To the Graduate Council:

I am submitting herewith a dissertation written by Tammalyn Michele Thomas-Golden entitled: "Predicting the Academic Achievement of African American Women at Two Predominantly White Women's Colleges." I have examined the final paper copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Educational Administration and Policy Studies.

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We have read this dissertation and recommend its acceptance:

Acceptance for the Council:

Vice Chancellor and Dean of Graduate Studies

PREDICTING THE ACADEMIC ACHIEVEMENT OF AFRICAN AMERICAN WOMEN AT TWO PREDOMINANTLY WHITE WOMEN'S COLLEGES

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Tammalyn Michele Thomas-Golden
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DEDICATION

This dissertation is dedicated to my parents, Rev. and Mrs. Hardil Thomas, who expected As and Bs; met with teachers; and believed summers were for vocabulary expansion, writing book reports and critical analysis, not sleeping late.

All that I am is because of you and all that you gave me, showed me, taught me and provided for me. I could never have achieved anything without the foundation that you gave me. I am a product of time, care and concern – thank you.

And to my daughter, Delaney,

may you continue in the path walked by me and generations before; understanding the unique beauty and strength of being an African American woman.

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ABSTRACT

The purpose of this study was to determine if the Non-Cognitive Questionnaire (NCQ) could more accurately predict the academic achievement of first-year, African American women at two predominantly white women's colleges than could the SAT. The participants' first semester grade point averages were used as the dependent variable. The eight sub-scales of the NCQ, SAT-Verbal score and SAT-Math score were the independent variables. Study participants were 31 first-year, first-time students at two predominantly white women's colleges located in the southeastern United States.

There were three findings of this study. First, "Demonstrated Community Service" was the only NCQ sub-scale to emerge as a predictor variable for fall grade point average. Second, neither the SAT-Verbal score nor SAT-Math score were significant predictors of fall grade point averages. Third, the NCQ had low prediction ability. In summary, the study found that the NCQ had low predictive ability for African American women in this study. The research does not recommend dismissing the entire body of academic literature on the NCQ. Instead, the study raises questions that compel further investigation with a larger number of African American women. Moreover, it underscores the need to identify additional factors that might account for the academic achievement of African American women, in general.

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CHAPTER I
INTRODUCTION

Total minority enrollment at the nation's colleges and universities has surged by 122 percent over the past 20 years, up from nearly 2 million in 1980-81 to 4.3 million in 2000-01 (Minorities in Higher Education Annual Status Report, 2003). Specifically, African Americans have made significant gains in higher education. In 2001-2002, African American men accounted for 7.1% of the bachelor degrees conferred on African Americans (Snyder, Tan & Hoffman, 2004). However, African American women received 10.4% of the bachelor degrees conferred on African Americans (Snyder, et al., 2004). African American women also outpaced African American men in obtaining graduate degrees. In 2001-2002, African American men accounted for 5.9% of masters' degrees and 3.9% of the doctoral degrees awarded to African Americans. African American women almost doubled those numbers, accounting for 10.1% of masters' degrees and 7.2% of doctorates awarded to African Americans. These statistics suggest that African American women are experiencing greater academic success than are African American men. Nevertheless, there has been little research conducted that specifically examines the academic achievement of African American women.

Historical Role of Education and African American Women

> No other group in America has so had their identity socialized out of existence as have Black Women. We are rarely recognized as a group separate and distinct from black men, or as a present part of the larger group "women" in this culture… When black people are talked about the focus tends to be on black men; and when women are talked about, the focus tends to be on white women (hooks, 1981; p.7).

hooks distinctly articulates the plight of African American women in the academic literature. Howard-Hamilton (2003) states that finding and applying theoretical constructs appropriate to the educational experiences of African American women can be challenging. In order to understand the lack of academic theory regarding African American women, one must review the historical progression and ideology of African American people in the United States (Howard-Hamilton, 2003). In the nineteenth century, African American women were not able to obtain an education nor were they viewed as financial contributors to the household. Instead of focusing on gender issues, African American women assumed the role of motivator and supporter in order to better their race. When educational opportunities were made available for African Americans, African American men were able to pursue an education in any discipline. However, those African American women, who were able to attend college, were relegated to the elementary and secondary education fields (Howard-Hamilton, 2003). Thus, African American women experienced the double oppression of racism and sexism. The subordinate role for African American women was assumed and enforced by Caucasian and African American men as well as Caucasian women (Howard-Hamilton, 2003).

In the twenty-first century, being female and African American still poses a difficulty for African American women. Gender is salient in shaping identity and defining various facets of a woman's educational experience; yet for the African American woman, race has an influence that often differentiates experiences and opportunities (Zamani, 2003). It is this combination of race and gender that causes the educational experience of African American women to differ from that of African American men and Caucasian women. It is also this combination of race and gender that

applies when attempts are made to identify predictors of academic achievement; that are relevant and exclusively for African American women.

Role of Women's Colleges in Academic Achievement

Harwarth (1999) defines a women's college as an institution where the primary institutional mission is to serve, promote and expand educational opportunities for women in higher education as well as a predominantly female student body. These institutions often suggest that they provide women with the opportunity to develop confidence, to learn and practice leadership skills as well as excel academically. In their studies, Tidball and Kistiakowsky (1976) and Riordan (1994) found that the unique environment provided by a woman's college has a positive impact on women students and is associated with high levels of learning and achievement. For example in comparison to women at coeducational institutions, women at women's colleges are more satisfied with their overall college experience (Astin 1992; Astin 1977; Smith 1990); are more likely to major in non-traditional fields (Bressler and Wendell 1980; Scheye and Gilroy 1994; Sebrechts 1993; Solnick 1995); and express higher levels of self esteem and leadership skills (Astin 1992; Astin 1977; Kim and Alvarez 1995; Riordan 1992; Smith 1990; Smith, Wolf, and Morrison 1995; Whitt 1994; Whitt 1992) (as cited in Harwarth, 1999).

In their synthesis of research on college impact, Pascarella and Terenzini (1991) examined various research studies on institutional gender influences. They found evidence suggesting a relationship between attending a single-sex institution and higher levels of persistence and educational attainment for women. The literature has yielded inconclusive results regarding whether higher levels of persistence and educational

attainment are related more to gender composition, selectivity or student characteristics. Currently, there is little evidence on the impact of women's colleges on women of color (Wolf-Wendel, 1999). Research on women's colleges fails to disaggregate data by race; therefore, the impact of women's colleges on students of color is unclear (Wolf-Wendell, 1999). In addition, Harwarth, Maline & DeBra (1997) suggests that research on women's colleges is not reflective of the experiences of African American women. Given the stated impact of the educational environment on African American women and their achievement, consideration must be given to their educational setting, when identifying predictors of academic achievement.

Statement of the Problem

Although African American women continue to outpace African American men in higher education, relatively few studies can be found that predict the academic achievement of African American women. Of those prediction studies, African Americans and women are often referred to in aggregate form. Although African American women are the largest numerical minority on all women's colleges campuses, they are absent from the academic literature that focuses on women's colleges (Harwarth, 1999; Wolf-Wendel, 1999). Academic literature on predominantly white women's colleges focuses on the experiences of Caucasian women not African American women. Indeed, there is nothing in the academic literature that focuses on predicting the academic achievement of African American women at predominantly white women's colleges.

African American Women at Collegial Institutions

Research suggests that predominantly white colleges and universities, co-educational historically black colleges and women's colleges have had a profound impact on the lives of African American women (Wolf-Wendel, 1998). Fleming (1984) suggests

that the type of institution, (i.e., predominantly white or historically black) has an impact on the academic achievement of African American women. When African American women arrive on a predominantly white campus, alienation and exclusion often characterize their academic experience (Guy-Sheftall & Bell-Scott, 1989). Therefore, at predominantly white institutions, African American women develop assertive characteristics that allow them to hold their own intellectually (Fleming, 1984). However, despite these characteristics, they experience feelings of institutional abandonment, academic stress and social isolation. The African American woman who attends a predominantly white institution is often subjected to an isolating and unreceptive classroom environment (Guy-Sheftall & Bell-Scott, 1989).

Surprisingly, the homogeneity of an all-black environment does little to enhance the academic achievement of African American women. African American women perceive less racial bias at historically black colleges and universities than at predominantly white institutions; however, they experience gender discrimination at these institutions (Fleming, 1996). Fleming (1984) noted while the academic development of African American women is greater, at historically black institutions, they lose their social assertiveness and become more submissive to external authority. As with their Caucasian counterparts, in the presence of men and in a homogenous environment, African American women tend not to assert themselves in order to gain or maintain male approval. In turn, this suppression of assertive tendencies translates into the suppression of intellectual abilities (Fleming, 1984).

Predictors of Academic Achievement

Traditionally, colleges have used SAT scores and the high school record to predict success in college. Over the past 70 years, researchers have conducted numerous studies to establish the validity of the SAT as a predictor of academic achievement (Camara & Echternacht, 2000). These studies have used the high school record (i.e., grade point averages, class rank) and SAT scores as predictors and freshman GPA as the criterion. Extensive research by Ramist, Lewis and McCamley-Jenkins (1993) indicated that the SAT added substantially to the prediction of academic achievement. In addition, the corrected coefficient was statistically significant when using both SAT scores and high school grades.

However, there has been continuous debate as to the validity of SAT as an accurate predictor of academic achievement for women and ethnic minorities. Supporters argue that the SAT has proven to be an important predictor of academic achievement in college across all subgroups and all types of measures of academic achievement. Critics argue that there is evidence to suggest that when used alone, standardized test scores lack the power to adequately predict academic achievement across gender and ethnic lines (Bridgeman & Wendler, 1991; Sowa, Thomson and Bennett, 1989). For example, the SAT has been shown to under-predict the first-year grade point averages for women and over-predict the first-year grade point averages for ethnic minorities (Ramist et al, 1994; Sowa, Thomson and Bennett, 1989). Sedlacek argues that this over- and under-prediction of averages for racial and cultural minorities may be caused by a sampling bias problem (Sedlacek, 1994).

Reliance on traditional, cognitive factors as predictors of academic achievement also may hamper African American women from fully achieving academic success. Indeed, several studies have provided strong evidence that non-cognitive factors were just as important as or more important to understanding the academic achievement of minority students than were traditional cognitive factors (Astin, 1975; Gelso & Rowell, 1967; Messick, 1979; Nelson, Scott, & Bryan, 1984; Pascarella & Chapman, 1983; Pascarella, Duby & Iverson, 1983; Tinto, 1975). Several non-cognitive variables that can lead to academic achievement success for college students have been identified. These variables include social and academic integration, interaction and experiences with peers and faculty, student demographic characteristics, career and vocational goals, and degree of involvement in the institution (Pascarella & Terenzini, 1991; Tinto, 1993; Tracey & Sedlacek, 1984a).

Evidence suggests that non-cognitive variables can more accurately assess the predictors of academic achievement for women and minority students than traditional cognitive predictors (Ancis & Sedlacek, 1997; Pascarrella & Terenzini, 1991; Tracey & Sedlacek, 1984a; 1989; Sedlacek, 1993). There is also evidence that the non-cognitive skills needed for academic achievement exist and these skills tend to differ across student populations (Ancis & Sedlacek, 1997; Fleming, 1984; Tracey & Sedlacek, 1984a). These differences result in the student's adaptation and development of characteristics in response to the educational environment (Tinto, 1993; Tracey & Sedlacek, 1984a). In order for African American students to succeed in predominantly white colleges and universities, a different set of skills is needed because the environment is not the same for African American students and Caucasian students (Fleming, 184; Loo & Rolison, 1986).

Further, women also must often possess a different set of skills, outside of cognitive factors, in order to succeed in college. These results support the importance of considering non-cognitive variables as factors in the academic achievement of African American women.

Use of the Non -Cognitive Questionnaire

Based on Sedlacek and Brooks' (1976) research, Tracey and Sedlacek (1984a) designed a written questionnaire, the Non-Cognitive Questionnaire (NCQ), to assess seven non-cognitive dimensions. These variables were: (a) Positive self-concept; (b) Realistic self-appraisal (about academic abilities); (c) Understanding of and ability to deal with racism; (d) Preference for long range rather than short term goals; (e) Availability of a strong support person; (f) Successful leadership experience; and (g) Demonstrated community service (Sedlacek and Brooks, 1976). Tracey and Sedlacek (1984a) added an eighth dimension, academic familiarity. A copy of this instrument appears in Appendix A and a more detailed explanation of the instrument can be found in Chapter Three. Tracey and Sedlacek wanted to compare the effectiveness of the NCQ in predicting academic achievement with the previous standard, the Scholastic Aptitude Test (SAT) scores (Powell & Arriola-Jacob, 2003). The SAT was selected because at the time it was "one of the single best predictors of academic achievement" (Astin, 1978; Spady, 1971 as cited in Tracey & Sedlacek 1984a; p. 172).

Through over thirty years of research and practice, Sedlacek (2004) has developed a non-cognitive assessment model, using the NCQ as the measuring instrument, which demonstrates that "those from diverse racial and cultural groups have been particularly ill-served by measures currently available" (p.35). The non-cognitive assessment model,

several studies have examined the ability of the SAT and non-cognitive variables, as measured by the NCQ, to predict the academic achievement of African Americans, Asian Americans, Hispanics, international students, student athletes, and female students (Ancis & Sedlacek, 1997; Boyer & Sedlacek, 1988; Fuertes & Sedlacek, 1995; Schwartz and Washington, 1999; Ting, 2000; Tracey & Sedlacek, 1984b, 1985, 1989). These studies have shown that the NCQ is most effective when used with the SAT in predicting the academic achievement of students who often experience inequities in a university environment (Ancis & Sedlacek, 1997; Arbona & Novy, 1990; Boyer & Sedlacek, 1988; Fuertes & Sedlacek, 1995; Sedlacek & Adams-Gaston, 1992; Schwartz & Washington, 1999; Ting, 2000; Ting & Robinson, 1998; Tracey & Sedlacek, 1985, 1989).

Ting and Robinson (1998) employed the NCQ to predict the first year academic success of Caucasian and African American students. They administered the NCQ to 2,237 students at the new student orientation at a southeastern, public, predominantly White land-grant institution. Of the participants, 122 were African American women. The prediction model explained 8% (fall) and 17.4% (spring) of the grade point averages for these women. The researchers suggested that the convergence of race and gender revealed more psychosocial predictors which were not explored in previous studies.

Ancis and Sedlacek (1997) conducted a research study that examined the validity of the NCQ and SAT in predicting women's academic achievement throughout college. They administered the NCQ to random samples of first-year, female students entering at a large, mid-Atlantic university. Their results suggested that both non-cognitive and cognitive variables are significantly related to female students' GPA throughout college (Ancis and Sedlacek, 1997). According to the researchers, the results indicate that using

SAT scores alone tends to under-predict women's academic achievement; while the inclusion of non-cognitive variables as predictors offers a more complete understanding of the educational development of women (Ancis and Sedlacek, 1997). The current study extended the research of Ting and Robinson (1998) and Ancis and Sedlacek (1997) by examining first-year, African American students at two predominantly white women's colleges, a group for which no similar study has been conducted.

Purpose of the Study

The **purpose** of the study was to determine if the Non-Cognitive Questionnaire (NCQ) could more accurately predict the academic achievement of first-year, African American women at two predominantly white women's colleges than could the SAT. The participants' first semester grade point averages were used as the dependent variable. Only the fall grade point averages were used because students who fail during the first semester of college often also fail to graduate (Astin, 1993; Tinto, 1993). Further, in previous research, the NCQ was more predictive of first semester grade point averages for African American students (Tracey & Sedlacek, 1984a).

Rationale

The rationale for the study was to produce preliminary data that would add to the literature on the academic achievement of African American women. This rationale was based on what was not known about the academic achievement of African American women at predominantly white women's colleges. To examine this question, the investigator selected the NCQ as the primary instrument.

The NCQ possesses good predictive validity for grade point averages achieved by African Americans (Tracey & Sedlacek, 1984a). Further, the NCQ was highly predictive of college retention for African Americans (Tracey & Sedlacek, 1984a). Finally, the

literature suggests that the dual minority status of race and gender influences the academic achievement of African American women (Fleming, 1994; Ting & Robinson, 1998).

Significance

The study is significant because it focuses on African American women's academic achievement at predominantly white women's colleges, an area that has not previously been researched. As stated previously, the research suggests that women's colleges offer female students a unique experience (Pascarella & Terenzini, 1991; Tidball, 1976). In addition, Fleming (1984) suggests that in the presence of men, African American women become like their White counterparts, anxious about their competence. Further, researchers admit that samples in current research on women's colleges do not adequately reflect the experiences of women of color (Harwarth et al., 1997; Wolf-Wendel, 1999). Therefore, there is a need for research that explores the confluences of these factors in one study.

Moreover, current research indicates that traditional variables tend to under-predict the academic achievement of women and over-predict the academic achievement of minorities (Ancis & Sedlacek, 1997; Tracey & Sedlacek, 1984a, 1985). The identification of non-traditional predictors may lead to the development of more effective models to be used for predicting the academic achievement of African American women in college settings.

Finally, when studying African Americans, researchers tend to focus on between-group comparisons and not within-group differences. African American women encounter challenges and problems arising from their unique identity in two minority

categories (i.e., gender and race). This is significant because previous research suggests that race and gender might be influential in predicting the academic achievement of African American women (Ting & Robinson, 1998). Thus, when studying the collegial experience of African American women, the intersection of race and gender must be examined. The study's significance rests on its attention to variables related to the academic achievement of African American women.

Research Design Overview

A quantitative research design was used to determine if the Non-Cognitive Questionnaire (NCQ) could more accurately predict the academic achievement of first-year, African American women at two predominantly white women's colleges than could the SAT. Specifically, the Non-Cognitive Questionnaire was administered to first-year, African American women at two predominantly white women's colleges during on-campus research sessions.

Data Analyses

The NCQ sub-scales, SAT-Math score and SAT-Verbal score, served as the predictor variables. Academic achievement during the freshmen year was measured by fall grade point averages. First, a zero-order correlation was conducted between fall grade point averages and the NCQ sub-scales. This analysis accentuated correlations between a particular predictor and Y. Only those NCQ sub-scales, along with the SAT-Math and SAT-verbal scores were used in the multiple regression analysis (SPSS 13). The data analysis determined the contributions of each predictor in explaining the variance in first-year, African American women's first semester grade point averages. A more detailed account of the research study's methodology is presented in Chapter Three.

Delimitations

There were two major delimitations of the study. First, the focus of the research was on the academic achievement of African American women at two predominantly white women's colleges located in the southeastern United States. Second, the participants were women who self-identified themselves as African American and who were classified by their institution as first-year students. This further narrowed the focus of the study.

Limitations

Creswell (1994) defines limitations as "potential weaknesses of a study" (p. 110). Using this definition, there were four limitations to this study. First, the study took place at two predominantly white, women's colleges in the southeastern United States. These institutions are similar in mission and in the number of African American undergraduates who are in attendance. Therefore, study results were limited to these two institutions.

A second limitation was population. There were a small number of African American women available at each institution. The minimal number of students further limited the generalizability of the results.

The study also did not offer a comparison between historically black women's colleges and predominantly white women's colleges. There are two historically black women's colleges in the United States: Bennett College in Greensboro, North Carolina and Spelman College in Atlanta, Georgia. Given the distinct mission and history of each institution, data could easily be disaggregated and the identity of the institution revealed. This would compromise the researcher's ability to maintain the anonymity of the participants and the confidentiality of the data.

Finally, the study was limited in part by the research design selected. Quasi-experimental designs are used when neither randomization nor manipulation of independent variables is possible (Frankfort-Nachmias and Nachmias, 1992). The research participants were first-year, African American women at two predominantly white women's colleges. Due to the modest number of African American women at this type of institution, a random sample was not feasible. The narrow scope limited the conclusions and implications that could be drawn from the participant data.

Organization of Study

The study is reported in five chapters. Chapter **One** provided an overview of the study including the research question, significance and rationale for pursing the inquiry, and the methodology employed for data collection and analysis. Chapter **Two** examines the relevant literature on traditional and non-cognitive predictors of academic achievement, and provides a review of the academic achievement literature regarding African American students at predominantly white institutions, women at single-sex institutions and African American women at predominantly white institutions. Chapter **Three** describes the research methodology used in the study including research strategies, data collection procedures and data analysis. Chapter **Four** presents an analysis of the data collected and the findings. Chapter **Five** provides a summary of the study, a discussion of the findings, and implications and recommendations for future research.

CHAPTER II
REVIEW OF RELATED LITERATURE

Over the past twenty years, women and African Americans, both men and women, have increased their attendance in post secondary institutions. However few research studies have been conducted on predictors of academic achievement for women as whole or for African American women in particular. Such research includes, but is not limited to cognitive and non-cognitive variables related to academic achievement in post secondary institutions such as standardized test scores; past high school performance; institutional characteristics; campus environment; campus climate; integration into the collegial academic community; and non-cognitive assessment.

This chapter provides an overview of research on the predictors of academic achievement for African Americans and women. The chapter is divided into seven sub-sections: 1) cognitive predictors of African American academic achievement; 2) non-cognitive predictors of African American academic achievement; 3) the influence of non-cognitive variables; 4) use of cognitive and non-cognitive variables in research; 5) non-cognitive variables and the academic achievement of women at single-sex institutions; 6) non-cognitive variables and academic achievement of African American women; and 7) the use of NCQ in research studies.

Cognitive Predictors of African American Academic Achievement

Traditionally, colleges and researchers have used high school rank, high school grades, and standardized test scores as predictors of college academic achievement. High school grade point average and high school rank have been consistent predictors of college grades (Schwartz & Washington, 1999). Jacobs (1985, as cited in Schwartz & Washington, 1999) compared the predictability of SAT scores to high school rank and

found rank to be the best predictor of college grade point averages for both males and females.

For the past 70 years, researchers have conducted numerous studies establishing the SAT as a valid predictor of collegial academic achievement, persistence and retention (Camara & Echternacht, 2000). While there is no single measure agreed upon as the primary criterion for determining success in college, academic achievement tends to be most frequently used. According to Camara and Echternacht (2000), the majority of these studies use SAT and high school record as predictors and freshman grade point averages as indicators of collegial academic success. The authors suggest three reasons for the frequent use of freshman grade point averages: (1) courses that freshmen take are more similar, thus minimizing grade comparability issues; (2) predictor and criteria data are readily available; and (3) freshmen grade point averages are highly correlated with cumulative grade averages (Camara & Echternacht, 2000; p. 1).

In a comprehensive study, Ramist, Lewis, and McCamley (1990) examined the validity of the SAT as a predictor of academic achievement (Ramist, Lewis, & McCamley, 2001). Ramist et al. analyzed a database of over 46,000 students from 38 different colleges. In order to establish comparability for student-to-student freshmen grade point average, the researchers employed three college-level variables: (1) course-taking variety (measured by number of courses); (2) variation of student aptitude level among courses (measured by the standard deviation of course SAT means); and (3) appropriateness of average course grades (measured by the correlation of mean course grade and mean SAT scores) (Ramist et al., 2001). Each measure demonstrated

significant correlation with the SAT-freshmen grade point average correlation (Ramist et al., 2001).

Across all ethnic groups, Ramist et al. (2001) reported findings consistent with those found in other validity studies of the SAT. Their findings indicated that the SAT added substantially to prediction, representing an increment of almost .10 beyond high school grades to the total correlation. Further, the combination of SAT scores and high school grades served as the best predictor of first-year grade point average. Among African American students, when predicting first-year grade point average, the SAT provided the largest correlation increment over high school grade point average. In addition, the course selection of African American students tended to be highly predictive based on the SAT verbal score.

Bridgeman, McCamley-Jenkins, and Ervin (2000) studied the validity of the redesigned and recentered SAT—the SAT I—with freshmen grade point average as the criterion. Their study used data from 48,039 students from 23 colleges. Bridgeman et al. findings were consistent with those of Ramist et al.; that despite the content changes, the predictability of the SAT remained unchanged. According to their research, the SAT I predicted academic achievement equally across ethnic groups. Women tended to perform slightly better than predicted; while men tended to perform slightly worse than predicted.

Problems with Cognitive Predictors

Standardized tests such as the SAT and ACT have been criticized for their gender and racial bias as well as for not adequately predicting across gender and ethnic groups (Ancis & Sedlacek, 1997; Moffat, 1993). This criticism has been supported by research that suggests standardized tests such as the SAT or ACT correlate fairly well with grades

for first-year Caucasian students, in general, but correlate at a lower level for non-white and nontraditional students (Sedlacek, 1989; Tracey and Sedlacek, 1984a, 1985, 1987, 1988, 1989).

Typically standardized tests, such as the SAT, tend to over-predict the academic achievement of African American students (Pfeifer and Sedlacek, 1971; Sedlacek, 1996, 2003, 2004). Research suggests that this over-prediction is evidence that equations based on a Caucasian sample are not able to predict accurately the academic achievement of African American students (Pfeifer & Sedlacek, 1971). Sedlacek (1994, 2004) concurs that a sampling bias problem may account for the over prediction for African Americans. For women, research indicates that the SAT tends to under predict the collegial academic performance of women (Ancis & Sedlacek, 1997; Sedlacek, 2003, 2004).

Non-Cognitive Predictors of African American Academic Achievement

Given the problems with cognitive predictors and ethnic/cultural minorities, some researchers suggest that non-cognitive predictors could provide institutions with an additional means of predicting academic achievement in college. This contention is supported by research that indicates that non-cognitive factors are more important predictors of success for African American students than for White students. For example, Nettles, Thoeny and Gosman (1986) found that high school grade point average, scores on the Scholastic Aptitude Test (SAT), or the scores on the American College Test (ACT) were significant predictors of collegial academic achievement for both African Americans and Caucasians. However, the researchers acknowledged that "there are many other factors that explain why students perform the way they do in college" (p.305). These researchers identified the "other factors" as: student satisfaction,

peer relationships and interfering problems; noting that these factors have a much greater impact on the academic achievement of African Americans than they do for Caucasians.

Non-cognitive factors refer to the variables "relating to adjustment, motivation, and perceptions, rather than the traditional verbal and quantitative areas typically measured by standardized tests" (Sedlacek, 2004; p.36). The first use of non-cognitive variables in assessment included the personal and social dimensions (Fredericksen, 1954; E.S. Wilson; 1955 as cited in Sedlacek, 2004). Other prediction studies of academic achievement using non cognitive variables include but are not limited to: student involvement (Astin, 1993), academic and social integration (Tinto, 1993), study skills (Nisbet, Ruble & Shurr, 1982) and socioeconomic background, institutional, and environmental variables (Ting & Robinson, 1988 as cited in Sedlacek, 2004).

Research has identified eight non-cognitive variables significant in the assessment of academic achievement for diverse populations.

Positive self–concept or confidence. A positive self-concept is predictive of the academic achievement for students of color and women (Sedlacek, 2004). A strong self-concept and cofidence is important for the continued academic achievement of students of color and women. According to Sedlacek (2204), "the student who feels confident of making it through school is more likely to survive and graduate than those without such confidence" (pg. 39). Studies show a correlation between students of color who demonstrate a positive sense of self and their adjustment and success in college (Boyer & Sedlacek, 1988; Kim and Sedlacek, 1996; Sedlacek & Adams-Gaston, 1992). A strong self-concept or confidence is needed due to their unique cultural and gender-related experiences.

Realistic self-appraisal. A student who has a realistic self-appraisal has the ability to denote his or her own weakness and strengths. Students of color and women of all races who are able to make realistic assessment of their abilities, despite obstacles to making such an assessment, do better in school than those less able to make that judgment (Sedlacek, 2004). While self-appraisal is correlated with the academic achievement across all races, it was particularly strong for African Americans (Tracey & Sedlacek, 1984a, 1984b, 1985, 1987). Research has concluded that women who are able to realistically self-appraise tend to have higher college grades than those who cannot make self-assessments (Ancis & Sedlacek, 1997).

Successfully handling the system. The successful non-traditional student is (1) a realist with personal experience of discrimination; (2) committed to fighting to improve the existing system; (3) not submissive to existing wrongs, nor hateful of society; able to handle a racist or otherwise discriminatory system; and (4) assertive that the school has a role or duty to fight discrimination (Sedlacek, 2004). Research has shown that students of color who understand racism, are prepared to deal with it and are able to negotiate the campus system to perform better academically (Tracey & Sedlacek, 1984, 1985, 1987). In addition, research has indicated that how well women are able "work the system" for themselves is predictive of their college grades (Ancis & Sedlacek, 1997).

Preference for long-term goals. Student of color who concern themselves with long-range goals instead of the immediate issues tend to have greater academic achievement. Having long-range goals is a predictor of academic success for students (Sedlacek, 2004). Research has shown African Americans with vague goals and low

aspiration tend not to achieve academic success in college (Astin, 1975; Tracey & Sedlacek, 1984a, 1986, 1987).

Availability of strong support person. A person of influence who offers advice tends to effect how well students of color and women perform in school. The educational system is not designed for students of color or women; therefore, it particularly important for them to have a person who offers advice in times of crisis or who can assist with understanding the ins and outs of the system (Sedlacek, 2004). Having a strong support person has been shown to correlate with academic achievement for African Americans and women (Ancis & Sedlacek, 1997; Tracey and Sedlacek, 1984a, 1985, 1987).

Leadership experience. Assertiveness is an important component in leadership for students of color and women as well as for the ability to predict their college success (Sedlacek, 2004). Being passive does not afford students of color needed opportunities for success. Instead, the successful student of color must seek out resources necessary for success. This leadership component has shown correlation with academic success for students of color (Dorsey & Jackson, 1995; Sedlacek, 2004). In addition to African Americans, research has indicated the predictive value of leadership of academic success for students from a low socioeconomic background, Latinos, Native Americans and women (Ancis & Sedlacek, 1997; Ting, 1998; Ting & Robinson, 1998; Tracey & Sedlacek, 1984, 1985).

Community involvement. Critical to the academic success of students of color and women is a community which with they identify and from which they receive support (Sedlacek, 2004). Several studies have indicated community as a strong predictor for African American students (Allen, 1992; Tracey & Sedlacek, 1984, 1985,

1987). In addition, research by Ancis and Sedlacek (1997) found correlation between community and academic achievement for undergraduate women.

Knowledge acquired in a field. Women and students of color often learn and develop by methods that differ from traditional students (Sedlacek, 2004). For example, those students of color and women who have evidence of non-traditional learning, such as volunteering, prior to college, tend to be more successful than those who do not participate in this type of learning (Sedlacek, 2004).

Instead of using the eight non-cognitive predictors, some researchers have focused on single variables that have demonstrated significance in previous studies. Gerardi (1990) examined academic self-concept as a predictor of academic success among minority and low-socioeconomic group students. In his assessment of non-cognitive variables, Gerardi (1990) used the Brookover Self-Concept of Ability Scale (SCA) (Brookover, Thomas & Paterson, 1964). Gerardi administered the SCA to ninety-eight freshmen, engineering students at the City of University of New York. While his research indicated that the SAT was a good predictor of academic achievement, Gerardi found that the SCA was a better predictor of academic success among minority and low-socioeconomic background students. Gerardi suggested that the academic capabilities of "non-traditional" groups are often "hidden behind traditional cognitive variables as sole predictors of academic success" (Gerardi, 1990; p. 406).

In a small, exploratory study consisting of twenty-nine African American freshmen at a mid-sized university, Gold, Burrell, Haynes and Nardecchia (1990) used student adaptation to college as a predictor of academic success. Gold and his colleagues administered the Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk,

1989) to freshmen. Results of the study were consistent with Tinto's (1987) hypothesis suggesting personal-emotional adjustment as a significant predictor of academic success. In addition, there were different predictors of academic success for African American men and women. For African American men, academic success was reflected in "greater degrees of emotional self-reliance and the effectiveness of personal psychological coping resources" (Gold et al, 1990; p.14). The predictors for African American women will be discussed later in this chapter.

Influence of Non-Cognitive Variables

Critics of standardized tests advocate that the tests does not account for the holistic experiences of African American students and the effect of such experience on their academic achievement. Some research findings suggest that African Americans who attend predominantly white institutions have significantly higher levels of social isolation, alienation, personal dissatisfaction, attrition rates, have less satisfactory relationships with faculty and therefore have less overall academic success (Allen Epps, & Haniff, 1991; Fleming, 1984; Loo & Rolison, 1986; Pascarella & Terenzini, 1991; Suen, 1983; Willie & McCord, 1972).

The lack of academic achievement experienced by African Americans attending predominately white institutions is highlighted in Fleming's cross-sectional study of fifteen colleges. Fleming (1984) suggests that the predominantly white environment does not support the intellectual development of African American students. Fleming (1984) noted that African American students at a predominantly white institutions experience an environment of hostility and alienation; therefore, these students have poor academic performance and may even drop out. Fleming (1984) states: "on the most immediate

level, the fact that Black students must matriculate in an atmosphere that feels hostile arouses defensive reactions that interfere with intellectual performance" (p.141).

Research also indicates that those African American students, who stay and succeed at predominantly White institutions, often succeed at the expense of their psychosocial development. Loo and Rolison (1986) suggest that there was more sociocultural alienation among minority students than Caucasian students. This alienation is expressed in the form of ethnic isolation and feelings of cultural domination. Madrazo-Peterson & Rodriguez (1978) found that African American students reported significantly greater feelings of isolation than did either Chicano or Native American students. The faculty and peer-group experiences of African American students coupled with their "perceptions that university and community activities are directed toward White members, in the environment, often result in feelings of anger, frustration, and helplessness" (Madrazo-Peterson & Rodriguez, 1978; p. 262). In addition, Fleming (1984) suggests that personal environment transactions and the related socio-cultural processes of African American students determine their academic success, rather than the traditional factors (i.e., aptitude tests, high school GPA).

Use of Cognitive and Non-Cognitive Variables in Research

Some researchers have combined cognitive and non-cognitive variables when predicting the academic achievement of African American students. The researchers suggest that the non-cognitive variables often enhance the predictive ability of the cognitive by presenting a holistic picture of the student. Nettles, Thoeny and Gosman's (1986) research of 4,000 students from thirty universities examined racial differences in student academic achievement. The study included a total of thirty-one student, faculty,

and institutional variables to predict student academic achievement. A major conclusion of the research was that four variables: SAT scores; student satisfaction; peer group relations; and interfering problems had differential predictive validity on the academic achievement of African American (and Caucasian) students. Their findings indicated that the African American students' academic achievement was over-predicted by their SAT scores (Nettles et al., 1986). Having controlled for feelings of discrimination, minority status and effects of other college experience measures, the researchers explained the over-prediction as a difference in the college experience of African Americans and Caucasian students (Nettles et al., 1986).

The remaining factors of student satisfaction, peer group relations and interfering problems, had a more significant impact on the cumulative college grade point averages of African American students (Nettles et al., 1986). Nettles et al. (1986) suggest that significant racial differences on predictors may also account for the racial differences when predicting college academic performance. For example, African Americans with lower college grade point averages may have had lower high school grade point averages, and lower combined SAT-verbal and SAT-math scores. The researchers concluded that while high school grade point average and total SAT scores were valid predictors for Caucasian students, they were not strong predictors for African American students. Psychosocial and behavioral characteristics can be predictive of college academic achievement for African Americans and should not be ignored.

Combining cognitive and psychosocial variables, Ting and Robinson (1998) studied the academic performance of 2,237 African American (and Caucasian) college freshmen at a southeastern public university. Study variables included four cognitive

variables: high school grade point average; SAT-verbal score; SAT-math score; and total SAT scores as well as thirty-eight psychosocial variables, from the NCQ and First-Year Student Survey, (Ting, 1997) to predict students' grade point averages. Overall, high school grade point average was the most significant predictor for first-year, African Americans' grade point averages. The traditional cognitive variable of SAT-math scores (men) and SAT-total scores (women) were found to be predictive of African American grade point averages. In addition, two psychosocial variables significantly correlated with grade point average: planning for work hours and the father's education. Based on these findings, Ting and Robinson (1998) concluded that:

1. psychosocial experiences based on race, gender, and year in school should be considered along with traditional cognitive measures; and
2. each student group as well as the sub-group (i.e., gender) require a different kind of model for predicting their academic success.

A more detailed account of Ting and Robinson's findings concerning African American women will be presented later in this chapter.

Non-Cognitive Variables and the Academic Achievement of Women at Single-Sex Institutions

The literature on women's colleges does not include research specific to predicting academic achievement. Instead, the majority of the research regarding women's colleges examines whether and how women's colleges impact the educational and occupational aspirations, educational attainment, career achievement, and leadership development of women's college graduates. According to a significant body of literature, women's colleges have demonstrated a positive impact on their women students. Compared to women at coeducational institutions, for example, students at women's

colleges are more satisfied with their overall college experience (Astin 1977; Astin 1993; Smith 1990); are more likely to major in non-traditional fields (Bressler and Wendell 1980; Scheye and Gilroy 1994; Sebrechts 1993; Solnick 1995); and express higher levels of self esteem and leadership skills (Astin 1992; Astin 1977; Kim and Alvarez 1995; Riordan 1992; Smith 1990; Smith, Wolf, and Morrison 1995; Whitt 1994; Whitt 1992) (as cited in Wolf-Wendel, 1999). Further, Harwarth, Maline and DeBra (1997) note that current research studies do not adequately address the experiences of women of color at women's colleges.

The literature suggests that the unique environment of a women's college is more conducive to high levels of persistence, learning and achievement for women (Harwarth, et al., 1997; Tidball and Kistiakowsky, 1976). In his analysis of collegial environments, Astin (1993) suggests that the single-sex environment fosters increased self-esteem, allows for more academic involvement, and overall a more satisfying college experience. Tidball (1989) suggests that in the women's college environment "the values assigned to various tasks and accomplishments [are] not only influenced by women but [are] also established in a context devoid of counterproductive stereotypes" (p. 166). In the absence of counterproductive stereotypes, women students are free to academically excel without fear of being viewed as less feminine (Gilligan, 1982; Tidball, 1984; Tidball & Kistiakowsky, 1976). Research suggests that in a single-sex environment, the student perceptions of the institution are more concentrated on student learning, civic involvement and multiculturalism, which in turn enhances the quality of the student's academic and social experience (Smith, Wolf & Morrison, 1995).

However, studies attempting to assess the specific influence of the women's college environment on achievement have yielded differing results. When controlling for pre-college characteristics, Gruca (1988, as cited in Pascarella & Terenzini, 1991) did not find any statistically significant influence of women's college on educational attainment for either Caucasian or African American women. Stoecker and Pascarella (1991), when controlling for pre-college characteristics found attendance at a women's college had a positive yet not significant influence on educational attainment. However, the *total* positive effect (i.e., direct and indirect) of attending a woman's college on educational attainment was statistically significant (Stoecker and Pascarella, 1991). Whether directly or indirectly, there is evidence to suggest that women's colleges tend to enhance the educational attainment of undergraduate women.

Non-Cognitive Variables and the Academic Achievement of African American Women

When predicting the academic achievement among African American college students, few researchers have considered within-group differences. Instead, much of the research on African American women focuses on racial identity development, black feminist theory, social adjustment, satisfaction with college, or environmental perceptions/fit (Brown, 2000; Constantine & Watt, 2002; Hamilton-Howard, 2003; Illovsky, 1995; Lewis & Hamrick, 2000; Poindexter-Cameron & Robinson, 1997; Stewart, 1971; Wolf-Wendel, 1998; Zamani, 2003). There are three prediction studies of academic achievement of African Americans at predominately white institutions that examined African American women as a sub-group: Gold et al., 1990; Schwartz and Washington, 1999; and Ting and Robinson, 1998.

Gold et al.'s (1990) exploratory study of twenty-nine freshman used the Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1989) to study student adaptation as a predictor of grade point average for African Americans. Specifically, the researchers' found that academic adjustment was a significant predictor of grade point average for African American women. The finding was consistent with the literature on the NCQ. The finding suggests that African American women who are able to successfully cope with the educational demand of college have greater academic success (Gold et al., 1990). Furthermore, the finding suggests that "levels of motivation, application, performance and satisfaction with the academic environment may be related to higher levels of academic success" (Gold et al., 1990; p.15).

Schwartz and Washington (1999) administered a modified version of the NCQ and the SACQ to 213 African American, first-year, female students at a historically black college. Along with two adjustment variables, one sub-scale of the NCQ emerged as significant predictors of academic success among African American first-year, female students. In the study, social adjustment, personal emotional adjustment and the NCQ sub-scale, "Availability of a Strong Support Person", were predictive of the academic success of first-year, African American female students. The academic success of African American women is dependent upon their ability to adjust to the academic environment as well as have an adequate support system (Schwartz & Washington, 1999).This finding was consistent with literature on the NCQ and Tinto's integration model.

Ting and Robinson (1998) investigated the effectiveness of cognitive and psychosocial variables in predicting the first-year grade point averages of African

American and Caucasian students. When data was disaggregated by gender and ethnicity, important differences were revealed. The variances of the prediction models for fall grade point averages varied between 8% and 29%: 25.2% for Caucasian female students, 18.3% for Caucasian male students and 29% for African American male students. Among 122 African American women, high school grade point average and the father's education explained 8% of their fall grade point average (Ting & Robinson, 1998). In the spring, 17.4% of African American women's grade point average was explained by the SAT-total scores and planning for work hours (Ting & Robinson, 1998). While the NCQ sub-scale, "Positive Self-Concept", emerged as a significant predictor for African American males, none of the NCQ sub-scales were predictive of the academic achievement of African American women. Ting and Robinson (1998) suggest that the low prediction of the regression analysis was an indication that the influence of gender and race required another means of predicting the academic achievement for African American women. In addition, Ting and Robinson (1998) indicate the need for further research into the predictive ability of factors such as campus climate and the development of race-and gender role identity on the academic achievement of African American women.

Use of the NCQ in Research

The relationship of non-cognitive variables, as measured solely by the NCQ, is explored in six studies; two which also examine the academic achievement of women. The initial study was conducted by Tracey and Sedlacek, (1984a, 1987). Tracey and Sedlacek (1984a, 1985, 1987, & 1989) found that the NCQ was content-valid and was more predictive of first and third-semester grade point averages for African American

students than were SAT scores. In addition, the NCQ was highly predictive of African American students' persistence after three semesters (Tracey & Sedlacek, 1984a). "Positive Self-Concept" and "Realistic Self-Appraisal" were significantly related to the college grades of African American students (Tracey & Sedlacek, 1984a). The "Availability of a Strong Support Person" and "Community Service" was also significantly related to the continued enrollment of African American students (Tracey & Sedlacek, 1984a). This initial study established the reliability and validity of the NCQ to a predictor of academic achievement for non-traditional groups as a whole and African Americans in particular.

In another study, conducted by Boyer and Sedlacek (1988), the NCQ was shown to predict the academic achievement and retention for international students. The NCQ was administered to 105 international students during freshman orientation. The NCQ sub-scales, "Self-Confidence" and "Availability of a strong support person", were shown to consistently predict achievement for all semesters (Boyer and Sedlacek, 1988). In addition, community service and strength of understanding racism were significant to the persistence if international students. In comparison to U.S. African American and Caucasian students (self-confidence and realistic self-appraisal were consistently significant across all semesters), living in a foreign land with different beliefs and customs, makes it difficult to self appraise so the availability of a strong support person supercedes in predicting academic achievement (Boyer and Sedlacek, 1988).

Sedlacek and Adams-Gaston (1992) used the NCQ to predict the academic achievement of student athletes. The authors categorized student athletes as non-traditional because this group of students has "a unique culture and set of experiences in

life that differentiated them from others" (Sowa & Gressard, 1983 as cited in Sedlacek and Adams-Gaston, 1992). At a large, Division I university in the eastern United States, the NCQ was completed by 105 student-athletes. Their research indicated that non-cognitive variables (as measured by the NCQ) were better predictors than are SAT scores. Three non-cognitive variables, strong support person, demonstrated community involvement and positive self-concept, combined in predicting first-semester grades ($p<.05$) (Sedlacek and Adams-Gaston, 1992). Research implications were that college professionals working with student-athletes should acknowledge the context and culture in which the student-athlete operates and its affect on his/her academic achievement. Non-cognitive variables can assist in a better understanding and appreciation which in turn will allow for better preparation for collegial academic success of student-athletes.

Over a 10-year period, Fuertes, Sedlacek and Lui (1994) randomly administered the NCQ to Asian American students at a large, predominantly White northeastern university. The study findings indicated that as with other non-traditional students, non-cognitive variables were important to the academic achievement of Asian American students. The NCQ variables self-concept, realist self-appraisal, and community service were related to grade point averages in semesters 1, 3, and 5 (Fuertes et al., 1994). The authors concluded that for the Asian American student, these non-cognitive variables were interconnected. For example, "Demonstrated Community Service" appears to embody the strong value of Asian American cultures; which many explain why Asian American students scored high on the non-cognitive variable, self-concept (Fuertes et al., 1994).

Ting (2000) also used the NCQ to predict the grade point averages and persistence of first-year, Asian American students at a research university in the Southeast. His results were consistent to those of Fuertes et al. (1994). The multiple regression models explained 26.2% in the variance of the fall grade point averages (Ting 2000). "Realistic Self-Appraisal" and "Successful Leadership Experience" emerged as significant predictors. In the spring, the regression model accounted for 31.3% of the variance with "Realistic Self-Appraisal" and "Demonstrated Community Service" as significant predictors (Ting, 2000). For Asian American student retention, "Realistic Self-Appraisal" and "Demonstrated Community Services" were significant indicators for fall student retention. None of the non-cognitive variables explained spring retention for Asian American students (Ting, 2000).

The NCQ was used by Ancis and Sedlacek (1997) in a longitudinal study with SAT to predict the academic achievement of women. Ancis and Sedlacek (1997) administered the NCQ to a random sample of first-year, female students at a large, mid-Atlantic university, over a ten-year period. The study results indicated that both SAT verbal and SAT math scores were predictive of academic achievement among female college students; however, non-cognitive variables were also predictive of women's academic achievement. Among the NCQ sub-scales that emerged as significant predictors of academic achievement were "Demonstrated Community Service", "Nontraditional Knowledge", "Realistic Self-Appraisal", and "Leadership Experience". "Demonstrated Community Service", emerged as strong predictor in semesters 1, 3, 5 and 7; while "Successful Leadership" and "Availability of a Strong Support Person" were significant predictors in semesters 5 and 7 respectively (Ancis & Sedlacek, 1997). While

the researchers acknowledge the ability of the SAT to predict academic achievement of women, they also acknowledge the test's ability to under-predict women's academic achievement. Their research implied that the inclusion of non-cognitive variables provided a more accurate understanding of the academic achievement of women (Ancis & Sedlacek, 1997). In addition, the authors suggested that continued reliance on the SAT may limit the educational opportunities afforded to women (Ancis & Sedlacek, 1997).

In summary, academic literature has a significant amount of research on the role of cognitive and non-cognitive variables in predicting the academic achievement for African American students. However, the majority of the research was conducted at mid-size to large, public, co-educational institutions. Further, there is no direct literature on predicting academic achievement for African American women at women's colleges. Research on women's colleges alludes to the environmental effect of a single-sex institution on academic achievement. Those research studies that have examined the academic achievement of African American women suggest the important effects of non-cognitive factors such as race and gender on academic achievement. This research study constituted a first step in combining these theories as it focused on identifying non-cognitive predictors of academic achievement for African American women at predominantly white women's colleges.

CHAPTER III
METHODOLOGY

The study examined the significance of the Non-Cognitive Questionnaire (NCQ) and the SAT at predicting the academic achievement of African American women at two predominantly white women's colleges. The NCQ provided a quantitative measure for non-cognitive variables related to academic achievement. The NCQ sub-scores and the SAT-Math and SAT-Verbal scores were the independent variables. The fall semester grade point average represented academic achievement as the dependent variable. The study was designed to answer the following research question: Can the NCQ more accurately predict the first semester grade point averages of first-year, African American women at two predominantly White women's colleges than can the SAT? This chapter presents the research methodology that was used to answer the question. Specifically, the chapter presents: sample site characteristics; sample selection procedures; the Instrument: Non-Cognitive Questionnaire; data collection procedures; and data analysis procedures.

Sample Site Characteristics

The sample sites for the study were two predominantly white, liberal arts, women's institutions located in the southeastern United States. Historically, each institution was loosely affiliated with a Protestant denomination. Each institution has as a part of its mission the creation of a community where young women can live and learn in an environment specifically geared to their education. As liberal arts institutions, each provides a rigorous academic program including courses in the humanities, the natural and social sciences, and the fine arts. In addition, each institution has a signature program that seeks to identify and cultivate campus leaders and scholars. Both institutions require students under 23 years of age to live either on campus or at home with their families.

Institution A is an independent, comprehensive, four-year, private, liberal arts college. The degree-seeking undergraduate enrollment in 2003-2004 was 1790, with 7.5% (n = 134) of its undergraduate population identified as African American. In 2004-2005, the degree-seeking undergraduate population was 1807 with 9.4% (n = 170) of the undergraduates identified as African American.

Institution B is an independent, four-year, private, liberal arts college. The degree-seeking undergraduate enrollment in 2003-2004 was 861, with African Americans comprising 19.9% (n = 171) of the undergraduate population. In 2004-2005, the degree-seeking undergraduate population was 858 with 19.5% (n = 167) of that population identified as African American.

Sample Selection Procedures

The population sample was drawn from two predominantly white women's colleges located in the southeastern part of the United States. I began the sample process by contacting the Dean in the Office of Research and Planning for Institution A and the Associate Dean of Academic Affairs for Institution B. With the assistance of these administrators and in conjunction with a student affairs professional, all first-year, African American students were invited to attend an on-campus research session and complete the questionnaire. Through each institutional contact, I was assigned a time and location to administer the questionnaire. Each institution hosted two on-campus research sessions during each academic school year (2003-2004; 2004-2005).

Instrument: Non-Cognitive Questionnaire

The Non-Cognitive Questionnaire (NCQ) is a two-page, paper and pencil instrument designed to assess the psychosocial aspects that affect student success in college. The questionnaire consists of 29 total items. The NCQ was designed to measure those

attributes common to persons with nontraditional experiences and those not typically measured by traditional instruments (Sedlacek, 2003, 2004). Specifically, the NCQ was designed to assess eight non-cognitive variables: 1) Positive Self–Concept or Confidence; 2) Realistic Self-Appraisal; 3) Understanding of and Ability to Deal with Racism; 4) Preference for Long-Range Goals rather than Short-term Goals; 5) Availability of a Strong Support Person; 6) Successful Leadership Experience; 7) Demonstrated Community Service; and 8) Knowledge Acquired in a Field or Academic Familiarity.

The first six items of the NCQ address demographic information such as age, race and parental occupation. Two nominal items assess the respondent's educational aspirations along with three open-ended questions that focus on the respondent's present goals, past accomplishments and involvement in community and leadership activities (Tracey & Sedlacek, 1984a & 1987). The remaining 18 items focus on educational expectations and self-assessments, using a Likert-type scale.

How to Score the Non-Cognitive Questionnaire

The Non-Cognitive Questionnaire was scored based on the scoring key developed by Tracey & Sedlacek (1984a, 1984b, 1985). A copy of the scoring key can be found in Appendix B. In order to increase the scoring accuracy of the questionnaire, I received training from Dr. Siu-Man Raymond Ting, Associate Professor and Director of Graduate Programs at North Carolina State University. Dr. Ting has made extensive use of the instrument in his own research and has conducted several studies with Dr. Sedlacek, who developed the NCQ.

The questionnaire items are grouped to form the eight non-cognitive sub-scales of the NCQ. Respondents receive a score on the sub-scales based on their responses. "Positive self-concept or confidence" is scored by grouping items 7, 9, 10, 20, 23 and 28. Realistic self-appraisal is scored by grouping items 9, 12 and 21. "Understands and deals with racism" sub-score is achieved with the item scores from 11, 18, 22, 26, and 27. Scores for items 8A, 13 and 9 are used to assess "Prefers long range goals to short range or immediate needs". "Availability of strong support person" is scored by grouping items 15, 24, and 25. The sub-scale "Successful leadership experience" is attained from the scores of item 14, 17, and 29A. "Demonstrated community service" sub-scale is achieved from the scores of item 16 and 29B. "Knowledge acquired in a field or academic familiarity" is assessed by grouping the scores from item 8B and 29C.

Scores for the NCQ sub-scales are calculated based on algorithms found in the scoring key. Each questionnaire item is assigned a numerical value. The maximum score in the Likert-type scale questionnaire item is five. The maximum score given to an open-ended questionnaire item is three. However, if a question has more than one answer, the scorer is to find the mean of each dimension and round to the nearest whole number. A high score demonstrates an understanding of the cognitive area as well as exhibited performance in the area. Low sub-scale scorers exhibit little or no evidence of understanding or performance in the cognitive area. For example, low scoring students in the sub-scale area, "Realistic Self-Appraisal", are unsure about how evaluations are conducted at the institution and tend to overreact to any type of reinforcement rather than seeing it in a larger context (Sedlacek, 2004).

Table 1. Lowest and Highest Scores of the Non-Cognitive Scales

Possible Scale Scores	Lowest	Highest
Positive Self-Concept	7	27
Realistic Self-Appraisal	4	14
Understands and Deals with Racism	5	25
Prefers Long-Range Goals	3	13
Availability of a Strong Support Person	3	15
Leadership Experience	3	13
Demonstrated Community Service	2	8
Knowledge Acquired in a Field	2	8

(Sedlacek, 2004)

Table 1 presents the lowest and highest possible scores that can be received on the eight NCQ sub-scales. A complete profile of high and low scorers can be found in Appendix C.

Reliability and Validity of the NCQ

In order to establish the NCQ's reliability, construct validity and predictive validity, Tracey and Sedlacek (1984a) distributed the NCQ to a sample of 1,529 incoming freshmen at a large public university. The sample included 1,339 Caucasian students and 190 African American students. Tracey and Sedlacek (1984a) used principal component factor analysis to establish the construct validity of the NCQ as well as the validity of the NCQ as a predictor of academic achievement for African Americans and Caucasians. Construct validity was supported for six of the seven non-cognitive variables suggested by Sedlacek and Brooks (1976). These variance numbers indicated the impact of the independent variable while other variables in the equation were held constant. According to Tracey and Sedlacek (1984a), as designed, the NCQ items clustered along the seven non-cognitive variables. Table 2 is an illustration of the common variance of the 7 NCQ factors.

Table 2. Common Variance of 7 NCQ Factors

Factor	Common Variance
Successful Leadership Experience	32.8%
Understanding of and Ability to Deal with Racism	13.9%
Preference for Long Range Goals over Short-term Goals	13.5%
Realistic Self-Appraisal	10.9%
Availability of a Strong Support Person	9.1%
Positive self–concept or confidence	7.7% and 6.5%
Academic Familiarity	5.6%

(Tracey & Sedlacek, 1984a)

The predictive validity of the NCQ and SAT scores on student grade point average was examined using a stepwise multiple regression (Tracey & Sedlacek, 1984a). The NCQ items were either very similar or more highly predictive of the criteria examined (i.e., first semester GPA, three-semester cumulative GPA or enrollment status) than were the SAT scores alone for Caucasians and African American students (Tracey & Sedlacek, 1984a). The use of the NCQ items enhanced the researcher's ability to predict the academic success of African American and Caucasian students (Tracey & Sedlacek, 1984a). When non-cognitive variables were related to first-semester grades, the same two variables emerged for each racial group: positive self-concept and realistic self-appraisal (see Table 3). Positive self-concept and realistic self-appraisal were found to be predictive of first-semester grade point averages for both African American and Caucasian students (Tracey and Sedlacek, 1984).

The predictive validity of the NCQ and SAT scores related to persistence was examined using stepwise discriminant analysis (Tracey & Sedlacek, 1984a). Persistence was measured using an analysis of NCQ items in relation to the enrollment status of the

Table 3. NCQ Items Significant for African Americans and Caucasians

Questionnaire Items	**Regressions on first semester GPA**		**Regressions on first semester GPA**	
	1980 sample		*1979 sample*	
	White n = 355	*Blacks n = 89*	*Whites n = 1339*	*Blacks n = 190*
3. List 3 things that you are proud of having done.	.19	.28		
8. When I believe strongly in something I act on it.			.08	.10
11. People can pretty easily change me even though I thought my mind was made up on the subject.				-.17
12. I want a chance to prove myself academically.			-.06	
13. My high school grades don't reflect what I can do.	.34	.21	.31	

(Tracey and Sedlacek, 1984a)

students. This analysis revealed a strong relationship between the non-cognitive variables and the persistence of the sub-sample of African American students. To illustrate, (a) realistic self appraisal (.53); (b) positive self-concept (-.43/-.38); (c) support (-.52); and (d) community involvement (-.35) were significantly related to the continued enrollment of African American students (Tracey & Sedlacek, 1984a).

Based on their findings, Tracey and Sedlacek (1984a) concluded:

1. The NCQ had adequate reliability and construct validity;

2. With regard to subsequent college grades, the NCQ was found to have good predictive validity for both Black and White student sub-samples. This was true when the NCQ was used alone and when it was used in conjunction with SAT scores.

3. With regard to college persistence, the NCQ was found to have high predictive validity for the African American students only, SAT scores were not found to be predictive of persistence for any racial group (p.177).

Tracey and Sedlacek (1984a) examined the NCQ's test-retest reliability. They reported a two-week, test-retest correlation for the nominal and Likert-type items ranging from .70 to .94 with a median of .85. The open-ended questionnaire items reported an interrater reliability ranging from .83 to 1.00. In addition, researchers have used Tracey and Sedlacek's model and found the NCQ to be effective in predicting the academic achievement across student populations (i.e., African Americans and Caucasians, Ting & Robinson, 1998 and Tracey & Sedlacek, 1985, 1989; Hispanics, Fuertes & Sedlacek, 1993; African American women, Schwartz & Washington, 1999; Asian Americans, Fuertes et al, 1994 and Ting, 2000; Women, Ancis & Sedlacek, 1997; First Generation and Low Income students, Ting, 1998; and International students, Boyer and Sedlacek, 1988).

Data Collection

Prior to data collection, each institution agreed to be a site and granted permission for its students to voluntarily participate in the study. Each institution's letter of permission was attached to my Form B, Review of Research Involving Human Subjects application, and submitted to the Institutional Review Board. Once IRB approval was received, the participating institutions were contacted in order to schedule an on-campus research session.

During both the 2003-2004 and 2004-2005 academic year, first-year, African American students received a written invitation to attend an on-campus session at which they could learn about and participate in the research study. A copy of the invitation can be found in Appendix D. Invitations and reminder calls were coordinated by an on-campus contact at each institution.

I conducted the on-campus research sessions which ranged from 40 minutes to 90 minutes, with the test time for the NCQ being approximately 25 minutes. I conducted two research sessions, per school, per academic year. At the beginning of the session, I explained the nature of the research and the NCQ. Students were informed that their participation in the project was voluntary and that they could cease to participate without penalty. After discussing the project and providing assurances of anonymity and confidentiality, I allowed time for students to ask questions about the research project and procedures. After the question and answer session, those students wishing not to participate were thanked for attending the session and asked to leave before the NCQ was distributed. Those students who remained in the session, received two copies of the Informed Consent Form (see Appendix E). One copy of the form was for the student to keep for her records. When one Informed Consent form had been signed and returned, the student received the NCQ. In an effort to maintain anonymity, participants were asked to place the last six digits of their social security numbers or their student identification number on the survey. Participants were informed that I would be unable to link their names with social security numbers, student identification numbers and/or academic information. When they completed the questionnaire, participants placed them in a sealed box located at the back of the room.

In addition, in an effort to include more African American women in the research, those students who did not attend either research session received a research packet, which included the letter of invitation, Informed Consent (2 copies), the NCQ and a self-addressed, self-stamped envelope. This was sent through campus mail by the student affairs liaison at each Institution. However, none of the questionnaires were returned.

After completion of the sessions, I verified that each questionnaire was completed. From the questionnaires a list of students' social security numbers and a list of student identification numbers were generated. Next, I created a data sheet with columns for the student identification number or social security number, as well as for the fall grade point average, SAT-Verbal and SAT-Math scores. Along with copies of the Informed Consent, the data sheet was submitted to the college contact at each research site. All questionnaires were counted and stored in a secured file box. Thirty-five NCQ questionnaires were completed.

Scoring the Non-Cognitive Questionnaire

While waiting for grade point averages and SAT score data, questionnaires were scored. Each questionnaire was scored based on the scoring key developed by Tracey and Sedlacek (1984). A copy of the scoring key can be found in Appendix B. Upon the suggestion of Dr. Ting, I trained another person to score the three open-ended items of NCQ, in order to increase scoring credibility. The second scorer, a student affairs professional at a mid-size Midwestern university, has a Masters degree in College Student Personnel.

As instructed by Dr. Ting, we each scored one-half of the questionnaires for each institution. We then compared those scores to ensure scoring was some-what consistent. After the initial comparison, we scored the remaining questionnaires. After all questionnaires were scored, I compared scoring sheets. When differences were found, the second scorer and I conferred over the differences. Through discussion, we were able to reach a consensus for any participant's open-ended item for which there was a conflicting score.

Data Analysis Procedures

Participants' item scores were entered into an excel spreadsheet. Item data were grouped together as well as separated by institution and academic year. Next, I entered the algorithms into the spreadsheet in order to calculate the participant's NCQ sub-scale scores. Using the Statistical Package for Social Science version 13.0, the NCQ sub-scale data were transferred into an SPSS data sheet. With this phase of data entry complete, the file was saved and stored for future analysis. When participants' fall grade point averages and SAT scores were received from the institutions, the data were entered into the SPSS file. Those students who did not have a fall GPA or SAT scores were excluded from the final analysis. Thirty-five students completed the NCQ and four were excluded because they did not have SAT scores. Therefore, thirty-one female students comprised the final study sample.

Typically, a researcher would like to have ten cases for every factor (10:1). The NCQ has 8 factors which would translate into 80 cases. However, given the small number of African American women attending predominantly White women's colleges, it is difficult to obtain 80 cases. For example, in the 2003-2004 academic year, Institution A and B had a combined total of 38 first-year, first-time African American undergraduate women. In addition, researchers have noted the challenges involved in attempting to assess minority women who attend women's colleges. For example, Langdon (1999) noted that many minority women tend to shy away from participating in surveys and studies, and such actions skew a researcher's sample. In an e-mail with Dr. Sedlacek, regarding the study's sample size, he noted that another type of racism occurs in the literature because researchers do not study people of color at institutions such as

women's colleges because of the small number. Dr. Sedlacek acknowledged the small sample, but noted the importance of the research and suggested my data analysis include performing a zero-order correlation; hierarchical multiple regression, and have a significance level of .05.

Therefore, given the sample size, I began my data analysis by conducting a zero-order correlation with the eight NCQ sub-scales and fall grade point averages. This would allow for the establishment of a relationship between two variables while ignoring the influence of other variables in the prediction. Only the NCQ sub-scales that were statistically significant were used in the hierarchical regression.

Once significant sub-scales were identified, hierarchical multiple regression analysis, using SPSS, was employed. This technique was selected at the suggestion of the NCQ developer, Dr. William Sedlacek because of the study's modest sample size (n = 31). Hierarchical multiple regression allows the researcher to determine the order of entry of the variables based on a certain statistical criterion. The zero-order correlation provided the statistical criteria. The predictor with the greatest amount of variance of Y was entered first followed by the next highest. In addition, multiple regression is the standard statistical method most often used to predict college academic achievement (Hardesty, 1980; Tracey, Sedlacek & Miars, 1983). Multiple regression has been used in several studies predicting academic achievement: (Ancis and Sedlacek, 1997; Arbona and Novy, 1990; Boyer and Sedlacek, 1998; Fuertes, Sedlacek and Lui, 1994; Kanoy, Wester and Lattia, 1989; Schwartz and Washington, 1999; Sedlacek and Adams-Gaston, 1992; Ting, 1998; Ting, 2000; Ting and Robinson, 1998; and Tracey and Sedlacek, 1985).

The data analysis identified which variables and/or combination of variables (i.e., cognitive and/or non-cognitive) predicted the academic achievement of African American women at two predominantly white women's colleges. However, only those variables that were significantly related to the prediction of academic achievement for African American females were included in the findings. Chapter Four presents the study's findings.

CHAPTER IV
FINDINGS

The chapter provides a summary of the study findings. First, the purpose of the study will be reviewed. Second, a description of the study sample will be presented. Finally, the chapter will present the data analysis.

The purpose of the study was to determine if the NCQ could more accurately predict the grade point averages of first-year, African American women at two predominately White women's colleges than could the SAT. The dependent variable was fall grade point average. The NCQ sub-scales, SAT-math scores and SAT-verbal scores, served as the predictor variables.

Sample Description

The sample used in the study was composed of thirty-one, first-year African American women at two predominately White women's colleges. The NCQ was distributed at on-campus research sessions at each participating institution. Thirty-five African American women completed the NCQ. However, four of those students were removed from the sample when it was determined that the university did not have SAT scores. After their removal, thirty-one African American women composed the analyzed sample. Table 4 illustrates the analyzed sample.

Table 4. Analyzed Sample

	2003-2004		2004-2005	
	Institution A	**Institution B**	**Institution A**	**Institution B**
Analyzed Sample	9	7	9	6
First-year, first time African American undergraduates	16	22	42	25

Table 5. Means and Standard Deviation of Predictors and Criteria Variables

Variable	All Students	
	Mean	**Standard Deviation**
SAT – verbal score	494.84	67.866
SAT – math score	468.71	65.204
Fall grade point average	2.512	.8737
Positive self-concept	17.16	2.162
Realistic self-appraisal	7.74	1.807
Understanding of and Ability to Deal with Racism Understand	10.77	2.729
Preference for Long Range Goals over Short-term Goals	6.87	1.648
Availability of a strong support person	7.77	1.668
Successful leadership experience	6.94	1.263
Demonstrate community service	5.74	1.154
Acquired knowledge in a field	3.90	.700

Note. Number of students in fall = 31

Data Analysis

Before data analysis began, I added the SAT-verbal and SAT-math scores as well as fall grade point averages to the SPSS file of participant NCQ sub-scale scores. Table 5 shows the means and standard deviations of the predictor and criteria variables for all students. The means of NCQ sub-scores for the study were smaller than the means in previous NCQ studies (Sedlacek, 2004; Ting & Robinson, 1998).

Given the modest number of participants, Drs. Sedlacek and Ting suggested that I begin data analysis by running a zero-order correlation. This would allow for the assessment of those variables significant to fall grade point average. Table 6 illustrates the correlation between first-semester grade point average and the predictor variables, for all students. Only those variables statistically significant to fall grade point average were

Table 6. Correlation Coefficients between Fall Grade Point Average and Predictor Variables (All Students)

Variable	Fall grade Point average
Positive self-concept	.072
Realistic self-appraisal	.017
Understanding of and Ability to Deal with Racism Understand	.232
Preference for Long Range Goals over Short-term Goals	.257
Availability of a strong support person	.270
Successful leadership experience	.210
Demonstrate community service	.380*
Acquired knowledge in a field	-.256

*p < .05 (2-tailed)

Table 7. Multiple Regression Model Predicting Fall Grade Point Averages

Variable	B	Std. Error	Standardized Beta	*t*	*Sig*
Community Service	.288	.130	.380	2.210	.035

Note: F = 4.884

included in the hierarchical regression. "Demonstrated Community Service" was the only NCQ sub-scale that was statistically significant to the fall grade point averages of African American women. An alpha of .05 was used for this and all other analyses.

Table 7 represents the prediction model for fall grade point average. In the hierarchical regression model, only "Demonstrated Community Service" emerged as a significant predictor. According to the model, R^2 was .144, meaning that 14.4% of the common variance in fall grade point average was predicted by "Demonstrated Community Service". SAT-verbal and SAT-math scores were excluded from the regression model; neither score offered any significant explanatory value for predicting

Table 8. Means and Standard Deviation of Predictor and Criteria Variables, by Institution

	Institution A		Institution B	
	Mean	**SD**	**Mean**	**SD**
SAT – Verbal score	494.44	62.424	495.38	77.418
SAT – Math score	483.33	71.538	448.46	51.128
Fall grade point average	2.351	.8728	2.734	.8586
Positive self-concept	17.17	1.948	17.15	2.512
Realistic self-appraisal	7.83	2.203	7.62	1.121
Understanding of and Ability to Deal with Racism Understand	10.50	2.995	11.15	2.375
Preference for Long Range Goals over Short-term Goals	6.89	1.605	6.85	1.772
Availability of a strong support person	7.28	1.127	8.46	2.06
Successful leadership experience	6.83	1.425	7.08	1.038
Demonstrate community service	5.83	1.383	5.62	.768
Acquired knowledge in a field	3.83	.786	4.00	.577

Note. n for Institution A = 18; n for Institution B = 13

fall grade point averages for African American women. Based on the multiple regression analysis, the predictive equation that emerged from the results is:

$$GPA = .861 + (.288)\ (DCS)$$

Next, data were analyzed by institution. Table 8 shows the means and standard deviations for predictor and criteria variables by institution. The mean scores are similar to the mean scores for all students and remained smaller than mean scores observed in previous studies using the NCQ (Sedlacek, 2004; Ting & Robinson, 1998).

The NCQ sub-scores did not correlate with fall grade point average for Institution B; therefore no regression model is presented for that institution. For Institution A, "Preference for Long Range Goals over Short-term Goals" and "Demonstrated Community Service" were statistically significant to fall grade point

Table 9. Correlation Coefficients between Fall Grade Point Average and Predictor Variables (Institution A only)

Variable	Fall grade point average
Positive self-concept	.322
Realistic self-appraisal	.003
Understanding of and Ability to Deal with Racism Understand	.219
Preference for Long Range Goals over Short-term Goals	.564*
Availability of a strong support person	.129
Successful leadership experience	.152
Demonstrate community service	.508*
Acquired knowledge in a field	-.168

*p < .05 (2-tailed)

Table 10. Multiple Regression Model Predicting Fall Grade Point Averages (Institution A only)

Variable	B	Std. Error	Standardized Beta	*T*	*Sig*
Preference for Long Range Goals over Short-term Goals	.307	.112	.564	2.731	.015

Note: F = 7.458

average. Table 9 represents the correlation between first-semester grade point average and the predictor variables, for Institution A only. These variables were included with SAT-verbal and SAT-math scores in the hierarchical multiple regression.

Table10 presents the prediction model for fall grade point averages of African American women at Institution A. "Preference for Long Range Goals over Short-term Goals" emerged as the only significant predictor. "Preference for Long Range Goals over Short-term Goals" explained 31.8% of the common variance in fall grade point average. The NCQ sub-scale "Demonstrated Community service", SAT-Verbal and SAT-Math scores were excluded from the regression equation. This means that these variables were

not statistically significant for predicting the fall grade point averages of African American women. Based on the multiple regression analysis, the predictive equation that emerged from the results is:

$$GPA = .239 + (.307)\ (LRG)$$

These findings and their implications for future research will be discussed in Chapter Five.

CHAPTER V
IMPLICATIONS

The purpose of the study was to determine if the Non-Cognitive Questionnaire (NCQ) could more accurately predict the academic achievement of first-year, African American women at two predominantly white women's colleges than could the SAT. Each participant's first semester grade point average was used as the dependent variable. The SAT-math score, the SAT-verbal score and the NCQ sub-scales represented the predictor or independent variables. A hierarchal multiple regression, determined the contributions of each NCQ scale score, the SAT-math score, and the SAT-verbal score in explaining the common variance in first-year, African American women's first semester grade point averages. The data are presented in aggregate form.

The chapter provides the findings of the study, differences between these findings and those discussed in the literature on the NCQ, research issues that emerged from the study, and the implications of the study findings for future research.

Findings

There were three findings of the study. First, "Demonstrated Community Service" was the only NCQ scale to emerge as a predictor variable for the first semester grade point averages of all students. Second, neither the SAT-verbal score nor SAT-math score were significant predictors of first semester grade point average. The final finding of the study was the low ability of the NCQ to predict the common variance of first semester, grade point averages for African American women.

This was an exploratory study to define the NCQ variables specific to the academic achievement of African American women in a particular environment. The only NCQ sub-scale that emerged as a predictor was "Demonstrated Community

Service". Having a community with which they can identify and from which they can receive support is fundamental to the academic achievement of students of color and women (Sedlacek, 2004). Several studies have indicated "Demonstrated Community Service" as a strong predictor of academic success for African American students and women (Allen, 1992; Ancis & Sedlacek, 1997; Kim & Sedlacek, 1995; Tracey & Sedlacek, 1984, 1985, 1987). "Demonstrated Community Service" is a reflection of the ability of the African American woman to possess a sense of belonging and to establish a link to the larger community. For African American women, involvement in extracurricular activities such as residence hall organizations, academic, social and religious groups, provide them with a cultural community (Kim & Sedlacek, 1995). African American women who are active in the community learn how to handle the system, exhibit leadership and develop their self-concepts (Sedlacek, 2004). This in turn allows them to better their collegial adjustment as well as accomplish their academic goals.

The absence of the SAT-verbal and SAT-math scores as predictors in the study was another finding. Ancis and Sedlacek's (1997) results indicated that both SAT-verbal and SAT-math scores were predictive of academic achievement among female college students. However, when Ting and Robinson (1998) disaggregated their study data by gender and race, the traditional cognitive variables, SAT-verbal and SAT-math scores were not significant predictors of African American women's academic achievement. Ting and Robinson (1998) did find a low predictive value for the total SAT scores on the spring grade point averages of African American women. They suggested that different kinds of models are needed for particular college groups (Ting & Robinson, 1998). In

addition, Sedlacek (2004) suggests that sampling bias and self-concept issues related to taking tests can contribute to the less than accurate predictions of the SAT.

The final finding of the study was the low predictive ability of the NCQ on the first semester academic success of African American women. There is evidence that the NCQ sub-scales can predict the academic achievement of African American students (Sedlacek, 1989, 1991, 1993, 1996, 1999; Tracey & Sedlacek, 1984a, 1984b, 1985, 1987, 1988, 1989). In the initial study by Tracey and Sedlacek (1984a), the NCQ sub-scales, "Positive Self-Concept" and "Realistic Self-Appraisal", were significantly related to the college grades of African American students. However, when Ting and Robinson (1998) administered the NCQ and data were disaggregated, the NCQ was not a predictor of academic achievement for African American women. The within-group differences among African American males and females suggest that additional information may be needed concerning predictors of academic achievement for African Americans.

In this study, neither the NCQ sub-scales nor the individual SAT scores were statistically significant predictors of academic achievement for African American women. The lack of either predictor to be significant was not surprising. Research by Ting and Robinson (1998) suggests that additional factors such as campus climate and the development of race-and-gender-role identity might be greater predictors of the academic success of African American women.

Study Differences

Given the difference between the findings of the study and the research literature on the NCQ, the more important implications of the study may be related to understanding those research differences. The study findings differed from research

literature on the NCQ in three areas: (a) length of study; (b) population; and (c) campus environment.

Length of Study

One explanation for the differences between this study's findings and the literature on the NCQ may be the length of study. Though this was a two-year study, it focused specifically on the first-semester grade point averages of first-year African American women. Ancis and Sedlacek (1997) collected data over a ten-year period. Thus, they were able to present predictive data for the NCQ over a several semesters. For example, "Demonstrated Community Service", emerged as strong predictor in semesters 1, 3, 5 and 7; while "Successful Leadership" and "Availability of a Strong Support Person" were significant predictors in semesters 5 and 7 respectively (Ancis & Sedlacek, 1997). Tracey and Sedlacek (1997) administered the NCQ to two cohorts in 1979 and 1980 and collected cohort data over 5 and 6 years, respectively. Therefore, it is possible that the finding of only one NCQ predictor may have been related to the length of the current study.

Population

The population may also account for the difference in research findings. The NCQ has been determined to be a valid predictor of academic achievement for African Americans and women (Ancis & Sedlacek, 1997; Tracey & Sedlacek, 1984a, 1884b). However, these studies were conducted on African Americans and women in co-educational institutions. Predicting the academic achievement of African American women at predominantly White women's colleges may differ from predicting academic achievement for the general population of African Americans and women. The low predictive ability of the NCQ for African American women's academic achievement

suggested to Ting and Robinson (1998) that a predictive model exclusive to each group and sub-group was needed. Perhaps because in this study the data in the study were disaggregated by race and ethnicity, the NCQ proved to have a low predictive ability for African American women.

Campus Environment

Along with the dynamic of a women's college population, the campus environment may account for the differences in research findings. The NCQ has been most effective when used with the SAT in predicting the academic achievement of students who experience inequalities in a university environment (Ancis & Sedlacek, 1997; Arbona & Novy, 1989; Boyer & Sedlacek, 1988; Fuertes & Sedlacek, 1995; Sedlacek & Adams-Gaston, 1992; Schwartz & Washington, 1999; Ting, 2000; Tracey & Sedlacek, 1985, 1989). However, Wolf-Wendel's (1999) research suggests that women at women's colleges were more likely than women at coeducational institutions to believe that their institution cared about issues such as diversity, civic involvement, and gender equity. When Langdon (1999) analyzed two data sets from the Cooperative Institutional Research Program, she found that women who attend women's colleges were more satisfied with their classroom experience, campus facilities and services, and campus climate than their counterparts at co-educational institutions. Perhaps the reason the NCQ did not prove to be a more significant predictor in the study was because the African American women may not have perceived any inequalities in their campus environment.

Research Issues that Emerged

The study possessed methodological limitations. First, the study sample was based on two institutions and the sample size was small for multiple analyses. The

multiple regression and small sample size increased the risk of a Type II error. However, a zero-order correlation was conducted before multiple analyses in order to identify statistically significant predictors. Only those predictors with statistical significance were entered into the hierarchical multiple regression. In addition, the alpha for all analyses was .05. In future research, a larger sample size and inclusion of additional institutions would be necessary to examine the validity of the current research.

A second limitation related to the use of the first semester grade point averages of first-year, first-time African American women. While first-year achievement is predictive of future academic success, longer-term predictions are important in the context of non-traditional students (i.e. students of color and women) (Sedlacek, 2004). Students of color and women tend to require a longer adjustment period to the collegial environment; therefore, their true abilities are not reflected until later in their curriculum (Neville, Heppner & Wang, 1997 van Rossum, 2002 as cited in Sedlacek, 2004). Considering the need for a longer adjustment period, future research on predictors of academic achievement for African American women might look beyond their first-year academic achievement.

Implications for Future Research

Given the focus of the research and its results, the research implications of the study are limited. For developers of the NCQ and researchers of non-cognitive variables, the study findings suggest that the NCQ, as currently defined, had low predictive ability for the academic achievement of African American women in this study. Whether it was the women's college environment or the uniqueness of the African American female student, the low prediction of academic achievement for African American women in the

study, more information may be needed to understand the academic achievement of this sub-group.

For African American women, the convergence of race and gender suggests that additional measures may be needed when predicting academic achievement. First, research on academic achievement and African American women might include semi-structured interviews about campus environment and identity domains such as race and gender (Fleming, 1984; Shorter-Gooden & Washington, 1996, Ting & Robinson, 1998). The goal of qualitative interviews would be to understand the possible role of racial and gender identity in the academic achievement of African American women. In addition, interviews might identify the role of the campus environment in predicting the academic achievement of African American women. More specifically, what role, if any, do campus environmental factors such as: the interaction with faculty-staff and the availability of a support system, have in predicting the academic achievement of African American women? Finally, interview information could be used to revise the NCQ to include additional measures that might predict the academic achievement of African American women.

Next, future inquiry on the academic achievement of African American women at women's colleges should account for the different types of women's colleges: e.g., southern, urban, Catholic, historically black, seven sisters, daughter seminaries. Qualitative case studies could address the degree of institutional variation among women's colleges and how each type may influence the academic achievement of African American women. Specifically, what role, if any, does the type of women's college have in predicting the academic achievement of African American women?

Again, this information could be used to revise the NCQ to include additional measures for predicting the academic achievement of African American women.

Finally, future research studies of academic achievement and non-cognitive variables should be informed by the perspectives of African American women. Such a perspective cannot be offered simply by including African American women in research studies that compare their results with other minority and White women. Instead, research that attempts to examine the perspectives of African American woman must account for how African American women construct themselves as African Americans, as women and as individuals. To gain this information, the researchers who developed the NCQ might consider revising questionnaire items to examine these multiple components of identity.

In summary, the study found that the NCQ had low predictive ability for African American women in this study. The research does not recommend dismissing the entire body of academic literature on the NCQ. Instead, the study raises questions that compel further investigation with a larger number of African American women. Moreover, it underscores the need to identify additional factors that might account for the academic achievement of African American women, in general.

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APPENDICES

APPENDIX A
THE NON-COGNITIVE QUESTIONNAIRE (NCQ)

Please fill in the blank or circle the appropriate answer.

1. The last six digits of your social security number: _____

2. Your age is:_____

3. Your father's occupation: _____

4. Your mother's occupation: _____

5. Your race is:
   a. African American/Black (not of Hispanic origin)
   b. White (not of Hispanic origin)
   c. Hispanic/Latino
   d. Asian (Pacific Islander)
   e. American Indian (Alaska Native)
   f. Other

6. How much education do you expect to get during your lifetime?
   a. College, but less than a bachelor's degree
   b. Bachelor's or equivalent
   c. 1 or 2 years of graduate or professional study (master's degree)
   d. Doctoral degree such as M.D., Ph.D., etc.

7. Please list three goals that you have for yourself right now:
   a. _____
   b. _____
   c. _____

8. About 50 percent of students in higher education typically leave before receiving a degree. If this should happen to you, what would be the most likely cause?
   a. Absolutely certain I will obtain a degree
   b. To accept a good job
   c. To enter military service
   d. It would cost more than my family could afford
   e. Marriage
   f. Disinterest in study
   g. Lack of academic ability
   h. Insufficient reading or study skills
   i. Other

9. Please list three things that you are proud of having done:
   a. _____
   b. _____
   c. _____

Return of this instrument constitutes informed consent.

Please indicate the extent to which you agree or disagree with each of the following items. Respond to the statements below with your feelings at the present or with your expectations of how things will be. Write your answers to the left of each item.

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

_____ 10. The institution should use its influence to improve social conditions in the state.

_____ 11. It should not be very hard to get a B (3.0) average at (name of institution).

_____ 12. I get easily discouraged when I try to do something and it doesn't work.

_____ 13. I am sometimes looked up to by others.

_____ 14. If I run into problems concerning school, I have someone who would listen to me and help me.

_____ 15. There is no use in doing things for people; you only find that you get it in the neck in the long run.

_____ 16. In groups where I am comfortable, I am often looked to as leader.

_____ 17. I expect to have a harder time than most students at (name of institution).

_____ 18. Once I start something, I finish it.

_____ 19. When I believe strongly in something, I act on it.

_____ 20. I am as skilled academically as the average applicant to (name of institution)

_____ 21. I expect I will encounter racism at (name of institution).

_____ 22. People can pretty easily change me even though I thought my mind was already made up on the subject.

_____ 23. My friends and relatives don't feel I should go to college.

_____ 24. My family has always wanted me to go to college.

_____ 25. If course tutoring is made available on campus at no cost, I would attend regularly.

_____ 26. I want a chance to prove myself academically.

_____ 27. My high school grades don't reflect really what I can do.

_____ 28. Please list office held and/or groups belonged to in high school or in your community.

_____ _____

_____ _____

_____ _____

Return of this instrument constitutes informed consent.

APPENDIX B

Scoring Key

Questionnaire Items	Variable Name (Number)
7	Use to score for Self-Concept (I) Option 1 =1; 2 = 2; 3 = 3; 4 = 4 ; No Response = 2
8	**A.** Options for Long Range Goals (IV) 1 = a vague and/or immediate, short-term goal (e.g., "to meet people," "to get a good schedule," "to gain self confidence") 2 = a specific goal with a stated future orientation which could be accomplished during undergraduate study (e.g., "to join a sorority so I can meet more people," "to get a good schedule so I can get good grades in the fall," "to run for a student government office") 3 = a specific goal with a stated future orientation that would occur after undergraduate study (e.g., "to get a good schedule so I can get the classes I need for graduate school;" "to become president of a Fortune 500 company") **B.** Options for Knowledge Acquired in a Field (VIII) 1 = not at all academic or school related; vague or unclear (e.g., "to get married," "to do better," "to become a better person") 2 = school related, but not necessarily or primarily educationally oriented (e.g., "to join a fraternity," "to become student body president") 3 = directly related to education (e.g., "to get a 3.5 GPA," "to get to know my teachers") Find the mean for each dimension (e.g. Long Range Goals) and round to the nearest whole number.
9	Use to score for Self-concept (I) and Self-Appraisal (II) Option 1 = 4; 2 through 9 = 2; No Response = 2
10	Use to score for Self-concept (I) Each accomplishment is coded according to this scheme: 1 = at least 75 percent of applicants to your school could have accomplished (e.g., "graduated from high school," "held a part-time summer job") 2 = at least 50 percent of applicants to your school could have accomplished it (e.g., "played on an intramural sports team," "was a member of a school club") 3 = only the top 25 percent of applicants to your school could have accomplished it (e.g., "won an academic award," "was captain of football team") Find the mean for this dimension and round to the nearest whole number.
11	Use to score Racism (III) Option 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1; NR = 2
12	Use to score for Realistic self-appraisal (II) Option 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1; NR = 2
13	Use to score for Long-range goals (IV) Option 1 =1; 2 = 2; 3 = 3; 4 =4 ; NR = 2
14	Use to score for Leadership (VI) Option 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1; NR = 2

15	Use to score for Availability of strong support (V) Option 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1; NR = 2
16	Use to score for Community service (VII) Option 1 = 1; 2 = 2; 3 = 3; 4 =4 ; NR = 2
17	Use to score for Leadership (VI) Option 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1; NR = 2
18	Use to score for Racism (III) Option 1 = 1; 2 = 2; 3 = 3; 4 =4 ; NR = 2
19	Use to score for Long-range goals (IV) Option 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1; NR = 2
20	Use to score for Positive self-concept (I) Option 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1; NR = 2
21	Use to score for Realistic self-appraisal (II) Option 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1; NR = 2
22	Use to score for Racism (III) Option 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1; NR = 2
23	Use to score for Positive self-concept (I) Option 1 = 1; 2 = 2; 3 = 3; 4 =4 ; NR = 2
24	Use to score Availability of strong support (V) Option 1 = 1; 2 = 2; 3 = 3; 4 =4 ; NR = 2
25	Use to score Availability of strong support (V) Option 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1; NR = 2
26	Use to score for Racism (III) Option 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1; NR = 2
27	Use to score for Racism (III) Option 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1; NR = 2
28	Use to score for Positive self-concept (I) Option 1 = 5; 2 = 4; 3 = 3; 4 = 2; 5 = 1; NR = 2
29	Use to score for Leadership (VI), Community service (VII), and Knowledge acquired in a field (VIII). Each organization is given a code for A, B, and C below. Find the mean for each dimension and round to the nearest whole number. **A.** Leadership (VI) 1 = ambiguous group or no clear reference to activity performed (e.g., "helped in school") 2 = Membership but no formal or implied leadership role; it has to be clear that it is a functioning group and, unless the criteria are met for a score of 3 as described below, all groups should be coded as 2 even if you, as the rater, are not familiar with the group. (e.g., "Fashionettes," "was part of a group that worked on community service projects through my church") 3 = leadership was required to fulfill role in group or entrance into group was dependent upon prior leadership (e.g., "organized a tutoring group for underprvivileged children in my community," "student council" **B.** Community service relatedness (VII) 1 = no community service performed by group, or vague or unclear relation to community service (e.g., "basketball team") 2 = some community service involved but it is not the primary purpose of the group (e.g., "Scouts") 3 = group's main purpose is community service (e.g., "Big Brothers/ Big Sisters") **C.** Knowledge acquired in a field (VIII) (same coding as used for item 8B)

APPENDIX C

Profile of High and Low Scoring Students

Positive Self-Concept or Confidence. High scorers feel confident of making it through graduation and make positive statements about themselves. They expect to do well in academic and non-academic areas and assume they can handle new situations or challenges.

Low scorers express reasons why they might have to leave school and are not sure they have the ability to make it. They feel other students are more capable, and expect to get marginal grades. They feel they will have trouble balancing personal and academic life. They avoid new challenges or situations.

Realistic Self-Appraisal. High scorers appreciate and accept rewards as well as consequences of poor performance. They understand that reinforcement is imperfect and do not overreact to positive or negative feedback. They have developed a system of using feedback to alter behavior.

Low scorers are not sure how evaluations are done in school and overreact to the most recent reinforcement (positive and negative), rather than seeing it in a larger context. They do not know how they are doing in classes until grades are out. They do not have a good idea of how peers would rate their performance.

Understands and Deals with Racism. Racism is used here as a generic term covering all "isms". High scorers understand the role of the "system" in their life and how it treats nontraditional persons, often unintentionally. They have developed a method of assessing the cultural/ racial/ gender demands of the system and respond accordingly; assertively, if the gain is worth it, passively, if the gain is small or the situation ambiguous. They do not blame others for their problems or appear as a "Pollyanna" who does not see an "ism" that works against them.

Low scorers are not sure how the "system" works and are preoccupied with racism or do not feel racism exists. They blame others for their problems and react with the same intensity to large and small issues concerned with racism. They do not have a successful method of handling racism that does not interfere with their personal and academic development.

Prefers Long-Range Goals to Short-Term or Immediate Needs. High scorers can set goals and proceed for some time without reinforcement. They show patience and can see partial fulfillment of a longer-term goal. They are future- and past-oriented and do not see just immediate issues or problems. They show evidence of planning in academic and non-academic areas.

Low scorers show little ability to set and accomplish goals and are likely to proceed without clear direction. They rely on others to determine outcomes and live in the present. They do not have a plan for approaching a course, school in general, an activity, and so on. The goals they may have tend to be vague and unrealistic.

Availability of Strong Support Person. High scorers have identified and

received help, support, and encouragement from one or more specific individuals. They do not rely solely on their own resources to solve problems. They are not "loners" and are willing to admit they need help when it is appropriate.

Low scorers show no evidence of turning to others for help. They usually have no single support person, mentor, or close adviser. They do not talk about their problems and feel they can handle things on their own. Access to a previous support person may be reduced or eliminated as they enroll in a new school, and they are not aware of the importance of a support person.

Successful Leadership Experience. High scorers have shown evidence of influencing others in academic or non-academic areas. They are comfortable providing advice and direction to others and have served as mediators n disputes or disagreements among colleagues. They are comfortable taking action where it is required.

Low scorers show no evidence that others turn to them for advice or direction. They are non-assertive and do not take initiative. They are overly cautious and avoid controversy. They are not well known by their peers.

Demonstrated Community Service. High scorers are identified with a group that is cultural, racial, gender-based, geographic, etc. They have specific and long-term relationships in a community and have been active in community activities over a period of time. They have accomplished specific goals in a community setting.

Low scorers tend to have no involvement in a community as defined above. They have limited activities of any kind and are fringe members of any group to which they belong. They engage more in solitary rather than group activities (academic or non-academic).

Knowledge Acquired in a Field. High scorers know about a field or areas that they have not formally studied in school. They have a nontraditional, possibly culturally, racially or gender-based view of a field or profession. They have developed innovative ways to acquire information about a given subject or field.

Low scorers appear to know little about fields or areas that they have not studied in school. They show no evidence of learning from community or non-academic activities and are traditional in their approach to learning. They have not received credit-by-examination for courses and may not be aware of such possibilities.

APPENDIX D

Letter of Invitation to Participate in the Study

[Insert Date]

Dear Student:

My name is Tammalyn Thomas-Golden. I am a doctoral candidate in the Department of Educational Administration and Policy Studies at the University of Tennessee, Knoxville. My major professor is Dr. Olga M. Welch. I am conducting a study on first-year, African American women at predominantly white women's colleges. I would like to invite you to participate in my study. There will be an information session about the study on [Date] at [Time] in XXX room. The session will take 90 minutes and will involve two activities: (a) an explanation of the study and the nature of your participation; (b) should you elect to participate in the study, the completion of an Informed Consent form and the completion of a questionnaire.

I hope you will consider attending the information session and participating in my study. I look forward to seeing you on the [Insert the Date].

Sincerely,

Tammalyn Thomas-Golden
Doctoral Candidate, Educational Administration & Policy Studies
The University of Tennessee, Knoxville

APPENDIX E

INFORMED CONSENT FORM

Information

You have been invited to participate in a research project on first-year, African American women at predominantly white women's colleges. Your participation in this project is voluntary. For this study you will be asked to:

1) Complete the Non-Cognitive Questionnaire and
2) Consent to have the Registrar's office release your verbal and math SAT scores and your fall grade point averages to the researcher.

Confidentiality

The information in the study will be kept confidential. Only my major professor and I will have access to the raw data. All data will be stored in a locked file cabinet on the campus of the University of Tennessee, Knoxville. After three years, all data will be destroyed.

Anonymity

In an effort to maintain anonymity, you will be asked to place the last six digits of your social security numbers on the survey. I will submit a list of these numbers to each College Registrar's Office in order to obtain your math and verbal SAT scores and your fall grade point average. At no time will I be able to link your name with your social security numbers and/or academic information.

Participation

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty.

Benefits

Although there are no tangible benefits to you for participating in this study, you will be contributing to the academic literature on the achievement of African American women.

Risks

The risk to you in participating in this study is minimal. There are no foreseen physical or mental discomforts. However, if you become uncomfortable at any time, you may withdraw from the study without penalty.

Contact

If you have questions at any time about this study or the procedures, you may contact me, Tammalyn Thomas-Golden, by e-mail at tthomasg@utk.edu. If you have questions about your rights as a participant, you also may contact the Office of Research, Compliance Section at the University of Tennessee at (865) 974-3466.

_____ Participant's Initials
_____ Researcher's Initials

Consent

I have read and understand the above information. I understand that I am participating in a research project study on first-year, African American women at predominantly white women's colleges. I agree to allow the researcher to access my verbal and math SAT scores as well as fall grade point average. I agree to participate in this project as it has been described to me. I have received a copy of this consent form.

Participant's Signature_____ Date_____

Researcher's Signature_____ Date_____

Vita

Tammalyn Thomas-Golden is a women's college graduate, Mount Vernon College (Washington, DC). She has worked as a college administrator at women's colleges, taught at a community college and served as a research analyst for a market research firm. Currently, she is raising three children and conducting research on African American women at predominantly White women's colleges.

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