores provided poor predictors for White students, but good predictors for African Americans. In particular, variables significant for predicting persistence for African Americans over all time periods included: academic self-confidence, realistic self-appraisal, and academic familiarity. Support for college plans and a preference for long-term goals were particularly important for African American persistence after three semesters, but not beyond this time period. Finally, demonstrated community service, and understanding racism were significant predictors of persistence in the eighth semester. There was little evidence of a relationship between SAT scores and persistence for both African American and White students.

Related to the interest in longitudinal predictions of academic success is the relationship between non-cognitive variables to graduation for African American students. In the following study, Tracey and Sedlacek (1987) were interested in examining the predictive ability of the non-cognitive variables for college graduation after five and six years for African American and White students. This study produced three important results. First, the non-cognitive variables provided a higher prediction of college graduation for African American students than for White students. Second, SAT scores did not yield significant prediction of graduation for African American or White students. Finally, variables most relevant to predicting graduation for African Americans were: self-assessed academic motivations, perseverance, support for academic plans, community service.

Following this research, Arbona and Novy (1989) sought to examine the factor structure of the NCQ with African American, Mexican American, and White students at a PWI. Their study found five factors that provided support for five of the subscales identified in previous research using the NCQ. However, in efforts to extend the research using the NCQ, Arbona and Novy (1990) studied whether and to what extent African American, Mexican American, and White student college success could be predicted at a different institutional type using traditional academic variables and the NCQ. Results of this study proved inconsistent with previous findings using the NCQ. Arbona and Novy (1990) found that at a predominantly White southern institution the NCQ only significantly predicted persistence with White students and not for the African American or Mexican American groups. Discrepancies between this study and previous studies using the NCQ may be related to the difference in the samples examined and the institutions involved. Arbona and Novy (1990) concluded that the college experience and factors associated with academic performance in college may be related to differences across institution types.

The scholarly literature summarized here demonstrates that academic ability (evidenced through traditional pre-college measures) is not as strongly related to graduation as some non-cognitive dimensions at some institutions. Furthermore, especially at PWIs, the literature demonstrates that different measures, in certain circumstances, may predict academic success for African American students as compared to White students. Furthermore, the inconsistency and disagreement among the literature about predicting academic success for African American students suggests that additional research be conducted, using non-traditional measures, and accounting for institutional culture.

While there are no consistent identifiers that serve as good predictors for African American students academic success, the NCQ appears to have validity in predicting academic success for African Americans at some PWIs. However, most institutions do not use the NCQ. Furthermore, despite an extensive search, the researcher found no studies that tied the concept of non-cognitive variables to more commonly and universally used instruments. This study is designed to fill that gap.

Chapter 3

Method

The purpose of this study was to identify questions from the Annual Freshman Survey (AFS) that may predict academic success, in the form of six-year graduation, for African American students at a predominately White institution, based on previous research involving non-cognitive variables. It was guided by the following null hypotheses, each identified according to the non-cognitive variable it represents:

Positive Self-Concept or Confidence

1. There will be no statistically significant difference in the six-year graduation rate of African American students for those who indicate a high social self-confidence, as compared to those who do not.
2. There will be no statistically significant difference in the six-year graduation rate of African American students for those who indicate a high intellectual self-confidence, as compared to those who do not.

Understands and Deals with Racism

3. There will be no statistically significant difference in the six-year graduation rate of African American students for those who believe that racial discrimination is no longer a major problem in America, as compared to those who do not.
4. There will be no statistically significant difference in the six-year graduation rate of African American students for those who believe that promoting racial understanding is an important personal goal, as compared to those who do not.

Preference for Long-Range Goals Over Immediate Needs

5. There will be no statistically significant difference in the six-year graduation rate of African American students for those who believe that they will not drop out of school either permanently or temporarily, as compared to those who do not.
6. There will be no statistically significant difference in the six-year graduation rate of African American students for those who were strongly influenced to attend college by a plan to attend graduate school or attain an advanced degree, as compared to those who do not.

Availability of a Strong Support Person

7. There will be no statistically significant difference in the six-year graduation rate of African American students for those who decided to go to college because a mentor/role model encouraged them to go, as compared to those who did not.

Successful Leadership Experience

8. There will be no statistically significant difference in the six-year graduation rate of African American students for those who indicate a strong belief in their own leadership ability, as compared to those who did not.

Demonstrated Community Service

9. There will be no statistically significant difference in the six-year graduation rate of African American students for those who performed volunteer work frequently throughout the last year as compared to those who did not.

Each of these hypotheses represents a non-cognitive variable that could predict academic success for African American students. Based on the existing literature, the variables most likely to predict graduation for African American students are positive academic self-concept,

preference for long-term goals over immediate needs, availability of a strong support person, and demonstrated community service. Therefore, the researcher anticipated that statistically significant findings in the positive direction would be most likely for hypotheses 2, 5, 6, 7, and 9.

Sample

The sample for this study included 249 African American students entering their freshman year at a large, predominately White, public, Research-extensive institution located in the southeast. The students were part of the classes entering in 1992, 1993, and 1994. The total enrollment for each class was 3,866, 4,280, and 4,305 respectively.

Instrument

This study used existing data from the Annual Freshmen Survey (AFS) designed by the Cooperative Institutional Research Program (Sax, Astin, Korn, & Mahoney, 1998). (See Appendices A, B, and C.) The instrument was administered during the students' summer orientation, prior to matriculation.

The questions on the AFS are used to elicit data about entering students' demographic characteristics, pre-college behavior, values, and attitudes. The AFS was first administered in 1966 and is now used at over 1,700 institutions of higher education. To date, the AFS is the most extensive study of students in American higher education (CIRP, n.d.). Three versions of the AFS were used for this study (1992, 1993, and 1994). The surveys included 38, 39, and 39 questions, respectively.

For purposes of this study, questions were used that reasonably related to the non-cognitive variables identified by the previous research to predict academic success for African American students. Since not all of the eight variables could be connected to items on the survey, only six of the non-cognitive variables were studied. These were (a) positive self-concept or

confidence, (b) understands and deals with racism, (c) prefers long-term goals to immediate needs, (d) availability to a strong support person, (e) successful leadership experience, and (f) demonstrated community service. A total of nine questions were used for analysis.

The first non-cognitive variable is positive self-concept or confidence. Students who are self-confident are optimistic about new challenges and expect to do well both academically and non-academically (Sedlacek, 1993). For this variable, the researcher examined responses from two items on the survey. Both items use the following instruction: “Rate yourself on each of the following traits as compared with the average person your age. We want the most accurate estimate of how you see yourself.” The AFS then lists several traits including “Self-confidence (intellectual)” and “Self-confidence (social).” Students are given five options to indicate their response as compared to the average person their age. They are: “Highest 10%,” “Above Average,” “Average,” “Below Average,” and “Lowest 10%.” These items are found in #25 on the 1992 survey, #26 on the 1993 survey, and #25 on the 1994 survey.

The researcher reasoned that questions eliciting data about self-confidence could be logically connected to the non-cognitive variable positive self-concept or confidence. For both questions, the researcher defined positive self-concept or confidence to be indicated by responses in which students rated themselves in the highest 10% in comparison to the average person.

The second non-cognitive variable identified by the previous research is realistic self-appraisal. This variable measures a student’s ability to recognize any self-deficiencies and to work hard at self-development (Sedlacek, 1993). This variable was not used in the present study because there was no question on the AFS that related to this variable.

The third non-cognitive variable concerns a student's ability to understand and deal with racism. Students with this characteristic are able realistically to understand and handle a racist system (Sedlacek, 1989). Two AFS items were examined for this variable.

The first item investigated the extent to which respondents agreed with the statement: "Racial discrimination is no longer a major problem in America." Students were given four response options ranging from "Agree Strongly" to "Disagree Strongly." This item appears as #31 on the 1992 survey, #32 on the 1993 survey, and #31 on the 1994 survey.

This AFS item was selected as one that could reasonably be associated with a student's ability to understand the reality of the existence of racism in America. Students who responded "strongly disagree" or "disagree" to this statement were defined by the researcher as having the ability to understand and deal with racism.

The second AFS item used to measure students' ability to understand and deal with racism asks what level of personal importance students place on "helping to promote racial understanding." For this item, students were also given four options to choose from: "Essential," "Very Important," "Somewhat Important," and "Not Important." This item appears as # 36 on the 1992 survey, #37 on the 1993 survey, and #37 on the 1994 survey.

Students who responded that promoting racial understanding was either essential or very important were assumed to have an interest in racism and its effects on the population. The researcher defined these responses as indicating ability to understand and deal with racism.

The previous research identifies students' preference for long-term goals over immediate needs as the fourth non-cognitive variable predicting academic success. Students who demonstrate characteristics for this variable show evidence of setting goals and are future-oriented (Sedlacek, 1993). For this variable, two items on the AFS survey were used. The first

item was derived from two questions concerning students' beliefs about the possibility of their dropping out of school. The first question for this item reads: "What is your best guess as to the chances that you will: drop out of this college temporarily (exclude transferring)." The second question asks students "what is your best guess as to the chances that you will: drop out permanently (exclude transferring)." Students were given the four response choices: "Very Good Chance," "Some Chance," "Very Little Chance," and "No Chance." This item is #37 on the 1992 survey, # 38 on the 1993 survey, and #38 on the 1994 survey.

The researcher reasoned that a student's perception concerning completion of the degree program without interruption is an important measure of the preference of long-term goals over immediate needs. These two survey items were considered together. The researcher defined students who believed there was no chance of dropping out (either temporarily or permanently) as preferring long-term goals to immediate needs.

The second item on the survey used to measure preference for long-term goals over immediate needs asks students to indicate the level of importance that a number of factors had on their decision to go to college. The statement reads: "In deciding to go to college, how important to you was each of the following reasons..." Among the answer choices available was "to prepare myself for graduate or professional school." Three response choices were given for this statement: "Very Important," "Somewhat Important," and "Not Important." This question is identified as # 29 on the 1992 survey, #33 on the 1993 survey, and # 29 on the 1994 survey.

Since graduate or professional school is a long-term goal, the researcher reasoned that the interest to further education post-baccalaureate is another way to indicate preference of long term-goals to immediate needs. Therefore, students who responded that preparation for graduate

or professional school was very important to their decision to go to college were defined as having preference for long-term goals to immediate needs.

The fifth non-cognitive variable predicting academic success for African American students is availability of a strong support person. Students' chances for success are increased when they know there is someone to turn to in the event of a crisis (Sedlacek, 1989). For this variable, the present study refers to an item on the AFS that asks about the student's reliance on a mentor or role model. Specifically, the question reads: "In deciding to go to college, how important to you was each of the following reasons:" Following the statement, a number of reasons were listed, including "A mentor/role model encouraged me to go." Students answered from three response options: "Very important," "Somewhat Important," and "Not Important." This question is identified as #29 on the 1992 survey, #33 on the 1993 survey, and #29 on the 1994 survey.

Since a mentor or role model is often a support person for students, the researcher reasoned that the influence from a mentor/role model in a decision as important as going to college indicated that a support person was available to the student. Therefore, students who responded that it was either very important or somewhat important were considered to have the availability of a strong support person.

Successful leadership experience is the sixth non-cognitive variable predicting academic success for African American students. Students who demonstrate characteristics of this variable are comfortable in leadership positions and are comfortable being assertive when needed (Sedlacek, 1993). While there is no item on the AFS that asks students to record the level of their leadership experience, there is a question for which students rate their leadership ability. For this item, the directions read: "Rate yourself on each of the following traits as compared with the

average person your age. We want the most accurate estimate of how you see yourself.” Students are given the following five response options: “Highest 10%,” “Above Average,” “Average,” “Below Average,” and “Lowest 10%.” This question appears as # 25 on the 1992 survey, #26 on the 1993 survey, and #25 of the 1994 survey.

For purposes of this study, successful leadership experience was determined by how students rated themselves in leadership ability. The researcher reasoned that students who felt confident in their leadership abilities were most likely to have had successful leadership experiences. Students who rated themselves in the highest 10% group were defined as having successful leadership experiences.

The seventh non-cognitive variable is demonstrated community service. African American students who are involved in their community are generally in a better position to have positive academic experiences in college, especially a predominately White environment. This variable is particularly important because it provides evidence that the student is accepting of his or her culture, thus able to demonstrate strong self-concept (Sedlacek, 1989). The item used to measure this variable reads: “For the activities below, indicate which ones you did during the past year.” One of the activities listed is “performed volunteer work.” The students are provided three response options: “Frequently,” “Occasionally,” or “Not at all.” This item appears as #24 on the 1992 survey, #25 on the 1993 survey, and #24 on the 1994 survey.

Since community service is generally synonymous with performing volunteer work, the AFS question is a reasonable indicator for determining students’ community service. Students who responded that in the past year they had performed volunteer work frequently were identified as having a record of demonstrated community service. While performing volunteer work may indicate student involvement with a community that is cultural, racial, gender-based,

or geographical, this variable is not necessarily limited to service with a community specific to African Americans.

The final non-cognitive variable concerns the amount of knowledge a student acquires in a field culturally significant to the student. This variable identifies culturally or nontraditionally related ways of obtaining information that is specific to African American students' understanding of themselves and their culture (Sedlacek, 1989). This variable was not used in the present study because there was no question on the AFS that related to this variable.

Reliability

Reliability and validity are important in determining the credibility of an instrument. Reliability demonstrates how consistent an instrument is over repetitive use and on different populations (Gall, Borg, & Gall, 1996). The AFS has been administered every year since 1966 at over 700 institutions of higher education in the country. The best source of reliability evidence for the AFS is demonstrated in a very early study (Boruch & Creager, 1972).

Examples of test-retest reliability evidence for the AFS are shown in Table 1. This study reports reliability for the first four student cohorts (1966, 1967, 1968, and 1969) who completed the AFS. Only two of the AFS items used in the present study were in use at the time that this reliability analysis was done. Those items, Dropping Out Temporarily and Dropping Out Permanently, have test-retest reliability coefficients of .69 and .58, respectively. The additional seven items used in the present study were not included in the test-retest reliability for the early AFS. It is also important to note that the 1972 study reports reliability for the AFS using a mostly White student cohort (97%). No later studies have analyzed reliability evidence for any of the other items used in the present study for White or non-White student populations (L. Sax, personal communication, May 1, 2001).

Table 1

Test-Retest Reliability Coefficients for Reported Chances of Future Events

Future Event ^a	X ₁	S.D. ₁	X ₂	S.D. ₂	r
Getting married while in college	2.26	.99	2.27	.97	.88
Marrying within a year after college	2.84	1.00	2.84	.98	.82
Obtaining average grade of A- or higher	2.12	.85	2.14	.87	.77
Changing major field	2.84	.93	2.77	.95	.81
Changing career choice	2.82	.99	2.74	.97	.80
Failing one or more courses	2.31	.93	2.26	.89	.76
Graduating with honors	2.29	.88	2.23	.85	.73
Being elected to a student office	1.91	.81	1.98	.79	.73
Joining a social fraternity or sorority	2.39	1.17	2.34	1.11	.86
Authoring a published article	2.10	.94	2.04	.90	.76
Being drafted while in college	1.41	.75	1.48	.75	.80
Being elected to an honor society	2.17	.92	2.16	.89	.77
Protesting over U.S. military policy	2.70	1.15	2.63	1.10	.88
Protesting over college administrative policy	2.59	1.01	2.54	.96	.84
Protesting over racial/ethnic policy	2.72	1.07	2.61	1.04	.83
Dropping out temporarily	2.05	.86	1.95	.82	.69
Enlisting in armed services before graduation	1.18	.51	1.27	.61	.62
Being more successful than average	3.04	.61	3.07	.60	.59
Dropping out permanently	1.40	.69	1.45	.69	.58
Transferring to another college	2.67	1.00	2.62	.99	.82

^a Alternative responses and scoring key: Very good chance = 4; some chance = 3; very little chance = 2; no chance = 1.

Note. From Measurement Error In Social and Educational Survey Research, by R.F. Boruch, and J.A. Creager, 1972, ACE Research Reports, 7 (2). Copyright 1972 by the Office of Research, American Council on Education.

Shaded area = Items relevant to the present study.

Validity

Validity evaluates whether the instrument produces results that are useful and appropriate (Gall et al., 1996). The AFS is regularly reviewed by an advisory committee to ensure that the items are relevant to the students being surveyed (Sax et. al., 1988).

Data Analysis Procedures

To preserve confidentiality, the Director of Academic Assessment at the institution where the study was conducted provided an un-redacted data set of all African American responses for the 1992, 1993, and 1994 AFS to the Director of Planning and Assessment for Student Affairs. The Director of Planning and Assessment then combined the data with information from student longitudinal files to create a variable indicating whether the individual students graduated within six years. Student identification numbers and other personally identifying information were redacted before the data were provided to the researcher. Next, the researcher created a single data set by renaming and combining the questions of interest from the selected AFS surveys.

A number of data manipulations were necessary before the self-confidence variables could be analyzed. For the Social Self-Confidence question, the responses were recoded as follows: “Highest 10%” = high self-confidence; all other responses = lower self-confidence. The Intellectual Self-Confidence question was recoded similarly.

The racial discrimination variable also required manipulation. For the Racial Discrimination question, the responses were recoded as follows: “Strongly Disagree” or “Disagree” = able to understand and deal with racism; all other responses = not able to understand and deal with racism. In the case of the second question, Promoting Racial Understanding, the responses were recoded as follows: “Essential” or “Very Important” = able to

understand and deal with racism; all other responses = not able to understand and deal with racism.

The variable indicating preference of long-term goals over immediate needs was also manipulated before analysis. For the question on Drop Out Possibility, the responses were recoded as follows: “No Chance” = preference for long-term goals; all other responses = no preference for long-term goals. For the Interest in Further Education question, the responses were recoded as follows: “Very Important” = preference for long-term goals; all other responses = no preference for long-term goals.

Data manipulations were again necessary before analysis of the support person variable. Responses to the question on Mentor’s Importance were recoded as follows: “Very Important” or “Somewhat Important” = availability of a strong support person; all other responses = no availability of a strong support person.

The variable successful leadership experience was recoded as well. For the question Leadership Ability, data were recoded as follows: “Highest 10%” = successful leadership experience; all other responses = no successful leadership experience.

The final variable included in the present study is community service. Again, this variable required data manipulation before analysis. For the question Performed Volunteer Work, responses were recoded as follows: “Frequently” = demonstrated community service; all other responses = no demonstrated community service.

Once data had been recoded, analysis of the null hypotheses could begin. The researcher tested each null-hypothesis using a two-by-two chi square test of independence. An alpha level of .05 was used throughout. Since all comparisons were pair wise, no follow-up analyses were required.

Chapter 4

Results

Results of the data analysis for this study are summarized in the following chapter. First, the purpose of the study is reiterated. Next, a section describing the sample is presented. Third, descriptive statistics reporting responses for each variable on the Annual Freshmen Survey (AFS) and statistics reporting graduation data for each cohort are displayed. Finally, the results are presented for each of the null hypotheses, comparing six-year graduation status based on values for each variable using chi-square tests of independence.

The purpose of this study was to identify questions from the AFS that may predict academic success, in the form of six-year graduation, for African American students at a predominately White institution. Previous research has reported the relevance of non-cognitive variables in predicting college grades, persistence, and graduation. This study extends that literature by focusing on variables from the AFS that may be used as non-cognitive predictors for six-year graduation.

Sample Description

The sample used in the present study was comprised of 249 African American students enrolled in the freshmen cohorts of 1992, 1993, and 1994. The sample was derived through several steps. The researcher first obtained a total of 11,342 AFS responses. Of those respondents, 432 (3.8%) self-identified as African American. Social security numbers were needed to determine which students graduated in the six-year period. Since students self-report their social security numbers on the AFS, problems may occur when students either entered the social security numbers incorrectly or did not enter them at all. Therefore, some data were lost when social security numbers did not match university censuses data, or when social security

numbers were not available for the surveys. Two hundred eighty-three of the self-identified African American students who completed the AFS provided social security numbers. When matched with the university census files, the resulting data set had 249 useable responses. These students became the subjects for the present study.

Descriptive Statistics

Frequency distributions were created for each of the relevant AFS variables. Tables 2-10 display frequency statistics for the responses for each of the variables considered in this study. They appear in the order of the null hypotheses. The total number of responses for each variable differs slightly due to missing data. A slight majority of the respondents (51%) graduated within six years of matriculation. Table 11 displays the four-, five-, and six-year graduation data for each cohort and the total sample. For comparison purposes, Table 12 shows the four-, five-, and six- year graduation rate for all African American students and all White students in the same cohorts at the institution studied.

Tests of Null Hypotheses

The first hypothesis states: There will be no statistically significant difference in the six-year graduation rate of African American students for those who indicate a high social self-confidence, as compared to those who do not. A chi-square test of independence was calculated comparing the six-year graduation rate for students with high social self-confidence and those with less social self-confidence. No significant relationship was found ($\chi^2(1) = .653, p > .05$). Social self-confidence and six-year graduation appear to be independent events. For this variable, the null hypothesis was not rejected. (See Table 12.)

The second hypothesis states: There will be no statistically significant difference in the six-year graduation rate of African American students for those who indicate a high intellectual

Table 2

Frequency and Percentage of Responses for Social Self-Confidence by All Respondents

AFS Item	Item Response Options				
	Highest 10%	Above Average	Average	Below Average	Lowest 10%
Rate yourself on each of the following traits as compared with the average person your age. We want the most accurate assessment of how you see yourself....					
Self-Confidence (social)	46 (18.5%)	103 (41.4%)	79 (31.7%)	18 (7.2%)	1 (0.4%)

Note. Shaded area = Coded as high social self-confidence.

Table 3

Frequency and Percentage of Responses for Intellectual Self-Confidence by All Respondents

AFS Item	Item Response Options				
	Highest 10%	Above Average	Average	Below Average	Lowest 10%
Rate yourself on each of the following traits as compared with the average person your age. We want the most accurate assessment of how you see yourself....					
Self-Confidence (intellectual)	53 (21.3%)	128 (51.4%)	61 (24.5%)	4 (1.6%)	1 (0.4%)

Note. Shaded areas = Coded as high intellectual self-confidence.

Table 4

Frequency and Percentage of Responses for Agreement that Racial Discrimination is No Longer a Problem by all Respondents

AFS Item	Item Response Options			
	Agree Strongly	Agree Somewhat	Disagree Somewhat	Disagree Strongly
Racial discrimination is no longer a problem in America.	1 (0.4%)	4 (1.6%)	42 (16.9%)	176 (70.7%)

Note. Shaded areas = Coded as able to understand and deal with racism.

Table 5

Frequency and Percentage of Responses for Importance of Helping to Promote Racial

Understanding by All Respondents

AFS Item	Item Response Options			
	Essential	Very Important	Somewhat Important	Not Important
Please indicate the importance to you personally of each of the following:				
Helping to promote racial understanding	92 (36.9%)	80 (32.2%)	27 (10.8%)	5 (2.0%)

Note. Shaded areas = Coded as able to understand and deal with racism.

Table 6

Frequency and Percentage of Responses for Likelihood of Dropping Out Temporarily orPermanently by All Respondents

AFS Item	Item Response Options			
	Very Good Chance	Some Chance	Very Little Chance	No Chance
What is your best guess as to the chances that you will:				
Drop out of this college temporarily (excluding transferring)?	2 (0.8%)	7 (2.8%)	56 (22.5%)	136 (54.6%)
Drop out of this college permanently (excluding transferring)?	2 (0.8%)	3 (1.2%)	31 (12.4%)	164 (65.9%)

Note. Shaded area = Coded as preference for long-term goals when a participant gave this response for both items.

Table 7

Frequency and Percentage of Responses for Deciding to Go to College to Prepare for Graduate or Professional School by All Respondents

AFS Item	Item Response Options		
	Very Important	Somewhat Important	Not Important
In deciding to go to college, how important to you was each of the following reasons?			
To prepare myself for graduate or professional school.	142 (57.0%)	62 (24.9%)	24 (9.6%)

Note. Shaded area = Coded as preference for long-term goals.

Table 8

Frequency and Percentage of Responses for Deciding to Go to College Because A Mentor/Role

Model Encouraged Me To Go, by All Respondents

AFS Item	Item Response Options		
	Very Important	Somewhat Important	Not Important
In deciding to go to college, how important to you was each of the following reasons?			
A mentor/role model encouraged me to go.	41 (16.5%)	90 (36.1%)	95 (38.2%)

Note. Shaded areas = Coded as availability of a strong support person.

Table 9

Frequency and Percentage of Responses for Leadership Ability by All Respondents

AFS Item	Item Response Options				
	Highest 10%	Above Average	Average	Below Average	Lowest 10%
Rate Yourself on each of the following traits as compared with the average person your age. We want the most accurate assessment of how you see yourself....					
Leadership Ability	55 (22.1%)	104 (41.8%)	74 (29.7%)	14 (5.6%)	0 (0.0%)

Note: Shaded area = Coded as successful leadership experience.

Table 10

Frequency and Percentage of Responses for Volunteer Work by All Respondents

AFS Item	Item Response Options		
	Frequently	Occasionally	Not at all
For the activities below, indicate which ones you did during the <u>past year</u> .			
Performed volunteer work	41 (16.5%)	135 (54.2%)	68 (27.3%)

Note. Shaded area = Coded as demonstrated community service.

Table 11

Frequency, Cumulative Frequency, Percentage, and Cumulative Percentage of Students Who Graduated After 4, 5, and 6 Years for Each Cohort and the Total Sample

Cohort	Data Type	Years to Graduation		
		4 Years	5 Years	6 Years
1992	n	19	14	4
	cum n	19	33	37
	%	22.9%	16.9%	4.8%
	cum %	22.9%	39.8%	44.6%
1993	n	19	20	6
	cum n	19	39	45
	%	20.9%	22.0%	6.6%
	cum %	20.9%	42.9%	49.5%
1994	n	21	18	6
	cum n	21	39	45
	%	28.0%	24.0%	8.0%
	cum %	28.0%	52.0%	60.0%
Total	n	59	52	16
	cum n	59	111	127
	%	23.7%	20.9%	6.4%
	cum %	23.7%	44.6%	51.0%

Table 12

Percentage of All African American and White Students at the Institution Who Graduated After
4, 5, and 6 Years for Each Cohort

Cohort Race	Years to Graduation		
	4 Years	5 Years	6 Years
1992			
African Americans	18.1%	40.9%	45.2%
Whites	43.4%	69.2%	74.1%
1993			
African Americans	20.7%	43.3%	49.0%
Whites	42.3%	68.9%	73.2%
1994			
African Americans	28.7%	53.1%	59.8%
Whites	41.6%	68.4%	72.7%

Note. Source: Office of Institutional Research and Planning Analysis.

Table 13

Chi-Square Results for Six-Year Graduation Rate by Social Self-Confidence Variable

Non-Cognitive Variable	Graduated Within 6 Years	Not Graduated Within 6 Years
	Number (Percent)	Number (Percent)
Socially Self-Confident	22 (47.8%)	24 (52.2%)
Less Socially Self-Confident	104 (51.7%)	97 (48.3%)
Chi Square	0.230	
<u>df</u>	1	
<u>p</u>	0.632	

self-confidence, as compared to those who do not. A chi-square test of independence was calculated comparing the six-year graduation rate for students with high intellectual self-confidence versus those with less intellectual self-confidence. A significant difference was found in the graduation rates for the two groups (chi-square (1) = 6.034, $p < .05$). Contrary to expectations, students who indicated a high intellectual self-confidence were less likely to graduate within six years than those who did not. Thus, for the second variable, the null hypothesis was rejected, but the finding was not in the predicted direction (See Table 14.)

Hypothesis three states: There will be no statistically significant difference in the six-year graduation rate of African American students for those who believe that racism is no longer a major problem, as compared to those who do not. A chi-square test of independence was calculated comparing the six-year graduation rate for students who believe that racism is still a problem versus those who do not. No significant relationship was found (chi-square (1) = .296, $p > .05$). The opinion that race is still a problem and six-year graduation appear to be independent events. Again, the null hypothesis was not rejected. (See Table 15.)

The fourth hypothesis states: There will be no statistically significant difference in the six-year graduation rate of African American students for those who believe that promoting racial understanding is important, as compared to those who do not. A chi-square test of independence was calculated comparing the six-year graduation rate for students who believe that promoting racial understanding is important and those who do not. No significant relationship was found (chi-square (1) = 3.706, $p > .05$). Belief in the importance of promoting racial understanding and six-year graduation appear to be independent events. The null hypothesis was not rejected for this variable. (See Table 16.)

Table 14

Chi-Square Results for Six-Year Graduation Rate by Intellectual Self-Confidence Variable

Non-Cognitive Variable	Graduated Within 6 Years	Not Graduated Within 6 Years
	Number (Percent)	Number (Percent)
Intellectually Self-Confident	19 (35.8%)	34 (64.2%)
Less Intellectually Self-Confident	107 (55.29%)	87 (44.8%)
Chi Square	6.208	
<u>df</u>	1	
<u>p</u>	0.013	

Table 15

Chi-Square Results for Six-Year Graduation Rate by the Racial-Discrimination-is-No-Longer-a-

Major-Problem Variable

Non-Cognitive Variable	Graduated Within 6 Years	Not Graduated Within 6 Years
	Number (Percent)	Number (Percent)
Racial discrimination is still a major problem	114 (52.3%)	104 (47.7%)
Racial discrimination is no longer a major problem	2 (40.0%)	3 (60.0%)
Chi Square	0.296	
<u>df</u>	1	
<u>p</u>	0.586	

Table 16

Chi-Square Results for Six-Year Graduation Rate by Promoting-Racial-Understanding Variable

Non-Cognitive Variable	Graduated Within 6 Years	Not Graduated Within 6 Years
	Number (Percent)	Number (Percent)
Promoting Racial Understanding Important	81 (47.1%)	91 (52.9%)
Promoting Racial Understanding Not Important	21 (65.6%)	11 (34.4%)
Chi Square	3.706	
<u>df</u>	1	
<u>p</u>	0.054	

The fifth hypothesis states: There will be no statistically significant difference in the six-year graduation rate of African American students for those who believe that they will drop out either permanently or temporarily, as compared to those who do not. A chi-square test of independence was calculated comparing six-year graduation rate for those who expect that they will not drop out either temporarily or permanently versus those who reported less confidence about remaining enrolled. No significant relationship was found (chi-square (1) = 3.185, $p > .05$). Expectation of dropping out either temporarily or permanently and six-year graduation appear to be independent events. Therefore, the null hypothesis was not rejected. (See Table 17.)

The sixth hypothesis states: There will be no statistically significant difference in six-year graduation rate of African American students for those who plan to attend graduate school or attain an advanced degree, as compared to those who do not. A chi-square test of independence was calculated comparing six-year graduation rate for students who indicated a strong interest in furthering their education and those who did not. No significant relationship was found (chi-square (1) = .001, $p > .05$). Plans for further education and six-year graduation appear to be independent events. The null hypothesis for this variable was not rejected. (See Table 18.)

Hypothesis seven states: There will be no statistically significant difference in the five-year graduation rate of African American students for those who decided to go to college because a mentor/role model encouraged them to go, as compared to those who did not. A chi-square test of independence was calculated comparing the six-year graduation rate for students who were influenced by a mentor in deciding to go to college versus those who were not. No significant relationship was found (chi-square (1) = .004, $p > .05$). Therefore, the influence of a mentor on the decision to attend college and six-year graduation appear to be independent events. Again, the null hypothesis was not rejected. (See Table 19.)

Table 17

Chi-Square Results for Six-Year Graduation Rate by Likelihood of Dropping Out Either

Temporarily or Permanently

Non-Cognitive Variable	Graduated Within 6 Years	Not Graduated Within 6 Years
	Number (Percent)	Number (Percent)
Likely to Drop Out of School	63 (47.0%)	71 (53.0%)
Not Likely to Drop Out of School	41 (60.3%)	27 (39.7%)
Chi Square	3.185	
<u>df</u>	1	
<u>p</u>	0.074	

Table 18

Chi-Square Results for Six-Year Graduation Rate by Interest in Further Education

Non-Cognitive Variable	Graduated Within 6 Years	Not Graduated Within 6 Years
	Number (Percent)	Number (Percent)
Strong Interest in Further Education	73 (51.4%)	69 (48.6%)
Little or No Interest in Further Education	44 (51.2%)	42 (48.8%)
Chi Square	0.001	
<u>df</u>	1	
<u>p</u>	0.971	

Table 19

Chi-Square Results for Six-Year Graduation Rate by Mentor Variable

Non-Cognitive Variable	Graduated Within 6 Years	Not Graduated Within 6 Years
	Number (Percent)	Number (Percent)
Mentor Important	67 (51.1%)	64 (48.9%)
Mentor Not Important	49 (51.6%)	46 (48.4%)
Chi Square	0.004	
<u>df</u>	1	
<u>p</u>	0.949	

The eighth hypothesis states: There will be no statistically significant difference in the six-year graduation rate of African American students for those who indicate a strong belief in their own leadership ability, as compared to those who did not. A chi-square test of independence was calculated comparing the six-year graduation rate of students who were very confident of their leadership ability versus those who were less confident. No significant relationship was found (chi-square (1) = .000, $p > .05$). Thus, strong confidence in one's leadership ability and six-year graduation appear to be independent events. The null hypothesis was not rejected for this variable. (See Table 20.)

Hypothesis nine states: There will be no statistically significant difference in the six-year graduation rate of African American students for those who performed volunteer work frequently throughout the last year as compared to those who did not. A chi-square test of independence was calculated comparing the six-year graduation rate of students who performed volunteer work frequently versus those who did not. No significant relationship was found (chi-square (1) = .471, $p > .05$). Volunteer work and six-year graduation appear to be independent events. Therefore, the null hypothesis was not rejected again. (See Table 21.)

Table 20

Chi-Square Results for Six-Year Graduation Rate by Self-Assessed Leadership Ability

Non-Cognitive Variable	Graduated Within 6 Years	Not Graduated Within 6 Years
	Number (Percent)	Number (Percent)
High Leadership Ability	28 (50.9%)	27 (49.1%)
Lower Leadership Ability	98 (51.0%)	94 (49.0%)
Chi Square	0.000	
<u>df</u>	1	
<u>p</u>	0.986	

Table 21

Chi-Square Results for Six-Year Graduation Rate by Volunteer Work Variable

Non-Cognitive Variable	Graduated Within 6 Years	Not Graduated Within 6 Years
	Number (Percent)	Number (Percent)
Performed Volunteer Work	19 (46.3%)	22 (53.7%)
Did Not Perform Volunteer Work	106 (52.2%)	97 (47.8%)
Chi Square	0.471	
<u>df</u>	1	
<u>p</u>	0.492	

Chapter 5

Discussion

The purpose of this study was to identify questions from the Annual Freshman Survey (AFS) that may predict academic success, in the form of six-year graduation, for African American students at a predominately White institution. Previous research has reported the relevance of non-cognitive variables in predicting college grades, persistence, and graduation. This study extends that literature by focusing on variables from the AFS that may be used as non-cognitive predictors for six-year graduation.

The researcher used existing data from the Cooperative Institutional Research Program Annual Freshmen Survey (See Appendices A, B, and C). The Academic Assessment Office at the selected institution provided data for the study. Data were derived from a sample consisting of 249 African American students who enrolled as freshmen in the fall of 1992, 1993, and 1994.

Major Findings

This study was guided by nine null hypotheses. Each of the variables for these hypotheses was analyzed to determine graduation status within a six-year time period. The results demonstrate that none of the variables were positive predictors of six-year graduation for the sample. To the contrary, one variable was a negative predictor of six-year graduation: students who indicated high intellectual self-confidence at matriculation were significantly less likely to graduate within six years than those with lower intellectual self-confidence.

Based on the results of this study, it appears that the AFS is not a good tool for predicting graduation of African American students at this institution. There are several possible explanations for this.

First, while non-cognitive variables may have significant relevance for predicting academic success for African American students, the AFS may not be a good substitute for the Non-Cognitive Questionnaire (NCQ) (Tracey & Sedlacek, 1984, 1985) used in previous research. Although the AFS items used in the present study were selected because of their logical relationship to the eight non-cognitive variables found in previous research, the items selected from the AFS may not bear a close enough relationship to the NCQ items.

For example, previous studies using the NCQ have shown that the availability of a mentor or role model is associated with academic success for African American students. The only available AFS item concerning mentoring asked the importance of a mentor's encouragement in the decision to attend college. This differs from the intent of the original non-cognitive variable in two important ways. First, a student could have a mentor, but the mentor may not have been a strong influence on the decision to attend this institution. In this case, the student's response would erroneously lead the researcher to believe that no mentor existed. On the other hand, the student might report that a mentor encouraged college enrollment, and yet after enrollment the mentor might be too distant from the student to provide support. In this case the researcher would conclude falsely from the AFS response that the student had a mentor available.

Another example of how an AFS variable may not have had a direct relation to the point for which it was selected is demonstrated through the variable that evaluates students' decisions to attend college based on a desire to attend graduate or professional school. This AFS variable was selected as one of two ways to determine students' preference for long-term goals over immediate needs. However, it should be acknowledged that while students may be committed to long-term goals, this commitment might not be demonstrated through a preference to attend

graduate or professional school. Some students may instead demonstrate this quality through a strong orientation to completing a bachelor's degree or motivation to acquire a job. This fact may be particularly relevant for many students attending the institution in this study. Because it is a technically oriented institution, many students are in technical degree programs that lead to employment following the bachelor's degree. For this reason, if students perceive that they can accomplish their goals without post-baccalaureate education, they may still be committed to the relatively long-term goal of completing an undergraduate education. Furthermore, this variable only asks students whether their decisions to attend college were strongly influenced by the desire to attend graduate or professional school. Some students may plan to attend graduate or professional school, but may have decided to attend college for another reason. Such students would have been defined in this study as not preferring such long-term goals.

There are some variables that may be relevant for this study but which function poorly with this sample. This was particularly true on questions related to racism, where these students' responses were very closely clustered. For instance, for the variable measuring students' opinions about whether racial discrimination is no longer a major problem in America, a large majority (87.6%) disagreed with this statement. A question on which most respondents agree or disagree is not a good vehicle for discriminating between subgroups in a sample.

The fact that none of the variables in this study were positive predictors of six-year graduation for this sample may suggest that academic success is related more to the institutional environment than to any pre-college attributes or experiences. It is possible that in such cases, good teaching can overcome poor preparation, or vice versa. Not only faculty members, but also other students may affect a student's academic success. A negative campus climate for African

American students may cause well-prepared students to perform poorly or to transfer to more welcoming situations.

Finally, the most perplexing result of this study was the finding that students who are extremely intellectually self-confident are significantly less likely to graduate than those who are less intellectually self-confident. There are at least two possible explanations for this counter-intuitive finding. First, students who rate themselves in the highest level of intellectual self-confidence may in fact be over-confident. These students may actually be poorly equipped to handle a rigorous academic challenge. This is particularly likely because of the selective nature of this institution. A second and more troubling explanation could be related to the culture of the institution. Extremely confident African American students may find the environment at this institution hostile. The overwhelmingly White faculty at this southeastern university may be unaccepting of confident African American students, or these students may find other students particularly unwelcoming. This atmosphere could cause students to perform worse than expected or to leave the institution. The campus climate at this institution may simply not be conducive to academic success for intellectually confident African American students.

Relation of Findings to Existing Literature

Because the previous literature is inconsistent, the findings of this study correspond to some previous studies and contrast with others. The present study found no factors that were positive predictors of graduation for African American students. This is consistent with the previous study by Arbona and Novy (1989), who found no significant predictors of academic success. However, these findings are at odds with the results of studies by Pfeifer and Sedlacek (1974), Beasley and Sease (1974) and Tracey and Sedlacek (1984, 1985, & 1987) who found non-cognitive variables to be predictive of college grades and graduation for African American

students. The results of the present study may relate more strongly to literature that explains student-institution relationships among African American students at PWIs. Clark and Crawford (1992) argue that a positive racial climate on a PWI campus may be associated with high academic performance and persistence. In the same respect, negative climate or feelings of isolation for African American students may contribute to student attrition (Clark & Crawford, 1992).

Carey (1976) also discusses the perception of African American students of the PWI environment as a factor related to academic performance. He relates that study of African American student perceptions supports the contention that these students view their own academic performance as an effect of a lack of experience with a given subject matter, insensitivity to the historical context of the Black experience by faculty and the institution, perceived lack of concern by the administration of the socio-emotional needs of African American students, and a curriculum non-inclusive of Black history. If students in the present study experienced the institutional environment as negative, these experiences may have contributed more to the results of the study than the individual variables examined. This would be consistent with the findings of the institution's recent campus climate study (Hutchinson & Hyer, 2000), which found that African American students perceived the campus climate to be much less supportive than did their White classmates.

Limitations and Suggestions for Future Research

As with all research, the present study was not without some limitations. One limitation to this study was the sample. The data used in this study were not derived from a random sample of African American freshmen entering in the selected cohorts. Instead, students who made up the sample were those students who were able to attend freshmen orientation, completed the

AFS, and provided useable social security numbers. At this institution almost all freshmen students (more than 90% in most cohorts) attend summer orientation, and virtually all attendees complete the AFS (C. Turrentine, personal communication, April 17, 2001). However, there is a higher than normal incidence of failure to provide social security numbers for the AFS and other surveys, as compared to other similar institutions (C. Turrentine, personal communication, April 17, 2001).

Students who provided useable social security numbers may have differed in some important ways from students who did not know their correct social security numbers or those who elected not to supply them. The results of this study may have differed if a random sample of students was used. Future researchers could repeat this study using a random sample and some reliable way other than SSNs to link to university census files.

Another limitation of the study deals with the institutional type. The institution used in this study may be different from institutions that have previously used the NCQ to predict academic success for African American students. This institution is selective, and has a predominately technical curriculum, a disproportionately small number of African American students (less than 5%), and a very small number of African American community members in the surrounding area. It is located in the southeast, and 60% of the students are men. Each of these factors may have some relation to the outcome of this study. Future researchers could repeat this study at different institutions to determine if AFS variables may be related to academic success with other student populations.

Finally, this study used an indirect approach to establish a connection between the AFS and the NCQ. No positive relationship was found. However, future researchers could test this idea directly by conducting concurrent validity studies between the two instruments. Another

logical extension would be to conduct similar concurrent validity studies between the NCQ and other widely used instruments.

Suggestions for Future Practice

Results of this study provide three important recommendations for future practice. First, if university administrators are interested in identifying African American students at risk, they should use the NCQ rather than the AFS. Since the NCQ has been demonstrated to have predictive validity on several populations, it is more likely to be a good way to predict student academic success.

Second, based on the results of this study, and some previous studies, it is not altogether clear that non-cognitive variables—even if measured by the NCQ—would be good predictors of academic success at every institution. It is therefore recommended that if university administrators are interested in using the NCQ as a way to identify African American students at risk at their institution, they should first test the NCQ on their own students to make sure it is in fact predictive of academic success for the African American population at their institution.

Third, where well-prepared African American students are not successful, this study suggests that the relevant factors may be institutional rather than personal. An unwelcoming campus climate can mitigate against success even—or perhaps especially—for confident African American students.

Conclusion

This study began as an interesting idea, but it did not pan out as the researcher had hoped. Academic performance is difficult to predict for all students, and it is particularly difficult to predict for African American students at PWIs. Because academic performance is related to so many different variables, it is unlikely that SAT scores or an established set of non-cognitive

variables will be highly predictive of overall African American student success at the college level. Instead, it may be more relevant to evaluate students individually based on their pre-collegiate academic performance (i.e., high school grades), courses and difficulty in high school preparation, student-environment fit, and personal characteristics such as the non-cognitive variables measured with the NCQ. Beyond examining these individual variables, it may also be relevant to examine elements of university culture that support or inhibit the academic success of African American students.

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Appendices A, B, and C:

Annual Freshman Surveys 1992, 1993, and 1994

by the Cooperative Institutional Research Program (CIRP)

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Appendix D

Institutional Review Board Approval Form