

## Abstract

Joylynn T. Miller. Wise Schooling Strategies and Their Impact on African American Students' Task Motivation and Perceptions of Professor Bias. (Under the direction of Ann C. Schulte, PhD)

The purposes of this study were to: (a) examine the impact of two “wise schooling” strategies on the academic motivation of African American students, (b) examine the impact of “wise schooling” strategies on students’ perceptions of professor bias, and (c) examine what role students’ level of academic identification plays in their response to “wise schooling” strategies. For the sample of 60 African American undergraduate students, the study used an analogue format in which three randomly assigned groups of students indicated how they would respond to three different types of feedback critical of their writing from a White English professor. Students completed measures assessing their academic identification and their academic motivation and perceived professor bias in response to critical feedback. This study tested predictions based on the literature of the stereotype threat and “wise schooling” theory. It was hypothesized that students receiving “wise schooling” feedback would report higher academic motivation and lower perceptions of professor bias than students’ receiving neutral feedback. It was predicted that there would be significant relationships among the academic identification, academic motivation, and perceptions of bias measures. It was also hypothesized that students with high identification with English would have higher motivation and lower perceptions of bias when receiving either of the “wise schooling” strategies.

Results indicated that wise critical feedback increased or maintained African American students’ motivation in the face of negative feedback. However, neither of the “wise schooling” feedback strategies were found to lower students’ perceptions of professor bias when receiving negative feedback. With regard to students’ academic identification, students’ level of academic identification with English was not related to their academic motivation or perceptions of bias.

Additionally, students with high academic identification were not found to have higher academic motivation or lower perceptions of professor bias when receiving either of the “wise schooling” strategies. Implications for practice and future research are presented.

Wise Schooling Strategies and Their Impact on African American Students' Task Motivation  
and Perceptions of Professor Bias

by

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## Biography

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## Table of Contents

I. Introduction	1
II. Literature Review	4
Stereotype Threat Theory	4
Theory Overview	4
Evidence to Support Stereotype Threat Theory	5
Academic Disidentification	11
Summary	12
Wise Schooling Theory	13
Theory Overview	13
Wise Schooling: A Preliminary Study	15
Research Relevant to Individual Wise Schooling Strategies	17
Wise Critical Feedback	17
Incremental View of Intelligence Strategy	22
Challenge Over Remediation and Student Belongingness	
Strategies	27
Multiple Perspectives Strategy	28
Role Model Strategy	31
Summary	36
III. Statement of Problem and Hypotheses	36
IV. Method	39
Participants	39
Materials	39
Domain Identification Measure	39
Academic Reaction Measure	40
Procedures	40
V. Results	43
Descriptive Statistics of Primary Measures	43
Data Analysis for Research Question One	43
Data Analysis for Research Question Two	44
Data Analysis for Research Question Three	44
Data Analysis for Research Question Four	45

VI. Discussion	54
Discussion of Results for Each Hypothesis	54
Hypothesis One	54
Hypothesis Two	56
Hypothesis Three	59
Hypothesis Four	60
VII. Limitations of the Study	62
VIII. General Discussion	64
IX. Practical Implications and Directions for Future Research	65
X. References	67
XI. Appendices	73
List of Tables	
Table 1 Descriptive Statistics for Primary Measures	46
Table 2 Intercorrelations Among the Dependent Measures	47
Table 3 Analysis of Variance Examining Differences in Motivation by Feedback Condition	48
Table 4 Analysis of Variance Examining Differences in Perceived Bias by Feedback Condition	49
Table 5 2 x 3 Analysis of Variance Examining Differences in DIME and Motivation	50
Table 6 Analysis of Variance Examining Differences in DIME and Perceived Bias	51
List of Figures	
Figure 1 Differences in Motivation for High and Low Identifiers	52
Figure 2 Differences in Bias for High and Low Identifiers	53

## *Introduction*

African Americans have made many gains in the area of education and school performance since the landmark 1954 court decision of *Brown vs. Board of Education*. There are more African American students enrolled in elementary and secondary schools, increased high school graduation rates, and more students attending and graduating from college (Garibaldi, 1997). However, African American students continue to lag behind their White counterparts on many indicators of academic achievement (Sowa, Thompson, & Bennett, 1989). This “achievement gap” is evident at all educational levels (Steele, 1992) and is a source of national concern.

One obvious explanation for the “achievement gap” is the differential rates of poverty for African American and White students in the United States. Through a variety of direct and indirect paths, poverty is associated with lower quality schools, less opportunity to learn, and poorer academic preparation (Garibaldi, 1997). However, this explanation cannot account for the difficulties and poorer outcomes that many academically well-prepared African American students encounter in postsecondary settings. Although the gap between Whites and African Americans that complete high school is narrowing, the gap is becoming wider between the percentage of African American and White students that actually finish college (NCES, 2000). For example, 70 percent of all African American students who enroll in four- year colleges drop out at some point during their college careers, as compared with 45 percent of White student (Steele, 1992). This postsecondary “achievement gap” is of particular concern because of the increased employment options and income potential that postsecondary education brings.

The college-level achievement gap is most pronounced for African Americans who attend predominantly White colleges and universities. In these settings, African American students have, on average, higher attrition rates, lower grade point averages, lower retention rates, lower enrollment in postgraduate programs, and lower overall psychosocial adjustment than White students at predominantly White universities (Allen, 1985; Lunneborg & Lunneborg, 1986; Sherman, Giles, & Williams-Green, 1994; Tracey & Sedlacek, 1987). Although differences in high school preparation may account for some of the disparity in outcomes by ethnicity, even when compared to White students with equivalent academic preparation, African American

students still fare more poorly (Steele, 1997; Steele & Aronson, 1995). The fact that equally well prepared African American students encounter more difficulty and have poorer outcomes than their White counterparts at predominantly White institutions suggests that some aspects of the university or students' interactions with the university contribute to the differential outcomes.

This possibility, that aspects of the university setting itself contribute to poorer outcomes for African American students at predominantly White institutions, is an important area for research exploration for two reasons. First, three-fourths of currently enrolled African American students attend predominantly White universities, and 60 percent of the baccalaureate degrees awarded to African American students are from predominantly White institutions (American Council on Education, 1988). Second, such research focuses on an area where change is possible. There may be relatively inexpensive and easily implemented changes that could make the university setting more hospitable to African American students, thereby decreasing the achievement gap.

Recent research by Steele (1997) has lent support to the idea that African American students may experience some aspects of the academic environment differently than White students and that this difference contributes to performance differences between the groups. He has provided evidence of a phenomenon he terms *stereotype threat* that affects any stigmatized group, and leads to performance decrements. Stereotype threat affects academic performance for African Americans because of their awareness of societal stereotypes of African Americans as intellectually inferior and academically unsuccessful. Steele suggested that African American college students are particularly vulnerable to stereotype threat because it is most likely to be experienced when a person cares deeply or identifies with the area in which he or she is being stereotyped.

Steele (1997) has also proposed that the actions of school personnel can affect the extent to which African Americans experience stereotype threat and its resulting performance decrements. He has suggested a number of actions that school personnel can take to minimize stereotype threat and improve academic outcomes for African American students. Consisting of six general strategies, Steele's "*wise schooling*" theory, draws from diverse research about factors which affect students' academic motivation and self-perceptions.

In the following sections, Steele's (1997) stereotype threat theory and research related to it are presented. This section is followed by a presentation of Steele's (1997) "wise schooling" theory. Research directly related to wise schooling theory is reviewed, as well as supporting research from other sources. A particular focus of wise schooling theory is the type of feedback given to students about their academic performance. Therefore, a focus of the review will be communication between students and instructors or advisors, particularly when the student is African American and the professor is White.

The literature review concludes with a description of a study that tests two aspects of Steele's "wise schooling" theory in an analogue format. This study manipulated the type of feedback provided to African American students about their writing skills, and assessed the impact of the manipulation on African American students' level of motivation and perception of instructor bias. In addition, the extent to which students' level of academic identification affects

the impact of different types of feedback was examined.

### *Literature Review*

#### *Stereotype Threat Theory*

*Theory overview.* In many of the recent discussions of the achievement gap, and minority student achievement, Claude Steele's stereotype threat theory has played a prominent role (Jencks & Phillips, 1998; Okagaki, 2001). According to Steele (1997), pervasive negative stereotypes about African American intellectual ability have a negative impact on African American's self-perceptions, performance on academic tasks, and willingness to seek out and engage in academic tasks (Howard & Hammond, 1985). Steele has incorporated this proposition into a broader social psychological theory, stereotype threat theory. Stereotype threat is defined as:

The social-psychological threat that arises when one is in a situation or doing something for which a negative stereotype about one's group applies. This predicament threatens one with being negatively stereotyped, with being judged stereotypically, or with the prospect of conforming to the stereotype. (Steele, 1997, p.614)

As a result of experiencing this threat, the person's performance is negatively affected. Stereotype threat has the potential to impact the performance of any stigmatized group. For example, women may experience stereotype threat when completing difficult math problems, or asked to complete difficult spatial tasks (Spencer, Steele, & Quinn, 1997). In the case of African Americans, pervasive negative stereotypes about intellectual ability in American culture operate to make academic activities and settings potentially threatening. An African American student who encounters a difficult academic task must not only deal with the task, but with the threats that: (a) others may account for his or her difficulty in terms of the stereotype that African Americans are intellectually inferior, or (b) he or she may indeed fit the stereotyped view that African Americans have difficulty with intellectually challenging tasks.

Steele (1997) has specified that stereotype threat can affect African American academic performance and increase the achievement gap in two ways. First, early in their school careers, African American students who encounter challenging tasks may eliminate school as a self-definitional domain and place more value on less stigmatized areas of functioning, such as social relationships. Such a strategy enables African American students to feel no threat during aca-

demically challenging situations or to avoid academically threatening situations all together. In this case, stereotype threat contributes to the achievement gap by promoting disidentification with school and academic tasks by African American students. Disidentification occurs when an individual no longer views threatening domains as factors important in defining themselves and therefore affecting their self-esteem. Disidentification can range from a situational devaluing of a particular domain in response to a specific threatening situation to long term disengagement from all academic domains (Steele & Aronson, 1995).

When African Americans do identify with academic domains and place value on schooling and their performance, stereotype threat operates in a different way. Difficult tasks that are perceived as relevant to the stereotyped domain evoke threat, and this threat depresses students' academic performance. Steele has not clearly specified the mechanism by which the performance deficit occurs, but it appears that stereotype threat may result in distracting thoughts, anxiety, defensiveness, or self-doubt which, in turn, result in poorer academic performance.

In Steele's (1997) formulation of stereotype threat, the severity of the threat one experiences on a particular task depends on how strongly an individual identifies with stereotyped domains. For example, students that strongly identify with school domains are more threatened by potentially stereotypical situations in academic settings because these areas are self-relevant. It is also important to note that in Steele's formulation, increased susceptibility to negative stereotypes does not necessarily stem from an internalized belief in societal stereotypes. Simply believing that others, particularly members of the dominant group, may judge one's performance on the basis of the stereotype can lead to the performance decrement.

*Evidence to support stereotype threat.* In a series of studies, Steele and Aronson (1995) examined the stereotype threat phenomenon and its effect on African American students' test performance. The authors hypothesized that a difficult task, presented as a test of intellectual ability, would trigger stereotype threat in African American students, resulting in a decrement in their performance. In the first study, 114 African American and White undergraduate students were administered a 30- minute task consisting of items from the verbal section of the Graduate Record Examination. Although all students were given the same task, they were randomly

assigned (within each ethnic group) to three different presentation conditions. In one condition, the task was described as a diagnostic test of intellectual ability (diagnostic condition). In the second condition, the task was described as a non-diagnostic problem-solving test (non-diagnostic condition). In the third condition, the task was described as a non-diagnostic test designed for highly verbal individuals (non-diagnostic challenge condition). All students were told they were taking a test that was very difficult, not to expect many correct answers, and to expect feedback at the end of the session. Upon completion of the tasks, each student completed an 18-item self-report measure that asked them to provide information such as amount of effort expended, level of persistence, and perceptions of the test's bias.

In terms of task performance, results of a 2 x 3 ANCOVA (ethnicity x presentation condition, with SAT scores as the covariate) indicated main effects for ethnicity and for presentation condition, with White students obtaining higher scores overall, and students in the non-diagnostic challenge condition outperforming students in the other two presentation conditions.

Stereotype threat would have been most clearly indicated by an ethnicity x presentation condition interaction, where African American students' performance was markedly lowered in the diagnostic condition compared to the non-diagnostic conditions, and White students' performance was less affected by the diagnostic condition. The predicted interaction was not obtained, in part because of the differences in White and African American students' performance in the non-diagnostic challenge condition a condition that was not relevant to stereotype threat theory. Therefore, the authors eliminated this condition in a follow-up analysis. With the non-diagnostic challenge condition eliminated, the predicted interaction was marginally significant.

On the self-report measures, there were no significant differences between conditions in participants' feelings of academic competence and self worth, or reports of disrupting thoughts. However, African Americans across all conditions perceived the task as more biased than White students. African American students in the diagnostic condition viewed their performance as poorer than African Americans in the non-diagnostic conditions. White students' view of their performance did not vary across presentation conditions.

Thus, in this first study, the authors found support for a key aspect of stereotype threat theory; that presenting a task as a test of intellectual functioning negatively affects African

American's performance relative to White students. However, the predicted interaction was not obtained in the three condition analysis, and African Americans did not report greater anxiety in the diagnostic condition.

To provide stronger support for stereotype threat theory, Steele and Aronson (1995) made a number of modifications to their original study in order to replicate stereotype threat phenomenon and to better understand the mechanisms that trigger it. They shortened the experimental task, dropped the non-diagnostic challenge condition, added a measure of test anxiety, and tracked the amount of time participants spent on the experimental task. Using a sample of 20 African American and 20 White undergraduate students, the researchers told half the students in each ethnic group that they were taking a diagnostic test of intellectual ability, and half that they were taking a non-diagnostic test of problem-solving ability. As in the previous study, students were informed that they would be administered difficult test items to encourage equal effort across conditions. Each student completed the Spielberger State Anxiety Inventory (STAI) in order to assess the impact of anxiety on academic performance during threatening situations and a self-report cognitive interference measure.

The results indicated that African Americans in the diagnostic condition performed significantly worse than African Americans in the non-diagnostic condition. Additionally, African Americans in the diagnostic condition performed significantly worse than Whites in either condition. It appeared that the lower performance of African American students in the diagnostic condition could be explained by decreases in both accuracy and number of attempted problems. Although stereotype theory asserts that depressed performance occurs as a result of anxiety in threatening situations, the self-report results did not indicate significant differences in effort, anxiety, and cognitive interference between conditions. Although African American students in the diagnostic condition tended to take longer to complete the task than students in other conditions, results did not indicate an association of completion time with anxiety level.

Results of this study provided additional evidence of the potential impact that stereotype threat can have on African American students' academic performance. However, across conditions the authors did not find differences in participants' reported levels of anxiety. They hypothesized that the anxiety and cognitive interference measures were not sensitive measures in

part because they were given after the test, so that participants' answers did not reflect immediate or momentary responses.

In these first two studies, Steele and Aronson (1995) found support for stereotype threat's impact on African American's test performance, but none of their self-report measures showed how stereotype threat interfered with performance. In a third study, the authors modified the stereotype threat test paradigm, to assess whether stereotype activation and avoidance occurred in the conditions where performance decrements had been observed. As in the previous studies, 35 African American and 33 White undergraduate students were randomly assigned to a diagnostic, non-diagnostic, or control condition. However, participants were told the study examined the relationship between two cognitive processes: lexical access processing (LAP), which assessed visual processing of words, and higher verbal reasoning (HVR), which assessed the abstract meaning of words. In the diagnostic condition, participants were told they would be completing cognitive tasks which measured verbal ability. In the nondiagnostic condition, participants were told they would complete cognitive tasks which were not measures of their ability. In the control condition, participants were provided with a note which instructed them to complete the LAP word fragment measure and the HVR avoidance measure, with no mention of verbal ability.

The LAP task was a measure of stereotype activation. Stereotype activation occurs when racial stereotypes are accessed cognitively during academically threatening situations. The measure consisted of word fragments selected by polling an undergraduate psychology class. Sixty-one of the word fragments were neutral and nineteen were race and self-doubt related [e.g., \_\_ACK (Black), WEL \_\_ \_\_ \_\_ (Welfare), and DU \_\_ \_\_ (Dumb)]. It was anticipated that students experiencing stereotype threat would be more likely to complete the race-related fragments with race-related words.

The HVR task measured stereotype avoidance, which occurs when students separated themselves from stereotypical traits. Participants were required to rate their preferences for a list of 57 activities such as types of sports and music. It was expected that African American students experiencing stereotype threat would show lower preferences for activities stereotypically associated with African Americans.

Findings of this study indicated that African American students in the diagnostic condi-

tion generated significantly more race-related and self-doubt word fragments than African American students in the non-diagnostic condition and White students in either condition. African-American students in the diagnostic condition were also much more likely to avoid endorsing activities associated with African Americans than students in any other condition. Responses to demographic questions indicated that only 25 percent of African American students endorsed their race in the diagnostic condition, whereas 100 percent of the participants in the other conditions endorsed race. To summarize, African American students expecting to take a difficult test of intellectual ability were more likely to activate race-related word fragments, avoid endorsing activities associated with African Americans, and were more likely to avoid linking their racial identity with their test performance. Thus, although the authors had not found evidence of stereotype activation through self-report measures, indirect measures of stereotype activation supported their claim.

Steele and Aronson (1995) conducted a fourth study to further assess the potential effects of stereotype threat under different circumstances. They hypothesized that even during non-diagnostic tasks merely endorsing racial identification on a form would be enough to induce stereotype threat. To test this hypothesis, they selected 24 African American and 23 White undergraduate students to be randomly assigned to a race-prime or no-race-prime condition. Both conditions required participants to complete a 25-minute non-diagnostic problem-solving task; however, the race-prime condition required participants to disclose their race before completing the test items. After finishing the task, participants were asked to complete a questionnaire regarding level of frustration, expended effort, and test bias. Participants also completed a stereotype threat and academic identification questionnaire that assessed students' perceptions of bias based on ability and amount of value placed on education.

Results indicated African American students in the race-prime condition performed significantly worse than the White students in the race-prime condition and African American students in the no-race-prime condition. It is also interesting to note that African American students in the no-race-prime condition equaled the academic performance of the White students. These results suggest that simply endorsing one's racial identity can cause a decrease in African American students' academic performance. This finding has major implications because it is

common for African American students to endorse their racial identity prior to taking many major exams such as the Scholastic Achievement Test (SAT) or Graduate Record Exam (GRE).

In summary, the results of Steele and Aronson's first series of studies indicated that a test presented as a measure of intellectual ability depressed African American's academic performance in comparison to White participants. Additionally, tests presented in this manner activated racial stereotypes and race-related self-doubts. More importantly, merely endorsing one's race was enough to depress African American's academic performance even if the test was not described as a measure of intellectual ability. However, the mechanism by which stereotype threat exerts its effect, (e.g., anxiety or cognitive interference) was not established, as all self-report measures showed no difference between threat and non-threat conditions for African Americans, even when actual performance decrements were observed.

Although Steele (1997) has speculated that anxiety about conforming to minority group ability stereotypes may underlie the performance decrement observed in stereotype threat studies, he has not found relationships between measures of anxiety and academically threatening situations. This failure may be due, in part, to the small sample sizes used in his research. To address this methodological shortcoming, Osborne (2001) utilized a nationally representative sample of high school seniors from 1,015 schools in the United States in order to examine whether anxiety would explain a significant amount of the variance found in the academic performance among racially diverse students. His sample consisted of 12,557 White students, 1,846 African American students, 1,047 Latino students, and 111 Native American students. Each student not only completed the achievement test, but also a short measure of anxiety following the test that assessed feelings of uneasiness, fear, calm, and nervousness. Additionally, demographic information and previous academic preparation were collected through student self-reports.

Osborne (2001) found highly significant differences in achievement scores as a function of race. In separate analyses conducted for each White versus minority pair (White vs. African American, White versus Latino, and White vs. Native American), White students performed significantly better than the other groups. Additionally, significant differences among groups on anxiety were found, with White students' anxiety scores being significantly lower than the scores

for African American and Latino students.

In follow-up analyses, Osborne found that anxiety partially mediated the relationship between race and achievement for Whites/Latinos and Whites/African Americans. Ethnicity accounted for between 21 and 23 percent of the variability in achievement scores, and anxiety explained between 38 and 42 percent of the ethnicity effects. Additionally, the author tested whether differences in the participants' academic performance or level of academic preparedness could have accounted for differences in their level of anxiety rather than differences in anxiety explaining their academic performance. Anxiety continued to be a significant mediator, after controlling for previous academic preparation and academic performance when achievement differences between Whites versus African Americans and Whites versus Latinos were examined. However, anxiety did not help to explain the significant differences between race and achievement scores when Native American and White students were compared. The failure to find anxiety as a mediator for Native American and White students may be due to the small number of Native Americans in the study. This study is an important addition to the research supporting stereotype threat theory because it supports the relationship between anxiety and depressed academic outcomes among African American and Latino students.

Several researchers have found support for the discrepancy between African American and White students in the area of academic achievement. African American students seem to perform less well when they perceive that intellectual ability is being measured. However, when African American students are placed in less academically threatening situations their academic outcomes significantly improve. Additionally, research in this area seems to point to the importance of finding ways in which anxiety encountered in academic contexts mediates the academic performance of African American students.

*Academic disidentification.* One aspect of Steele's (1997) stereotype threat theory that has not been researched extensively is the role of academic disidentification in African American students' responses to intellectually challenging situations. As noted earlier, Steele (1997) has contended that academic disidentification can be a response to stereotype threat for some students, who stop investing themselves in academic settings that they perceive to be threatening (Smith & White, 2001; Steele & Aronson, 1995). More specifically, domain identified African

American students can disengage from academically challenging tasks due to the fear of succumbing to negative group stereotypes about their intellectual potential. Although Steele clearly defines the disidentification process he has yet to thoroughly incorporate the construct into his research. Steele has not tested the disidentification process directly, but he has utilized student grades, SAT scores, and self-report measures to assess students' domain identification in previous research studies (Steele, 1997; Steele & Aronson, 1995). However, Smith and White (2001) have proposed a measure of domain identification which seems to provide a more consistent and psychometrically sound measure of domain identification. For these reasons, the author's measure of domain identification was utilized in the present study.

*Summary.* Steele and Aronson (1995)'s initial series of studies have stimulated many new directions in social psychology and educational research. Stereotype threat has been found to negatively impact the academic achievement of other groups such as women, Latinos, and Asian Americans (Aronson, Salinas, 1997; Aronson, Quinn, & Spencer, 1998). In the case of African Americans, Steele's innovative research has important implications for efforts to close the achievement gap that exists between African American and White students.

Traditionally, the achievement gap has been attributed to factors beyond the scope of the school (Corbett, Wilson, & Williams, 2002). The underachievement of African American students in the past and still today is widely attributed to deficits in character, genes, family, and lack of motivation (Deschenes, Cuban, & Tyack, 2001). Steele's research suggests that, at least for African American college students, the deficit model may be incorrect. Rather, aspects of the school setting that are perceived to be neutral for all students evoke threat in African American students that then affects performance. Therefore, the achievement gap experienced by academically identified African American students is not an internal deficit experienced prior to college, but rather a response to a university-student mismatch (Leyens & Croizet, 2000; Steele, 1997). This new conceptualization calls for predominantly White universities to be more sensitive to the ways in which academic environment is experienced by African American students. In the next section, a proposal for making schooling more responsive to African American students, is wise schooling theory, is presented and evidence to support the schooling strategies contained in the theory are presented.

*Theory overview.* Steele and Aronson (1995) demonstrated that African American college students' academic performance can be negatively affected by situational cues that highlight student ethnicity, or the extent to which a task assesses intellectual functioning. It appears that stereotypic images of African Americans as intellectually inferior trigger cognitive disruptions that lead to performance decrements. This, in turn, results in apprehension about conforming to group stereotypes, even in capable students. Steele and other researchers (Aronson, Quinn, & Spencer, 1998; Osborne, 2001) have suggested that stereotype threat may be a pervasive aspect of college life for African American students in predominantly White universities and may be a major cause of poorer college outcomes for African Americans.

This hypothesis about the cause of poorer outcomes in African American students at predominantly White universities suggests two paths for intervention: (a) one may work to change African Americans response to academically threatening situations, or (b) one may work to change the university setting, so that African Americans feel less threatened. Given that stereotype threat appears to operate outside of African American students' awareness, and that cognitions may be difficult to change, Steele (1997) has advocated for interventions that focus on change within the university setting. He has proposed several situational strategies that he contends will reduce stereotype threat. Terming his proposal "wise schooling theory," Steele suggested six specific strategies that can be used in the classroom in order to improve the academic achievement of African American and other stereotype-threatened groups by reducing their concerns that they may be negatively judged. These strategies convey the belief that African American students' academic abilities are assumed rather than doubted. For example, in the college setting, wise schooling techniques aim to close the achievement gap between African American and White college students by providing White faculty with the appropriate communication techniques to convey a sincere sense of belief in the intellectual abilities of African American students. Steele's six wise schooling strategies are:

- a) Coupling critical feedback with optimism about student potential, a strategy he termed "wise" critical feedback.

- b) Stressing the expandability of student intelligence through experience and training.
- c) Providing challenging work in the context of a supportive teacher-student relationship, rather than providing remedial materials.
- d) Affirming student belongingness within the academic setting based on intellectual potential.
- e) Conveying an investment in multiple cultural perspectives through the use of varied teaching methods and showing an awareness of diversity in class content, discussions, and assignments.

f) Providing role models from stereotyped threatened groups to communicate to students that negative stereotypes can be overcome (Steele, 1997 p. 624-625). In his discussion of these strategies, Steele (1997) defined his first strategy, “wise” critical feedback, as instructor feedback conveying that high academic standards have been set as well as a sincere belief that the student is capable of meeting the set standards. He defined the second strategy, stressing the expandability of intelligence, as instructor comments indicating that academic ability is a dynamic rather than a static entity, which can be changed with training and experience. Steele maintained the third and fourth wise schooling strategies, providing challenging work within a supportive teacher/student relationship and affirming student belongingness operated by conveying a belief in students’ future academic potential, rather than suspicions of their possible intellectual limitations. Varied teaching methods and diverse course content, the fifth wise schooling strategy, shows sensitivity to different cultural learning styles and perspectives, creating an academic environment where African American students feel less likely to be negatively judged. Finally, the sixth wise strategy, providing students from stigmatized groups with educators from stereotype- threatened groups provides concrete evidence to minority students that it is possible to overcome negative stereotypes in the college setting.

As is evident from the descriptions above, Steele’s wise schooling strategies attempt to change some of the daily interactions between teachers and African American students in order to reduce stereotype threat in their educational environment and eliminate the discrepancies that exist between the academic achievement of White and African American students. Wise schooling strategies appear to operate primarily in two ways. First, wise strategies help to decrease

underperformance by increasing motivation and decreasing feelings of inadequacy in threatening academic contexts. Second, wise strategies help educators to convey the message that students are not likely to be stigmatized during academic interactions, thereby decreasing stereotype threat. If Steele's wise schooling theory is correct, there may be a number of situational strategies that can be relatively easily implemented in the classroom to both decrease stereotype threat and increase motivation for African American students, thereby increasing their success.

*Wise schooling theory: A preliminary study.* Currently, there is little direct empirical support for Steele (1997)'s wise schooling theory and its effectiveness in reducing stereotype threat, increasing academic motivation, and improving student outcomes. However, the potential efficacy of many of the strategies within wise schooling theory can be supported by the work of researchers in other areas, such as intercultural communication or achievement motivation. In this section, the one study that examined Steele's wise schooling theory in its entirety will be presented and critiqued. In the subsequent section, research relevant to each of the wise schooling strategies will be discussed individually.

In a preliminary test of his wise schooling theory, Steele (1997) incorporated the six strategies derived from the theory into a freshmen intervention program at the University of Michigan that was designed to improve retention rates and reduce academic underachievement among African American students. Although the program was targeted at African Americans, it did not single them out. Students from all ethnic groups were randomly selected to be invited into the program, with an oversampling of African Americans and other ethnic minorities. Despite the fact that students were randomly selected, they were told they had been selected through a competitive selection process based on their strong academic potential. Steele maintained that telling students they were selected because of their academic potential communicated belongingness, one of his wise schooling strategies. He also maintained this type of invitation was consistent with two other wise schooling strategies, wise critical feedback and expandability of intelligence, because of the emphasis on students' potential.

The intervention program took place during the first 10 weeks of the semester and incorporated other wise schooling strategies. Rather than providing remedial materials, the intervention consisted of weekly discussion groups on adjustment-relevant social issues and

workshops in the areas of calculus, chemistry, physics, and writing. These aspects of the program sharply contrast with typical remedial programs, but are consistent with wise schooling theory in that they provided challenging work and created an environment for positive teacher-student relationships, where multiple perspectives were voiced and valued.

Steele assessed the program's effect on student achievement by using two convenience comparison groups, African American students assigned to a remedial program and African American students not participating in either program. The first-semester grades of African American students' in the wise schooling intervention program were compared to those of the remedial and no intervention group, controlling for entering high school grade point average and standardized test scores. African American students in the wise schooling intervention program received grade point averages that were significantly higher than African American students in either the remedial or no intervention group. Their performance also equaled the academic performance of White students. On the basis of these results, Steele suggested that remediation programs that are meant to increase academic achievement may only serve to reinforce threatening racial stereotypes. Follow-up data showed that the improved academic performance of students in the intervention continued into their sophomore year and only one student dropped out at the end of four years. In contrast, 25 percent of the students in the no intervention comparison group had failed to register for classes by their junior year.

The preliminary results of Steele (1997) 's intervention program are promising; however, these results fail to tease apart which aspects of the wise schooling theory account for improvements in African American students' strong academic achievement in the intervention program. Additionally, lack of random assignment to the remedial intervention versus the wise schooling intervention programs makes it difficult to attribute the performance differences in the two groups to the intervention. As a result, students in the remedial and control comparison groups may have had additional risk factors that accounted for their poorer academic outcomes. Unfortunately, this the only study to directly examine wise schooling theory in its entirety, However, there are a small number of studies that have examined some of the individual strategies included in wise schooling theory. In addition, some of the indirect empirical support for individual strategies can be found in the communication and achievement motivation literature

which provides support for individual wise schooling strategies such as wise critical feedback, communicating the incremental view of intelligence, displaying multiple cultural perspectives, and the importance of providing role models.

### *Research Relevant to Individual Strategies in Wise Schooling Theory*

In this next section, the few research studies directly testing portions of Steele's wise schooling theory are presented. Because there is so little direct research on wise schooling theory, studies from a broad range of areas relevant to individual wise schooling strategies are presented. These include studies with age groups other than college students (the primary focus of the present study), because of the small number of relevant studies with any age group. In this discussion, the two wise schooling strategies that were the focus of the present study, wise critical feedback and the incremental view of intelligence will receive special attention.

*Wise critical feedback.* As noted earlier, one of the six strategies in wise schooling theory is the coupling of critical feedback with optimism about student potential. The possibility that cultural differences in communication style may result in miscommunication between White professors and African American students by affecting African American students' motivation and self-confidence has been suggested by other researchers (Cohen, Steele, & Ross, 1998; Collier, 1988).

Effective feedback between African American students and White educators can be achieved when both verbal and nonverbal messages are sent and received accurately and appropriately. As our society becomes more culturally diverse, there has been increased concern with the difficulties cultural differences pose for effective communication. Communication style is highly correlated with race, culture, and ethnicity (Sue & Sue, 1999). Different cultures produce different methods of communication, different ways of relating through communication, and thus different ways of forming and maintaining and misunderstandings.

Communication is the process through which individuals create and share information with one another as they move toward a mutual understanding (Collier, 1989). When culture and communication merge, intercultural communication occurs and a message is produced in one culture, and then must be processed by a member of another culture (Porter & Samovar, 1994). Intercultural communication competence requires that individuals be able to effectively share

information with individuals that are culturally dissimilar (Rogers & Steinfatt, 1999). Increased contact with other cultures makes it very important to understand and communicate with others that are vastly different from ourselves. Identifying common cultural communication rules is important because behaviors that are shared between cultures help to produce more satisfying and effective interactions (Collier & Ribeau, 1986).

African Americans and Whites share aspects of American culture; however, they have different cultural styles of communication (Kochman, 1981). Despite increased contact between African Americans and Whites, interactions between these two groups remain problematic (Asante & Davis, 1989). African Americans have unique styles of speaking, interactional styles, conversational rules, and expectations that differ from Whites (Hecht, Collier, & Ribeau, 1993). African Americans maintain a distinct set of cultural values and norms in the context of the White dominant culture. Cultural differences are often ignored when African Americans and Whites communicate because it is assumed that they are operating according to the same language and cultural conventions, usually the socially dominant White group's communication style is viewed as standard (Kochman, 1981). However, vast differences in historical, cultural backgrounds, and communication styles leads to many differences in the ways in which African Americans and White Americans interpret interactions. Kochman (1981) asserts that when the dominant cultural fails to recognize African American cultural norms, the consequence is that African American behavior is viewed as a distortion of White behavior. Due to power differentials among various racial groups, individuals from disempowered groups are often expected to accommodate the dominant group's patterns of communication in order to maintain positive interactions (Martin, Hecht, & Larkey, 1994).

Given that cultural differences may lead to miscommunication, Steele and others have investigated the potential complications that arise when feedback is exchanged between African Americans and Whites. For example, Crocker, Voelkl, Testa, and Major (1991) conducted a study involving the affective reactions of 38 African American and 45 White college students after receiving positive or negative interpersonal feedback from a White peer. Participants were told that they were matched with a same sex White peer in order to examine friendship development. Each student completed the Rosenberg Self-Esteem Scale and a self-description form

about various aspects of the participants' personal qualities. Participants were then informed that the White evaluators would decide on their willingness to have them as a friend based on their responses. Students were randomly assigned to a seen or an unseen condition. In the seen condition, participants were told that the White evaluator could observe them through a two-way mirror; however, in the unseen condition the White evaluator could not observe them through a two-way mirror. The experimenter distributed either very negative or very positive feedback to the participants from the White evaluators based on their responses regarding personal qualities and self-descriptions. After receiving feedback, participants answered questions about their self-esteem and the degree to which factors such as ethnicity, sex, personality, and the evaluator's racial bias influenced the evaluator's response.

Results of the study indicated that African American students tended to discount positive and negative feedback given to them by White evaluators that were aware of their race, and were likely to feel evaluations were due to prejudice. Additionally, African American students made more attributions about the prejudice of the evaluator when given negative feedback than when they received positive feedback. However, African American students tended to have faith in both positive and negative feedback when the White evaluator was unaware of the student's race. In contrast, White participants were not significantly affected by positive or negative feedback given by White evaluators in either condition. It is also interesting to note that African American participants were more likely to attribute negative feedback to their own personality when they could not be seen by the White evaluator than when they could be seen. Overall, the authors suggest that African American students tend to exist in a state of attributional ambiguity or uncertainty, when given positive or negative feedback from a White evaluator. The feelings that African American students have may be based on personal experiences. Whites may experience discomfort from directly criticizing stigmatized groups (Harber, 1998), therefore they resort to purely positive communication to avoid distress (Jones, et. al, 1984). This study provides general support for the hypothesis that the same feedback can potentially be interpreted differently when given to African American and White students and points to the apparent need for adapting feedback strategies during interactions between White evaluators and African American students.

African American students may be sorting through suspicions of racial bias, fears of a perception of intellectual inferiority, and other cultural differences when attempting to decipher academic information provided by White faculty (Howard & Hammond, 1985; Steele, 1992). Steele and others have speculated that this communication mismatch has the potential to negatively impact students' educational environment and as a result contributes to the achievement gap between African American and White students (Deschenes, Cuban, & Tyack, 2001; Steele, 1997). Thus, what professors think they are communicating and African American students perceive may be different. African American students attributing positive or negative feedback to racial prejudice without reflecting on their academic performance may not use important academic information (Steele & Aronson, 1995). As a result, Steele has proposed that African American students' academic achievement and motivation can be raised when White educators provide wise critical feedback rather than the strategies they typically use with White students. To test this hypothesis, Cohen, Steele, and Ross (1998) examined the impact of three types of feedback on participants' perception of evaluator bias, motivation, and domain identification in writing. Eighty African American and 73 White students were asked to write a letter of commendation for their favorite teacher which would be read by White evaluators. Upon completion of the letter writing task, all participants were asked to complete a self-report measure containing three items which assessed their level of motivation and three items measuring perceptions of their capabilities as a writer (domain identification with writing capabilities). One week later, participants were provided with written feedback about their commendation and then were randomly assigned to three different feedback conditions. In one condition, participants received criticism on their written recommendation buffered with positive feedback. In the second condition, participants received purely critical feedback without further comment. In the third condition, "wise" critical feedback was given, which meant that critical feedback was given along with the assurance that high standards had been set and that participants were capable of meeting these standards. After receiving the feedback, participants were asked once again to complete a questionnaire concerning their level of motivation and their capabilities as a writer (domain identification with writing capabilities). However, this time they also were asked to provide their perceptions of the evaluator's level of bias.

The authors used participant ratings of task motivation in the first session as a covariate in assessing the impact of the three types of feedback on student motivation. There was a main effect for feedback condition, with task motivation being lower in the purely critical feedback condition than any other feedback condition. Results also indicated an interaction between the race and feedback conditions, with African American students reporting levels of task motivation significantly lower than White students when provided with purely critical feedback and critical feedback with a positive buffer. However, in the wise criticism condition, they reported slightly higher levels of task motivation than White students. To summarize, wise strategies that conveyed high standards coupled with the belief in the students' abilities to meet those standards eliminated the differences between African American and White students' perceptions of bias and task motivation.

The authors also assessed the participants' ratings of the evaluator's level of bias. Results indicated a marginal main effect of ethnicity, with African American students rating the evaluator as more biased than White students. Additionally, results indicated a race x feedback condition interaction. African American students provided with critical feedback and critical feedback with a positive buffer rated their evaluators as significantly more biased than White students that received the same feedback. However, when African American students received critical feedback with high standards and assurance, their perceptions of racial bias did not differ from that of White students.

In a third analysis, the authors used the participants' domain identification with writing capabilities in the first session as a covariate in assessing domain identification with writing capabilities after receiving the three types of feedback. Results indicated a marginal main effect of feedback condition, with African American and White participants having similarly lowered levels of identification with writing skills after being provided with purely critical feedback and critical feedback with a positive buffer, when compared with the wise critical feedback condition.

The authors conducted a second study which was a replication of Study 1, except this time the goal was to investigate whether increases in task motivation and decreases in perceptions of bias were due solely to evoking high standards or if it was also necessary to assure

students of their ability to reach high standards. Students were randomly assigned three different feedback conditions. In the first condition, participants were provided with unbuffered criticism without further comment. In the second condition, participants received critical feedback with the assurance that high standards were required. In the third condition, students' received critical feedback with the assurance that high standards had been set and that students were capable of meeting set standards.

Results of this study further supported and extended the results of Study 1, revealing that African American students responded significantly less favorably to purely critical feedback than White students. When critical feedback was given with the assurance that a high standard had been set, it helped to decrease perceptions of bias, but task motivation was not raised among African American participants. In contrast, when critical feedback was given with the assurance of high standards and that students were capable of meeting those standards, African American students responded more favorably in terms of perceptions of bias and task motivation when compared to White students. However, results indicated that African American and White participants displayed similar levels of identification with writing skills in the high standards and wise critical feedback conditions. This information has major practical implications regarding the strategies that should be utilized by White faculty when working with African American students. Results suggest that the same feedback can be interpreted differently based on a student's ethnicity. Results also suggest that African American students are more motivated and less likely to perceive bias on the part of White evaluators when critical feedback is coupled with high standards and the assurance that they are capable of meeting those standards.

Although only one study directly supports the use of the wise critical feedback strategy with African American students, the strategy appears promising in that it increases motivation and decreases perceptions of bias. This proposed study tested this hypothesis, as well. In the next section, research related to a second wise schooling strategy, stressing the expandability of intelligence, will be examined.

*Incremental view of intelligence strategy.* In an effort to support wise schooling theory, Steele and others have explored another wise strategy, stressing an incremental view of intelligence (Aronson, Fried, & Gold; Dweck, 1999; Steele, 1997). Steele has proposed that when

educators communicate to African American students that intelligence is expandable through hard work and training, this conveys to students that they are not at risk of being negatively stereotyped if they should encounter difficulty.

Steele's focus on the expandability of intelligence draws on past research pointing to the importance of understanding the way in which students think about intelligence in explaining their success and failure on academic tasks (Aronson, et al., 2002; Dweck, 1999, 1986; Dweck & Leggett, 1988). The debate continues among researchers as to whether intelligence is malleable or fixed (Aronson, Fried, & Gold, 2002; Gould, 1981; Neisser et. al, 1996). Both sides carry a great deal of support; however, it is more important to explore the ideologies students hold about intelligence. The view of intelligence that a student holds can influence their goals, academic performance, and their responses to challenging tasks.

In general, students can be characterized as holding one of two ideological views of intelligence. Students who hold an entity or fixed view of intelligence consider intelligence to be a fixed internal trait that cannot be changed. These students tend to set performance goals which focus on easier tasks that will successfully show their capabilities. Individuals with this view of intelligence find difficult academic situations threatening, therefore they become anxious and disengage from academic tasks (Aronson, et. al, 2002; Dweck, 1999).

In contrast, students who hold an incremental view see intelligence as expandable, with the potential to change through effort (Dweck, 1986). These students tend to set learning goals that focus on learning experiences that are challenging (Aronson 2002 et. al; Dweck, 1999). This type of student would tend to increase engagement and effort during difficult tasks (Dweck, 1986; 1999; Nicholls, 1984).

Currently, researchers have begun to investigate the potential impact that changing students' implicit theories of intelligence can have on the achievement and motivation of stigmatized groups. Steele's (1997) assertion that stereotype threat undermines the motivation and academic performance of African American students points to the possibility that African American's may hold a fixed entity view of intelligence. For example, when ethnicity is made salient for African American students, they may be more likely to protect themselves in academically challenging situations by choosing less difficult tasks that will not put them at high risk for

failure because they believe that challenging situations may show that they are not smart rather than believing that such situations are opportunities for intellectual growth.

To assess the ways in which African American students can be protected against negative intellectual stereotypes, Aronson, Fried, and Good (2002) examined the impact of manipulating African American college students' view of intelligence. The authors hypothesized that encouraging students to adopt an incremental view would lead to increased academic engagement and achievement. In this study, 42 African American and 37 White students were asked to participate in a long distance pen pal program in which they would mentor an "at-risk" middle school student. Additionally, they were asked to participate in an unrelated study at the end examining the relationship between psychology measures and grades. In reality, the "unrelated study" was a technique to obtain permission to examine students' grades and Scholastic Achievement test scores without communicating to them that the first study was intended to have an impact on their academic achievement.

Each participant then received a mock letter from a middle school student who was having difficulties in school and was asked to write a reply. In one condition (malleable pen pal), participants were asked to encourage their pen pals to work harder in spite of their setbacks. The participants were provided with written information and a video that supported the expandability of intelligence to be used in their letter. In the second condition (control pen pal), the materials provided to the participants encouraged them to view intelligence as a set of strengths and weaknesses. Thus, their pen pal letters were to encourage them to focus on their strengths. In the third condition (non pen pal), participants were simply asked to complete measures concerning beliefs about the malleability of intelligence, enjoyment and identification with academics, and experiences of stereotype threat.

The letter writing task was actually implemented to persuade the malleable pen pal group about the expandability of intelligence. Additionally, to increase the possibility of attitude change, participants from the malleable pen pal and control pen pal groups were asked to include personal examples in their letters asserting their view of intelligence, write to a second pen pal, and turn their letters into brief speeches in order to increase their belief and commitment to their view of intelligence. The study consisted of three sessions lasting one hour, spaced about ten

days apart. Several days after writing their letters, and again several weeks later, participants from the malleable pen pal and control pen pal, groups were asked to complete measures assessing their belief in the malleability of intelligence, enjoyment and identification with academics, and perceptions of stereotype threat.

Although the authors randomly assigned students to the experimental conditions, initial results revealed that the mean SAT scores, by chance, of the students in the malleable pen pal condition were lower scores than the students in both the control pen pal and non pen pal conditions. Additionally, African American participants had lower SAT scores than White participants. To determine the significance of these differences and their implications for the overall analysis, a 2 x 3 ANOVA (race x condition) was performed on participants' SAT scores. Results indicated a significant main effect of race and of condition. Thus, to correct for these differences all analyses were conducted using SAT as a covariate.

The authors assessed the impact of the intervention on the participants' beliefs about the malleability of intelligence by assessing the participants' beliefs about the malleability of intelligence one week after the intervention, and again at the end of the school year, nine weeks later to assess the effectiveness of the intervention. The results of a 2 x 3 ANCOVA (race x pen pal condition, using SAT as the covariate) indicated a significant main effect for race and pen pal condition, with African American students in all three conditions viewing intelligence as more malleable. Thus, the malleable pen pal intervention had a lasting impact on African American students' beliefs.

Another important purpose of this study was to examine the ways in which views of intelligence affected students' academic enjoyment. Results of a 2 x 3 ANCOVA (race x pen pal condition, with SAT as the covariate) indicated a significant main effect of ethnicity and condition, with African American students enjoying academics less than White students and basing their self-worth less upon academic achievement than White students. However, results indicated that African American students in the malleable pen pal condition were significantly more likely to endorse enjoying academics than African American and White students in the control conditions.

In another set of analyses, the authors examined the ways in which views of intelligence

impact students' academic identification. Results of a 2 x 3 ANCOVA (race x pen pal condition, with SAT as the covariate) indicated a significant main effect of ethnicity and marginal effect by experimental condition, with African American students being less likely to base their self-worth on academics when compared to White students. The authors hypothesized that these findings may be due in part to stereotype threat. However, results indicated that African American students in the malleable pen pal condition were significantly more likely to value academics than African American students in the control pen pal and non pen pal conditions.

The authors also investigated whether the intervention would actually lead to academic performance gains. Results indicated that across conditions White students tended to have higher grades than African American students even when controlling for SAT scores. African American students in the malleable pen pal condition received significantly higher grades at the end of the year than African American students in the other two conditions. Additionally, the pen pal interventions led to gains in the academic performance of White students in the malleable pen pal condition.

Finally, the investigators also asked participants about their perceptions of stereotype threat and negative judgment in their academic environment. Across conditions, African American students reported more perceptions of being stereotyped than White students. Thus, the intervention was not able to reduce African American students' feelings of being stereotyped, but rather changed the ways in which they reacted to threatening academic contexts.

In conclusion, the results showed that it is possible to influence students' personal views of intelligence. Additionally, changing African American students' view of intelligence led to lasting positive changes in academic performance, academic identification, and enjoyment. Although the intervention was not able to change African American students' perceptions of being negatively judged in academic contexts, it seems that this intervention was successful in protecting students from some of its negative consequences. The results provide additional direct support for Steele (1997)'s claim that communicating the incremental view of intelligence to African American students improves their academic outcomes.

Although initial research seems to point to the important impact that college student's views of intelligence can have on academic identification and academic performance, there is

little empirical research to support this claim. The proposed study will test the way in which African American students respond to instructor feedback asserting the incremental view of intelligence in terms of academic motivation and perceptions of instructor bias. In the next section, the challenge over remediation and student belongingness strategies will be discussed.

*Challenge over remediation and student belongingness strategies.* Steele's challenge over remediation and student belongingness strategies are related strategies which attempt to reduce stereotype threat by affirming African American students' intellectual potential in the classroom. Steele (1997) and others (Anderson & Pellicer, 1990; Finnan, St. John, McCarthy, & Slovacek, 1996) have discussed the inappropriateness of using remedial materials to assist at-risk students. Often, the needs of at-risk students, many of whom are African American, are addressed by placements in academic settings that emphasize the mastery of academic subskills rather than higher level skills. This strategy results in these students falling further behind academically each year due to watered down curricula (Finnan et al., 1996). Furthermore, the use of remedial materials can reinforce fears of intellectual inferiority and lead students to conclude that they do not belong within that academic domain (Steele, 1997). Thus, Steele's challenge over remediation strategy seems to attempt to directly reduce stereotypes of intellectual inferiority, thereby reinforcing students' domain belongingness in academic settings.

Recently, researchers have examined the possibility of reducing the achievement gap by accelerating the rate of instruction and decreasing remedial learning experiences (Levine, 1994; Anderson & Pellicer, 1990). This strategy presumes that all students can excel, including those from at-risk groups, when exposed to challenging curricula that focus on enhancing their strengths rather than remediating their weaknesses (Levine, 1994). As a result, accelerated schools have been developed on the elementary and middle school levels. The accelerated learning model maintains that in order to improve all student outcomes there must be changes in school philosophy and practice. Accelerated schools assert that each student's learning environment must possess: (a) a school culture which works towards a common purpose and practice of maintaining high expectations for all students, (b) a community of learners where parents, students, and all school personnel make key decisions concerning instructional practices and curricula, rather than a reliance on state level decisions to ensure empowerment is coupled with

responsibility, (c) a belief in building on and identifying strengths of students, parents, school staff, and their communities in order to overcome student weaknesses (Finnan et al., 1996).

The accelerated learning model seems to support Steele's challenge over remediation, student belongingness, and multiple perspectives strategy, which will be discussed in the next section, due its emphasis on linking classroom content to student experience through multiple teaching methods and awareness of the student's community. Although initial research on the accelerated learning model has shown gains in academic achievement, attendance, and rate of students meeting traditional gifted/talented criteria (Finnan et. al, 1996), there is little empirical research to support these claims. Additionally, there is little empirical data to support Steele's challenge over remediation and student belongingness strategies on the college level, other than his freshmen intervention program which included an emphasis on student strengths and challenging work.

*Multiple perspectives strategy.* Currently, there have been discussions among researchers pertaining to the conflict that arises between minority students and the cultural learning environment of most schools (Howard, 2001; Irvine & York, 2001). In many academic settings, teacher attitudes and curricula do not reflect an interest in cultivating the strengths and interests of African American students (Ladson-Billings, 1994; Teel, Parecki, & Covington, 1998). For this reason, Steele has proposed the *multiple perspectives strategy*, which asserts the importance of diverse teaching methods and class content when educating minority students. Varied teaching methods are believed to reduce stereotype threat by displaying an investment in different learning styles within the classroom environment which assures African American students that they are less likely to be negatively judged. Other authors support Steele's claim that multiethnic curricula, tools, and cultural understanding seem to be more successful in achieving gains among African American students (Levine & Lezotte, 2001). For example, African American students tend to be more academically successful when allowed to display different ways of learning such as cooperative learning groups, oral presentations, and grading based on effort (Irvine & York, 2001). Despite nearly universal endorsement of the importance of using culturally relevant curricula in teaching diverse students, there are few empirical studies that assess the impact of the multiple perspectives strategy.

To assess the ways in which in culturally relevant curricula impact African American

students, Teel, Parecki, and Covington (1998) conducted a qualitative study which they developed alternative teaching strategies intended to improve the academic achievement of African American middle school students at risk for school failure. As a part of a school/university collaboration, students in a college seminar course dealing with achievement motivation theory modified teaching strategies for a seventh grade World History course. Two cohorts of seventh grade students participated in this two year classroom study. Although the program was applied to all the students, it was intended for African American students who comprised approximately 80 percent of its participants across the two years. The authors hypothesized that inappropriate teaching strategies which ignore culture in curriculum design and practice contribute to the underachievement of African American students. The students in the program were pre-selected by school administration through a screening process using past school records indicating they were academically at risk and were from low-income areas in the inner city. The goal of the study was to demonstrate alternative teaching strategies and document the impact on student achievement. To assess the impact of the intervention, students were asked to participate in individual interviews, small group interviews, and to complete questionnaires at regular intervals both years to assess their attitudes towards grading systems, assignments, and instructional tools. The teachers also maintained a daily journal of observations pertaining to student responses to the alternative teaching strategies. Additionally, one of the collaborating researchers observed the classroom twice a week in order to record student responses or reactions to the alternative teaching strategies. The authors coded each source of data for instances of students' positive responses to alternative teaching methods.

Based on research presented in the course, the student researchers developed four alternative teaching strategies intended to improve the students' learning environment. One, they implemented an effort based grading strategy in which grades were determined individually, based on effort, cooperation, and quality of work. Two, they implemented a multiple performance evaluation strategy in which students' imagination and creative abilities were emphasized along with their reading and writing skills. For example, students were graded on activities such as oral narratives, art projects, group work, skits, and computer projects. Third, students were given increased responsibility and expected to take on more leadership by assisting the teacher

with classroom materials, serving as a class officer, or helping the teacher to decide which culture to cover during class discussions. Finally, the culture validation strategy was implemented by creating a classroom library with reading materials that represented the cultural background of the students, and holding book talks and weekly discussions of events relevant to the students' race and community.

The teacher, student, and research observer responses were coded using a comparative coding method to identify students' level of motivation and positive regard for alternative teaching methods. For each strategy, teacher and research observer coded responses as positive when the majority of the students in the class seemed to be enthusiastic, engaged and learning. However, when students seemed to be apathetic, disruptive, or made complaints, the strategies were considered unsuccessful. This information was collected daily and results were compared on a monthly basis. At the end of the school year, the strategies that produced positive responses at least five different months were considered as evidence to support the use of the strategy. Additionally, the findings gathered from the teacher and research observer were compared with student interviews and questionnaire results. To validate these findings, the authors utilized the triangulation method by using three sources of information.

Results indicated that in general, students put forth more effort when teachers used effort based grading. As the year progressed, students spent more time on assignments before turning them in, were more willing to revise assignments, and produced higher quality work. It is interesting to note that student questionnaires reflected a belief that their hard work led to higher grades. Generally, teacher reports indicated that student grades significantly increased from the previous school year.

In the case of the multiple performance strategy, more innovative teaching methods increased students' participation, cooperation, and on-task behaviors. The authors also noted that this method allowed students to display talents that would usually go unrecognized in more traditional academic environments. For example, students who struggled in the areas of reading or writing would have the opportunity to display their talents during map or computer exercises.

When the increased responsibility strategy was implemented students put forth greater effort and were more motivated to participate. The participants were able to brainstorm ideas

and vote on student-generated assignments. The students reported that they were less likely to complain and more likely to work hard on these assignments.

The use of the cultural validation strategy had several positive effects on the classroom environment. The students reported feeling pride in being able to read books about positive aspects of their cultural heritage. Observation data revealed an increase in on-task behaviors when teachers engaged them in discussions relevant to their community and cultural backgrounds. Many of the students reported that their teacher's commitment to cultural issues was proof to them that the teacher believed in them and treated each student equally.

The findings reported by the authors support Steele (1997)'s multiple perspectives strategy; however, the small sample size and lack of control comparison groups makes it difficult to attribute the results to the intervention. Additionally, this study, which only included middle school students, was the only research study found to support Steele's claim. However, this study does provide an interesting initial step in identifying teaching methods that seem to be received positively by African American students. The study seems to provide preliminary support for Steele's claim that diverse teaching styles and curricula help to improve the academic achievement of African American students.

*Role model strategy.* Steele's final wise schooling strategy is the presence of role models in the school setting from stereotyped threatened groups. Minority role models are thought to decrease stereotype threat by providing a direct challenge to negative cultural stereotypes about intellectual ability and demonstrating to students that stereotypes can be overcome. Although researchers have suggested that the presence of minority faculty serving as role models to students is important to minority enrollment, professional development, and increased grade point averages (Mendoza & Samuels, 1987; Wiley, 1989), there have been few studies which have directly tested this claim.

Typically, this claim of the need for African American role models is based on the ability of historically African American colleges and universities (HBCUs) to successfully retain and graduate African American students (Allen, 1992; Astin, 1982). For example, HBCUs enroll less than 25 percent of African American undergraduates, yet they produce 40 percent of the degrees awarded to African Americans (D'Augelli & Hershberger, 1993). A review of the empirical literature failed to locate studies in which the impact of same ethnicity role models on African

American college student achievement was directly examined. One study was found that examined this claim in adolescents.

Zirkel (2002) conducted a longitudinal study of 35 African American and 45 White adolescents asked to participate in a mentoring program designed for at-risk youth. As a part of the program, some students had same ethnicity and gender mentors, and some had non-matched mentors. The impact of same ethnicity/gender mentors was examined by comparing outcomes for youth that had matched mentors, non-matched mentors, and no mentor. It was hypothesized that students with matched ethnic and gender role models would show an increase in academic performance, report more achievement oriented goals, enjoy academic relevant activities, and be more likely to name adults rather than peers as role models. Although the activities of the students and their role models were scantily described, it appeared they encouraged student achievement by engaging in academically relevant activities, helping students to set goals, and exploring different careers. The author assessed students' academic performance and attitudes by developing a self-report questionnaire, conducting parent interviews, and requiring each student to keep a diary.

The author found that both African American and White students assigned to matched gender and ethnic role models performed significantly better than students in the non-matched comparison groups 14 to 18 months later. Results also indicated that African American and White students with matched role models reported more educational and academic aspirations than students with non-matched role models. Furthermore, additional analyses revealed that this pattern was stronger for African American students with matched role models, with these students reporting more academic goals than White students with matched role models. Finally, students with non-matched role models or with no role models were more likely to idolize peers and not think about their futures. Although these results are encouraging, design shortcomings limit the confidence that can be placed in these results. The small sample size and lack of random assignment to role model conditions makes it difficult to attribute the superior outcomes for the matched group to this aspect of the program. Although this was the only study that looked at achievement, other studies have examined the effect of a role model's ethnicity on outcomes other than achievement, such as academic attitudes and teacher-student relationships.

Frierson, Hargrove, and Lewis (1994) conducted an exploratory study which utilized 18 African American undergraduate students who were participants in a nine week summer research program at a major university. The authors conducted 30-40 minute interviews at the beginning and end of the summer program in order to examine the impact of the mentor's race and gender on African American students' attitude toward research, faculty-student relationships, and the research environment. At the start of the program twelve students were assigned to White mentors (nine male and three females) and six were assigned to African American mentors (three male and three females). Faculty were selected to work with students based on their interest in working with undergraduate students, the fact that they were conducting research during the summer, and match with student's research interests.

Results indicated that interviews conducted at the beginning of the program showed there was only a slight difference between students with African American mentors and those with White mentors, in terms of their perceptions of the research environment and student-faculty interactions. However, at the end of the program students with African American mentors viewed faculty-student interactions and the research environment as significantly more positive than students paired with White mentors. Interestingly, when looking at the gender of White mentors, there was only a small difference between students assigned to White female mentors and students assigned to African American mentors in terms of positive perceptions about teacher-student interactions and attitudes toward research. Although these results provide some additional support for Steele's role model strategy at the college level, there are limitations to the author's findings such as small sample size and lack of random assignment. Faculty mentors were not randomly assigned to students, rather the instructors volunteered based on their interest in being a mentor and the student's research interest, which could have contributed to some of the positive outcomes during the intervention. Additionally, the author fails to clearly state the strategies that were used by the faculty role models. However, the study does provide preliminary support for Steele's hypothesis that same ethnicity role models can have a positive impact on the academic environment of African American students.

In a recent analogue study, Grant-Thompkins and Atkinson (1997) examined the factors that contribute to African American students' perceptions of mentor effectiveness. The authors

analyzed the effects of mentor ethnicity, mentor cultural sensitivity, and African American student's level of cultural mistrust. It was hypothesized that African American mentors would receive more positive ratings than would White mentors and culturally responsive mentors would be rated more favorably than culturally unresponsive mentors. Grant-Thompson and Atkinson (1997) selected 74 African American undergraduate students from three community colleges in Southern California. Participants were required to complete a four part questionnaire consisting of (a) demographic information (b) the Cultural Mistrust Inventory (CMI) (c) the Mentor Effectiveness Rating Scale (MERS) and (d) the Cross-Cultural Mentoring Inventory (CCMI). The CMI consists of 48 questions on a seven point Likert scale designed to measure level of cultural mistrust in the areas of education, politics, the workplace, and interpersonal relationships. The MERS consisted of 10 items designed to measure perceptions of mentor effectiveness in the areas of attractiveness, trustworthiness, utility, and expertness. The CCMI is a 20 item self-report which measures perceptions of counselor cross-cultural competence. Additionally, students were randomly assigned to one of four conditions: a culturally responsive African American mentor, a culturally unresponsive African American mentor, a culturally responsive White mentor, or a culturally unresponsive White mentor. These conditions were established by creating two versions of a 10- minute audiotape of mock mentoring sessions between a male professor and a male student. The audiotape depicted an interaction between a faculty member and an African American student experiencing anxiety about transferring to a predominantly White university. The taped conversations were the same except that one mentor demonstrated cultural responsiveness by showing empathy and acknowledging the importance of cultural values and ethnicity. In contrast, the culturally unresponsive mentor was equally empathetic, but did not overtly acknowledge cultural value or ethnicity. Mentor ethnicity was manipulated by verbal and written descriptions to the student. Participants completed the MERS and the CCMI after listening to the audiotaped faculty-student conversations.

Results indicated that students perceived the mentor as more culturally competent when he was described as African American. However, when the mentor was described as White, African American students responded most favorably when the mentor was culturally responsive. In summary, mentor ethnicity and mentor cultural sensitivity affects the ways in which students view faculty members. African American mentors were viewed as a more credible source of help and as being more culturally competent than White mentors. However, ratings of cultural competence increased when White mentors addressed issues of cultural differences (Grant-Thompson & Atkinson, 1997).

Aspects of this study are consistent with Steele's role model strategy in that African American students found mentors of the same ethnicity to be more credible and culturally responsive to their needs. It is important to note that the authors also found support for his multiple perspectives strategy in that African American students found White mentors that addressed cultural differences to be more credible and culturally competent. Although this study provides initial support for the importance that African American students place on culturally competent role models, it fails to show that these role models are able to improve their academic achievement.

On the basis of these results, the authors of the first two studies support Steele's speculation that race matched role models serve as an example to African American students of their own potential in terms of educational aspirations and achievements. There appears to be a general consensus in the literature that African American role models are important for African American academic success. The few studies that have examined this proposition have not employed strong designs, but have generally found that African American role models contribute to African American students' success. Although African American students may benefit from minority mentors, the reality is that due to the scarcity of African American faculty they will have extreme difficulty obtaining them (Jacobi, 1994). For these reasons, the final study is important because although the mentor's race was important to students, the most important factor was the cultural competence of the mentor. Thus, it is imperative that White faculty find ways in which to adequately mentor African American students to facilitate positive academic adjustment.

To date, few studies have directly assessed the specific behaviors that contribute to mentor effectiveness.

*Summary.* In summary, there is accumulating evidence which supports Steele's theory that African American students can experience the academic setting differently from White students (Corbett, Wilson, & Williams, 2002). The research presented points to the importance of changing aspects of the classroom environment in order to reduce stereotype threat and improve African American students' academic outcomes. In reviewing the studies described above, several measurement limitations were small sample sizes, few studies including valid instruments to test the impact of wise strategies, and a scarcity of studies including college students. In reviewing the literature which explored Steele's wise schooling theory, the initial studies are promising, but display a clear need for more research in this area due to the scarcity of empirical research.

#### *Statement of the Problem and Hypotheses*

Research designed to investigate the achievement gap between African Americans and White college students has grown over the past few decades (Allen, 1985; Lunneborg & Lunneborg; 1986; Sherman, Giles, & Williams-Green, 1994). Researchers have begun to investigate underlying cultural and cognitive mechanisms that serve to perpetuate the achievement gap (Ogbu, 1987; Okagaki, 2001; Steele, 1997). Steele has introduced stereotype threat theory, which posits that negative stereotypes about African Americans' intellectual ability may impair their self-perceptions and motivation to engage in academic tasks contributing to the achievement gap. He and others have provided evidence that stereotype threat can affect African American students' performance on different tasks under a variety of conditions (Aronson et al., 1998; Aronson & Steele, 1995; Jencks & Phillips, 1998; Steele, 1997).

Due to a growing interest in the factors that underlie the achievement gap, strategies to counteract them have been proposed (Aronson et al., 2002; Cohen et al., 1999; Grant-Thompson & Atkinson, 1997; Steele, 1997; Teel et al., 1999; Zirkel, 2002). Drawing from stereotype theory, Steele has proposed wise schooling theory. Wise schooling theory consists of six interrelated strategies. Although each of the wise schooling strategies has some support in the research literature, there is a limited amount of research that directly tests the impact of wise schooling

strategies on African American students.

In addition to the scarcity of research directly testing wise schooling theory, past research directly and indirectly related to wise schooling theory has been based largely on children and adolescents (Teel et al., 1998; Zirkel, 2002), thereby providing a limited understanding of wise strategies' impact on college students. These studies have also had a number of methodological limitations including small sample sizes, lack of valid instruments to measure the impact of wise feedback strategies, and lack of random assignment to experimental and control conditions. These issues limit the generalizability of these studies.

In light of these limitations, the purpose of the present study is to add to the empirical support for wise schooling theory by examining the impact of feedback incorporating two wise strategies, wise critical and expandability feedback on African American college students' academic motivation and perceptions of instructor bias. In addition, Steele (1997) has proposed that students' with higher levels of academic identification are more susceptible to stereotype threat. Therefore, a secondary purpose of this study is to examine the extent to which students' level of academic identification impacts responses to different type of academic feedback.

Sixty African American undergraduate students were randomly assigned to receive three types of feedback: (a) feedback emphasizing expandability of ability (expandability feedback), (b) feedback emphasizing wise critical feedback or (c) neutral feedback. In an analogue study, students were instructed to read one of the three feedback prompts supposedly written by a White professor in an English course. All participants were asked to imagine they were the student receiving the feedback and complete two questionnaires (Appendix A and B). The questionnaires were designed to assess the students' level of academic identification, motivation, and perceptions of the professor's objectivity upon receiving the feedback.

### *Research Questions and Hypotheses*

1. Do either of the two wise strategies examined positively affect academic motivation?

Hypothesis 1-1: Type of feedback will affect African American students' level of academic motivation. Specifically, students in both the expandability and wise critical feedback conditions will report higher academic motivation than students in the neutral feedback condition.

2. Do either of the two wise schooling strategies examined result in lower levels of perceived professor bias?

Hypothesis 2-1: Type of feedback will affect African American students' level of perceived professor bias. Specifically, students in both the expandability and wise critical feedback conditions will report lower levels of perceived professor bias than students in the neutral feedback conditions.

3. Do African American students' responses to academic feedback vary as a function of their level of academic identification?

Hypothesis 3-1: There will be a positive relationship between students' level of academic identification as measured by the Domain Identification Measure and students' level of motivation across all conditions, such that students with high academic identification scores will have high motivation scores.

Hypothesis 3-2: There will be a positive relationship between students' level of academic identification and students' perceptions of professor bias, such that students that have high academic identification scores will have high bias scores.

4. Do African American students' with high academic identification scores respond more favorably to wise feedback strategies?

Hypothesis 4-1: There will be a positive relationship between students' academic identification and students' responses to wise feedback strategies. Students with high academic identification as measured by the Domain Identification measure will have higher ratings of motivation and lower levels of perceived professor bias when receiving wise feedback strategies.

## Methods

### *Participants*

A sample of 60 African American students recruited from multidisciplinary studies courses with content focused on African American studies took part in the study. Of the students participating, 38 were female, 22 were male with a variety of academic majors. Participants were eligible to participate in the present study based on their self-classification as an African American student.

### *Materials*

*The Domain Identification Measure (DIM)*. The DIM (Smith & White, 2001) is a self-report measure of the degree of identification that an individual holds with various academic domains. According to the authors, a student's level of identification in a particular domain can predict performance and motivation in that subject area. The DIM is comprised of 20 items describing students' perceived interest and enjoyment in academic domains. Each item is rated by students using a 5 point scale, ranging from 1 (strongly disagree) to 5 (strongly agree) or 1 (not at all) to 5 (very much), indicating the degree to which the statement describes the participant.

The DIM is divided into three subscales measuring identification in English (7 items), mathematics (10 items), and general academics (3 items). The DIM yields three subscale scores as well as a total summary score that reflects a student's overall general academic identification.

Factor analysis and reliability tests have been reported by Smith and White (2001) based on a sample of 1,143 undergraduates enrolled in an introductory psychology class. Participants completed the DIM in three separate mass testing sessions at the beginning of each academic quarter (January 1998 through August 1998). The authors found that the DIM yielded three distinct factors, math, English, and general academics, that accounted for 63 percent of the variation in students' scores. Internal consistency estimates for these factors were .93, .90, .75, respectively. A subsample of 98 students completed the DIM a second time, seven months later. Test-retest coefficients within the domains of math and English were  $r(96) = .89$  and  $r(96) = .56$ ,

respectively. However, scores on the general academics subscales yielded low test-retest reliability,  $r(96) = .26$ . For this reason, the authors eliminated these three items from the measure.

Smith and White (2001) also reported that the DIM has good construct validity. For instance, participants from the second sample who were classified as having high math identification answered more questions on a math exam correctly. Additionally, participants with high math identification reported higher levels of motivation and commitment to doing well on the math exam than did low academic identification participants. When the authors assessed high identifiers that performed poorly on the exam, they found these students still viewed the math exam more positively than low identifiers.

*Academic Feedback Reaction Measure.* This post-manipulation questionnaire (Appendix B) was developed for the purposes of this study in order to assess students' level of motivation and perceptions of professor objectivity upon receiving critical academic feedback. These items were adapted from the work of Cohen, Steele, and Ross (1999) in which participants' reactions were measured in the areas of motivation, perceptions of bias, and general feelings of academic identification after being randomly assigned to three feedback conditions. The questionnaire is comprised of 18 items using a Likert-scale ranging from 1 (not at all) to 5 (very much) for each item. Two scores for the Feedback Reaction Measure were calculated: level of motivation and perceived professor objectivity. High scores on motivation items are intended to indicate high levels of academic motivation, while high scores on professor objectivity indicate high perceptions of professor bias on the part of the student.

In a pilot test with 30 undergraduate students by the investigator, the items on the Academic Feedback Reaction measure were field tested. Reliability analysis of the motivation subscale yielded a coefficient alpha of .80. The alpha coefficient for the bias subscale was .80, when three weak items were eliminated.

### *Procedures*

Participants were recruited to participate from three courses that attract significant numbers of African American students at a large, diverse public university in the Southeastern United States. After permission to recruit participants was obtained from each of the instructors, the

investigator attended a class session in each class and recruited participants for the study at the end of the class period. Following an introduction by the class instructor, the investigator gave a brief overview of the study and asked for African American volunteers to participate in the study. Other students were dismissed. For the initial overview, the investigator stated:

I am conducting a study that will help to build upon current literature addressing feedback strategies that can be used by White faculty to improve teacher/student relations with African American students in the college setting. Improved teacher/student relationships have been found to increase student achievement and improve the social adjustment of African American college students. I am asking all interested African American students to participate in this study due to the need for more research in this area. The information in the study will be kept strictly confidential and no mention of any information will be made in oral or written reports that could link you to the study. Your participation is entirely voluntary and your decision whether or not to participate will have no effect on your grade in this course.

Following the exit of students not interested in participating, packets were distributed to students. Each packet contained a cover sheet with instructions, the DIM, one version of the feedback prompt, and the Reaction Measure. The packets with the three versions of the instructions were in random order, so that as they were distributed, participants were randomly assigned to conditions. Students were then asked to complete the DIM and then turn over their paper when they were done. When all students completed the DIM (Appendix A), the investigator (an African American female) instructed each student to read one of the three feedback prompts. All participants were asked to imagine they were the student in the feedback prompt receiving the feedback and then complete the two questionnaires (Appendix B). The initial instructions for each feedback prompt stated:

You are a student at a large state university. You are enrolled in a required English course in great works of Western Literature. Your instructor is Michael Linebaker, a middle-aged White professor. It is the middle of the semester and you have turned in two research papers to him, which will comprise 40 percent of your total grade. A final paper is due at the end of the semester, which will comprise 50 percent of your total grade. The remaining 10 percent of your grade is for participation in class discussions. You received a "C" on your first paper. The paper is returned with few comments. The second paper is returned with a grade of "D," and the following note is attached:

The instructions for the three feedback prompts are very similar, but vary according to each wise strategy. The expandability feedback prompt stated:

I have now reviewed two of your papers. In each paper, there have been serious problems with organization, the development of the central thesis, grammar, and punctuation. These skills can be learned and developed with hard work and will be important in many courses here at the university, as well as in your future career. You are at high risk for a “D” or “F” in this course. Please see me.

The wise critical feedback prompt stated:

I have now reviewed two of your papers. In each paper, there have been serious problems with organization, the development of the central thesis, grammar, and punctuation. This university has very high standards for written work. Your performance is unacceptable. I know you are capable of doing a better job. The insight that you have shown in class discussions about our readings does not come through in your writing. You are at high risk for a “D” or “F” in this course. Please see me.

The neutral feedback prompt stated:

I have now reviewed two of your papers. In each paper, there have been serious problems with organization, the development of the central thesis, grammar, and punctuation. You are at high risk for a “D” or “F” in this course. Please see me.

Following the completion of the Reaction Measure, all students were thanked for participating in the study, and to ensure anonymity, students were assigned identification numbers and there was no way to link student identity with responses.

## *Results*

This section begins by presenting descriptive statistics on the primary measures, followed by results relevant to each hypothesis.

### *Descriptive Statistics of Primary Measures*

Table 1 provides the means and standard deviations for the entire sample for each of the measures used in the study. (Means and standard deviations by condition are presented in subsequent tables.) Table 2 provides the intercorrelations among the dependent measures. Internal consistency analyses of the DIM measure with the entire study sample yielded a coefficient alpha of .76 for the DIMG subscale and .87 for the DIME subscale.

### *Data Analyses for Research Question One*

The first research question concerned the impact of wise school strategies on student motivation. Hypothesis 1-1 predicted that students in the expandability and wise feedback conditions would report higher academic motivation than students in the neutral feedback condition.

The proposed analysis plan for Hypothesis 1-1 was an analysis of covariance with feedback condition as the independent variable, motivation as the dependent variable, and DIME as the covariate. However, the correlation between motivation and DIME was not significant, therefore DIME was not used as a covariate. Instead, the differences among the three feedback conditions were examined with a one-way analysis of variance, followed by planned comparisons.

Table 3 presents the results of the one-way analysis of variance for Hypothesis 1-1. The predicted main effect for feedback condition narrowly missed reaching significance. Therefore, the planned comparisons were conducted. Each wise strategy mean was compared to the neutral feedback condition mean. The mean for the wise feedback condition was significantly higher than the mean for the neutral feedback condition [ $F(2,59) = 2.55, p < .05$ ]. The mean for the expandability feedback condition did not differ from the neutral feedback condition [ $F(2,59) = 0.99, p > .05$ ]. Therefore, Hypothesis 1-1 was supported, while Hypothesis 1-2 was not supported.

### *Data Analyses for Research Question Two*

The second research question concerned the impact of wise schooling strategies on students' perceptions of bias. Hypothesis 2-1 predicted that the students in the expandability and wise feedback conditions would report lower levels of perceived bias by the professor than students in the neutral feedback condition.

The proposed analysis for Hypothesis 2-1 was an analysis of covariance with feedback condition as the independent variable, professor bias as the dependent variable, and DIME as the covariate. Again, because the correlation between perceived professor bias and DIME was not significant, DIME was not used as a covariate, and the differences between feedback conditions were examined with a one-way analysis of variance.

Table 4 presents the results of the one-way analysis of variance. The means for the three feedback conditions did not differ significantly. Therefore, Hypothesis 2-1 was not confirmed. Although no differences in perceived bias were found by feedback condition, the overall mean on the bias scale 24.9 (on a scale ranging from 7-35, with higher scores indicating higher levels of perceived bias) suggests that all groups viewed the professor with some suspicion that he was biased.

### *Data Analysis for Research Question Three*

The third research question concerned the extent to which academic identification was related to both academic motivation and perceived professor bias across feedback conditions. Hypothesis 3-1 predicted that there would be a significant relationship between academic motivation and academic identification in English. Hypothesis 3-2 predicted that there would be a significant relationship between perceived professor bias and academic identification.

The proposed analyses for Hypothesis 3-1 and 3-2 were Pearson product-moment correlations. As indicated in Table 3, the correlations between domain identification in English (DIME) subscale and the motivation and bias scales were nonsignificant and close to zero. The DIM consists of three subscales, domain identification in English, domain identification in math, and domain identification in general education. The entire measure was given to participants although analyses were planned using the DIME subscale because the hypothetical scenario in the study focused on English and the DIME subscale had more items than the DIMG subscale.

Although the DIME was not significantly correlated with motivation or bias, the DIMG subscale was. This pattern of results suggests that there may be a relationship between students' general identification in education and their level of motivation and perceived bias. This possibility will be explored in the discussion section.

#### *Data Analysis for Research Question Four*

The fourth research question concerned the impact of students' level of domain identification in English on their academic motivation and perceptions of bias within feedback conditions. Hypothesis 4-1 predicted that the students with high academic identification in English would have higher levels of academic motivation and lower levels of perceived bias when feedback was given using either of the wise schooling feedback strategies.

The proposed analysis for Hypothesis 4-1, was a 2 x 3 analysis of variance with two levels of DIM (high and low) identified using a median split, and three levels of feedback. Across all feedback conditions students high and low in academic identification did not differ significantly in terms of academic motivation or perceived bias. Although the analyses indicated that there were no significant differences in motivation or bias for students with high and low identification in English, the cell means were graphed to look for trends or patterns. Some of the differences were in the predicted direction (see Figure 1 and 2), suggesting that with greater power or more sensitive measures the predicted relationships might have been found.

Table 1

*Descriptive Statistics for Primary Measures*

Measures	Range of scores	Mean	Standard deviation
Motivation	22-39 (9-45)	32.9	4.19
Bias	12-33 (7-35)	24.9	3.84
DIME	11-35 (7-35)	27.8	5.28
DIMG	9-15 (3-15)	14.1	1.44

Note. Scores in parentheses represent the maximum possible range.

Table 2

*Intercorrelations Among the Dependent Measures*

DIME	DIMG	Motivation		Bias
DIME	—	.10	-0.07	-0.03
DIMG		—	0.34**	0.24*
Motivation			—	-0.10
Bias				—

\* marginally significant,  $p < .06$

\*\*  $p < .05$

Table 3

*Analysis of Variance Examining Differences in Motivation by Feedback Condition*

			Mean	Standard deviation		
Expandability feedback (n=20)			33.05	2.82		
Neutral feedback (n=20)			31.35	5.41		
Wise feedback (n=20)			34.25	3.56		
Source	df	SS	MS	F		p
Feedback	2	84.93	42.46	2.55		0.087
Error	57	949.25	16.65			
Total	59	1034.18				

Table 4

*Analysis of Variance Examining Differences in Perceived Bias by Feedback Condition*

			Mean	Standard deviation		
Expandability feedback (n=20)			25.40	4.63		
Neutral feedback (n=20)			24.00	4.20		
Wise feedback (n=20)			25.55	2.23		
Source	df	SS	MS	F		p
Feedback	2	29.23	14.61	0.99		0.37
Error	57	839.75	14.73			
Total	59	868.98				

Table 5

*2 x 3 Analysis of Variance Examining Differences in DIME and Motivation*

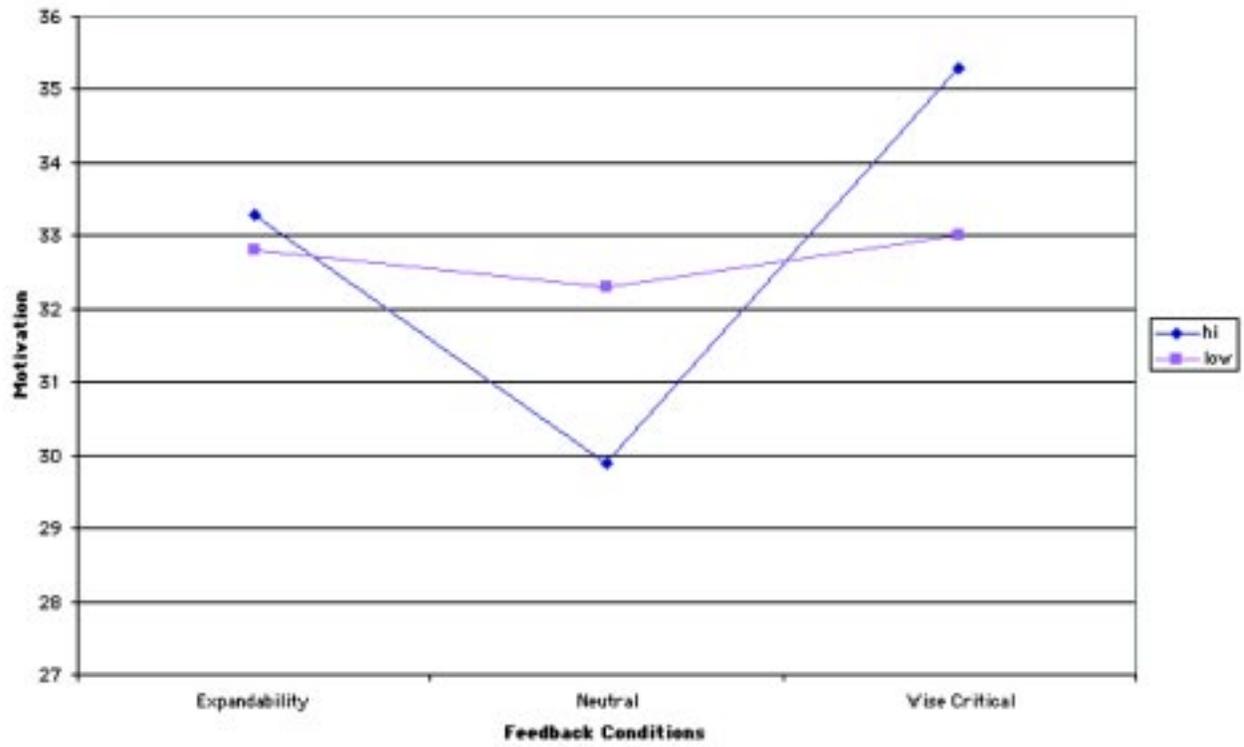
Source	df	SS	MS	F	p
Feedback	2	84.93	42.46	2.57	0.086
DIME	1	0.23	0.23	0.01	0.905
Feedback*DIME	2	55.54	27.77	1.68	0.196

Table 6

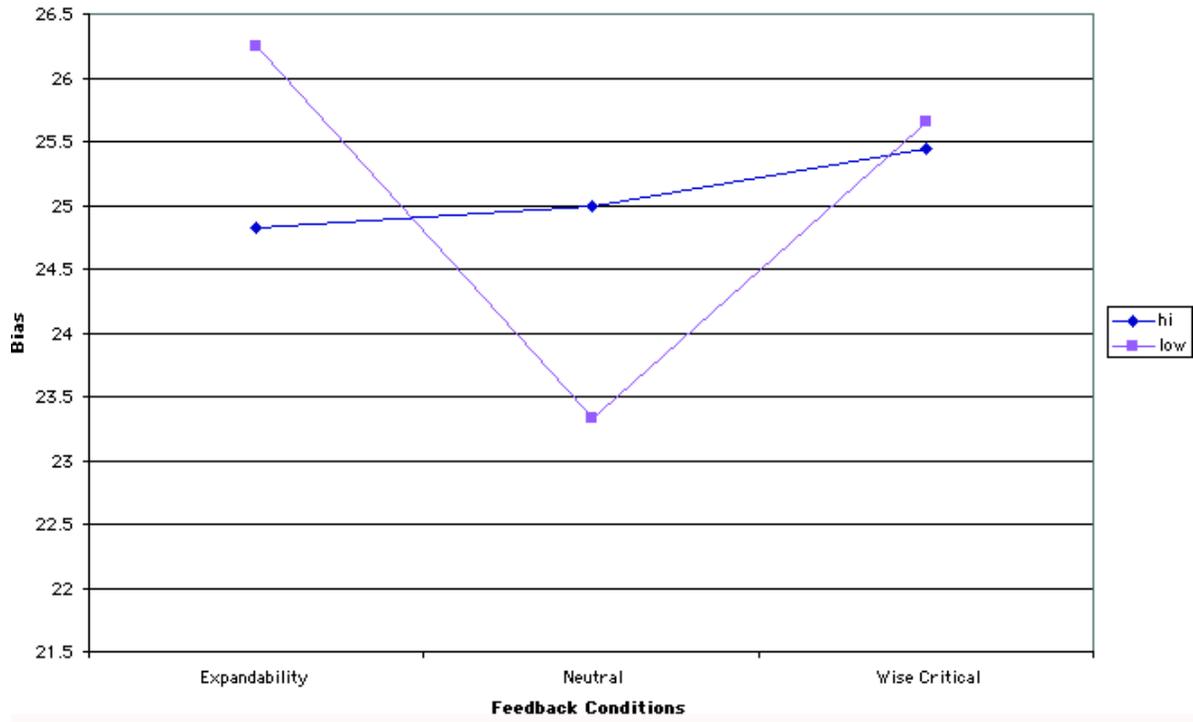
*2 x 3 Analysis of Variance Examining Differences in DIME and Perceived Bias*

Source	df	SS	MS	F	p
Feedback	2	29.23	14.61	0.97	0.386
DIME	1	0.001	0.001	0.00	0.992
Feedback*DIME	2	23.18	11.59	0.77	0.469

Figure 1. Differences in Motivation for High and Low Identifiers



**Figure 2. Differences in Bias for Hi and Low Identifiers**



## *Discussion*

African American college students at predominantly White universities face a number of obstacles that can hinder their progress and ultimately their overall success. Steele (1997) has proposed a number of “wise schooling” strategies that may enhance African American students’ motivation and engagement when facing difficult academic tasks. The purposes of the present study were to: (a) examine the impact of two “wise schooling” strategies on the academic motivation of African American students, (b) examine the impact of wise strategies on students’ perceptions of professor bias, and (c) examine what role students’ level of academic identification plays in their response to wise strategies. The study used an analogue format in which three groups of students indicated how they would respond to three different types of feedback critical of their writing from a White English professor. Four hypotheses based on wise schooling and stereotype threat theory research were tested using a combination of experimental and correlational methods.

In the first section, the results related to the four hypotheses are discussed, as well as the results of additional analyses relevant to each hypothesis. In the second section, the limitations of the study are described. The last section contains a discussion of the implications of the study and directions for future research.

### *Discussion of Results for Each Hypothesis*

*Hypothesis One.* Based on findings from past research that indicated wise schooling strategies increased academic achievement for African American students (Cohen et al., 1998), Hypothesis One predicted that students receiving either of the two “wise schooling” feedback strategies would report higher levels of academic motivation than students receiving neutral feedback. This hypothesis was partially supported in that students who received wise critical feedback reported higher levels of academic motivation when compared to students receiving neutral feedback. This finding extends previous research testing the effect of wise critical feedback on students’ academic motivation (Cohen et al., 1998). Steele (1997) has suggested that wise schooling strategies can increase African American students’ academic motivation; however, no study has examined the use of wise feedback strategies in the professor-student relationship. Although in an analogue format, the results of the present study suggest that

professors' use of critical feedback strategies may play a role in maintaining African American students' academic motivation in the face of negative feedback about their academic performance.

However, Hypothesis One was only partially confirmed because expandability feedback did not significantly increase students' academic motivation when compared to the neutral feedback condition. Although Steele (1997) has suggested that emphasizing the expandability of intelligence in feedback to African American students can improve academic motivation, the present study is the first to test this claim directly as it relates to the student-professor relationship. There are a number of possible reasons for the failure to find higher academic motivation in the expandability feedback condition.

One possible explanation for the nonsignificant relation is related to the feedback prompt that was provided to students in the expandability condition. It is possible that the type of feedback provided to students in the expandability condition was so atypical that students discounted it. The expandability condition was intended to convey feedback which was critical of the students' writing skills and at the same time indicated the professor's belief in the student's future career at the university. However, it is possible that the wise critical feedback and neutral feedback more closely resembled the type of feedback that African American students would expect to receive from a professor. The students may have felt that it was implausible for a professor to convey a strong belief in their future careers, while at the same time criticizing their writing ability. Past research has indicated that many African American college students report having negative encounters with White faculty on predominantly White campuses (Allen, 1985; Sherman, Giles, & Williams-Green, 1994). Thus, students may have expected feedback that was more critical in nature due to their past experiences with faculty, and therefore students doubted the sincerity of the expandability feedback provided by the professor. More research is needed to fully explore this issue.

A second possible explanation is that the critical feedback provided by the "mock" professor in the expandability condition did not communicate its intended message to the students. The expandability prompt was designed to convey both a concern about the student's writing and the belief that the student had the ability to master the skills he or she lacked. This

pairing of criticism with optimism about skills development was hypothesized to be less likely to decrease academic motivation than criticism alone (the neutral feedback prompt), because it was less likely to engender doubts about the student's potential and future at the university. The feedback prompt either may have failed to convey the notion of expandability, or the message may not have been strong enough to convince students that the professor believed in them. Unlike the design of the wise feedback prompt in the present study, there were few models of expandability feedback in the research literature that could be used as examples when creating the expandability prompt.

Although previous research has indicated that one's view of intelligence as fixed or malleable can affect motivation for school tasks (Dweck, 1999), most of the manipulations designed to convey beliefs about the expandability of intelligence have been much more complex than the rewording of a single statement. For example, earlier research (Aronson et al., 2002) utilized mentors that provided students with written material and videos that conveyed the expandability of intelligence. Future research may require the use of more elaborate prompts, manipulations that involve extended interactions between professor and student, or experimentation with the use of several prompts that vary in their wording and detail. This research could assess whether there are any variations in wording that are effective in conveying messages to students about the expandability of intelligence.

Finally, had the present study made use of qualitative as well as quantitative methods in a multimethod design, more detailed information about student reactions to the prompts could have been obtained. This type of design would have allowed greater certainty about why the hypothesized effect for the expandability prompt did not occur. For example, had students been interviewed after the study about their perceptions of the expandability prompt, it would have been possible to determine whether or not they perceived the intent of the expandability message, or found it believable. One direction for future analogue research on student reactions to academic feedback would be to follow any study manipulations with post-study interviews to determine students' interpretations, reactions, and attributions regarding the prompts used in the study.

*Hypothesis Two.* The second major research question addressed whether type of feedback would affect students' level of perceived professor bias. Steele (1997) has proposed that African

American students are susceptible to stereotype threat due to pervasive negative stereotypes about their intellectual ability. Furthermore, he has stated that African American college students are at high risk for stereotype threat because they are likely to view academics as an important part of their lives. For this reason, highly identified African American college students may be more likely to experience certain aspects of stereotype threat such as performance decrements and defensiveness when receiving negative feedback concerning their academic performance. According to Steele (1997), “wise schooling” strategies may reduce stereotype threat or African American students’ concerns about being unfairly judged by conveying a sense of belief rather than doubt about their academic ability. Thus, Hypothesis Two predicted that students’ receiving the expandability and wise feedback strategies would report lower levels of perceived professor bias than students’ receiving neutral feedback. However, when African American students’ responses to the two wise strategies were examined, perceptions of professor bias were not significantly reduced. These results were somewhat surprising and warrant further investigation.

An examination of the means in Table 1 suggests that students in all three groups tended to perceive the professor in the prompt as biased. Overall, the students in the current study seemed to have a general feeling of skepticism toward the professor in all three feedback conditions. One possible explanation for the failure of the wise strategies to lower students’ perceptions of bias could be that it is more difficult to lower students’ perceptions of bias than to increase their motivation. This explanation would account for the increase in academic motivation that was observed in the wise critical feedback condition, without a reduction in perceived bias.

A second explanation is that a stronger manipulation including the completion of an actual academic task may have been necessary to induce sufficient threat to evoke defensiveness and concern about academic performance. If more threat had been experienced by students, perhaps greater differences among the feedback conditions would have been observed. Although the relatively high levels of suspected bias found in all conditions argues against this interpretation (see Table 1), previous research has suggested that African American students regard feedback from White evaluators with some suspicion (Crocker et al., 1991).

For example, previous studies of stereotype threat have made more direct attempts at evoking threat in African American students (Aronson & Steele, 1995; Cohen et al., 1999). Past

research has provided critical feedback based on actual academic tasks performed by the student (i.e., writing and math tasks) given prior to administering the post-manipulation measures. Thus, the analogue format of the current study may have been too weak a manipulation to evoke threat and then lower bias. Perhaps if students were given “mock” feedback based on performance on an actual academic task, more threat would have been produced in the African American students which would have produced a greater response to the “wise schooling” strategies.

A third possible explanation for the lack of relationship between wise schooling feedback and perceptions of professor bias could be that the current study’s reaction measure contained a poor scale for bias. Perhaps the bias scale did not accurately assess students’ feeling of bias, which could account for the failure of the wise schooling strategies to reduce student bias. However, past wise schooling research where perceptions of bias have been found used bias measures consisting of only one or two items (Cohen, et al., 1999). The present study added more items to measure bias in an attempt to provide a better measure of students’ perceptions of bias, so this explanation is unlikely.

A final possible explanation for the lack of relationship between wise schooling feedback and perceptions of professor bias could be due to the class standing of the students sampled in the current study. Steele (1997) initially tested the wise schooling theory by implementing an intervention program for African American freshmen students at a predominantly White university. Freshmen may be less familiar with the type of feedback that is usually provided by faculty and therefore more susceptible to experiencing stereotype threat and perceptions of bias when receiving critical feedback. It is possible that it is more difficult to evoke threat and manipulate the perceptions of more experienced students. Although class standing was not directly assessed in the present study, the students sampled were enrolled in upper level multidisciplinary studies courses which indicated that they may have been more experienced students. Had the critical feedback evoked more threat, more variability among the feedback conditions may have been observed. Implementing wise strategies in students’ freshmen year may be an important area for future research due to the relatively low retention rates among African American college students (Allen, 1992; Hughes, 1987). Future research should also consider the academic class standing

of the students' in order to provide a better assessment of the impact of "wise schooling" strategies.

*Hypothesis Three.* Hypothesis Three predicted that academic identification would be related to academic motivation and perceptions of professor bias. Specifically, it was predicted that African American students with high academic identification would also have high academic motivation and increased perceptions of professor bias. As previously mentioned, a critical aspect of Steele (1997)'s stereotype threat theory is the disidentification hypothesis, which concerns students' level of identification with academics. The disidentification hypothesis states that some African American students may respond to stereotype threat by disengaging from academic domains in order to protect their own self-esteem in challenging academic settings they perceive to be threatening. When they disengage, negative feedback does not affect their motivation or evoke defensive responding (believing that the professor is biased). Thus, highly academically identified students are the most vulnerable to decreased motivation and most likely to perceive professors as biased.

Although Steele (1997) has hypothesized that academic identification and perception of bias are related to degree of academic identification, this hypothesis has not been tested directly. Steele did not measure academic identification directly in his studies (Cohen, et al., 1999). Past research has utilized SAT scores and student grades to assess students' identification with college (Steele, 1997; Steele & Aronson, 1995).

The present study used the DIME (Smith & White, 2001) as a pre-measure to assess students' level of identification with English, and found no relationship between academic identification and motivation or bias. The DIME is a measure specifically designed to assess academic identification. Items on the DIME concerned how much students enjoy the area of English, students' academic performance in English, and the importance of English in the life of the students.

One possible reason for the failure to find these relationships is that no students were low in academic identification. As a result, restriction in range on the DIME led to an insignificant correlation between the DIME and motivation. This possibility is consistent with Steele's (1997) speculation that all African American college students are highly academically identified because

they must be highly academically identified to have reached that level of academic success. However, the wide range of scores on the DIME (see Table 1), argues against this interpretation. A second possible reason for the failure to confirm Hypothesis Three is that DIME is a poor measure of students' academic identification with the area of English. For example, the items on the DIME include questions about the extent to which students enjoy English and find English important to their lives. These questions may tap into students' general feelings toward English, but may not assess their motivation toward difficult academic tasks. However, Smith and White's (2001) domain identification measure was intended to be a valid and reliable measure of students' general identification with academics and specific academic areas. They found that students indicating high identification with a particular subject area, also exhibited better performance with correlating academic tasks.

A third possibility is that students do not strongly identify with one academic area, but academics and educational attainment in general. Therefore, one would expect to find a relationship between overall identification with the academic domain and motivation or bias, but not identification with a specific academic area. Support for this argument can be found in the significant correlation between DIMG and the motivation and bias measures (see Table 2). Items on the DIMG, deal with students' level of identification with academics and being a college student. The DIMG subscale was not the primary measure in this study because it only contained three items, which limited the amount of confidence that could be placed in this scale and also because of its low test-retest reliability (Smith & White, 2002). Although better psychometrics and a better match with the task made the DIME the best choice as a dependent measure. It appears that general academic identification may be a more important factor for African American students than identification with a specific academic area. Further research is needed that explores the construct of academic identification and whether it is domain specific.

*Hypothesis Four.* Hypothesis Four predicted that students classified as high academic identifiers would have higher academic motivation and lower perceptions of bias when receiving wise feedback strategies. Steele (1997) postulated that highly academically identified African American college students are more susceptible to experiencing stereotype threat, and its debilitating effects. Therefore, they would have lower motivation and perceive more bias in the

neutral feedback condition than students with lower academic identification who would not see negative feedback about academics as a direct threat. In contrast, highly identified students in the two “wise schooling” conditions would show greater improvements in motivation and more reductions in perceived bias than students lower in academic identification. However, the predicted interaction between level of academic identification and feedback condition was not found.

Although the current study failed to support Hypothesis Four, a further investigation of the means by feedback condition revealed some trends in the intended direction. As postulated by Steele (1997), high identifiers in the neutral feedback condition had lower motivation scores than the low identifiers in the neutral feedback condition. Additionally, high identifiers in the wise critical strategy condition scored higher in terms of academic motivation than the low identifiers receiving the same wise feedback. Although neither of the effects reached significance the means were in the predicted direction. However, means were quite similar for the high and low identifiers in the expandability condition, again suggesting that this condition was ineffective.

In terms of perceptions of bias, high identifiers in the neutral feedback condition had higher levels of bias than low identifiers in the neutral feedback condition. In contrast, high identifiers in the “wise schooling” conditions tended to have lower perceptions of professor bias than low identifiers receiving “wise schooling” feedback. Thus, the high identifiers seemed to be more susceptible to stereotype threat except when provided with “wise schooling” strategies which seemed to decrease the impact of stereotype threat on students’ motivation and bias. Although the findings were not significant, these results seem to support previous work and suggests the need for further exploration.

One possible explanation for the nonsignificant findings is that most African American students enter college as high identifiers. This interpretation is supported by the high overall mean on the DIME. Although Steele (1997) claimed that most African American college students were highly academically identified, he had not directly tested this claim. The author’s rationale for testing for high and low identifiers was that it is possible that a number of African American students may enter college as low academic identifiers based on a need to shield

themselves from potential negative experiences in college. Many African American students are aware of the research highlighting the potential for their negative outcomes in college. Thus, at the outset of study it seemed possible that some students may enter college as low academic identifiers as a protective measure if negative experiences occur. Trends might have reached significance if there had been a broader range of high and low identifiers. Subsequent studies that use larger sample sizes may help to combat the restricted range of high and low identifiers. More research is needed to examine whether there are high and low identifiers in the college setting as well as the impact of wise strategies on the two groups. Additional research would also require a more precise measure of students' academic identification with college.

As discussed earlier, possible reasons for the failure of the study to find a relationship between students' academic motivation and DIME were the students' lack of identification with the area of English. The wise strategies may have made a stronger impact on students' feelings of motivation and bias if their academic self-concept was more strongly related to the critical feedback provided by the professor. Additionally, obtaining more feedback from African American students concerning their impressions upon entering predominantly White universities would provide more information about their academic self-concepts. A study that includes more feedback from the students sampled could further examine students' feelings about their level of academic identification and general impressions of the critical feedback provided by the professor.

#### *Limitations of the Study*

When interpreting the results of this study, several limitations need to be considered. One of the most important limitations of this study is its analogue format. Students were asked to imagine that they were receiving critical feedback on a writing assignment from a White professor. Past research required students to complete an actual academic task before receiving critical feedback (Aronson & Steele, 1995; Cohen, et al., 1999), which probably would have created a more threatening situation for students. In turn, a more threatening task might have produced greater variability among the feedback conditions due to the stronger manipulation. A stronger manipulation might have not only raised students' suspicion of their professor, but also created enough threat where the "wise schooling" strategies may have lowered bias.

A second general limitation of this study concerns the level of threat the students experienced. The current study did not specifically measure the level of threat experienced by the students. However, past research has shown that even when there was evidence to support that African American student were experiencing stereotype threat, students tended to deny it (Steele & Aronson, 1995). Previous research has shown that students are not aware that they are experiencing stereotype threat, therefore making it difficult to directly measure (Steele, 1997).

Another general limitation concerns the potential impact of the class standing of the students in the present study compared to those in earlier studies. The students included in the present study ranged from freshmen to seniors. Steele (1997)'s preliminary work tested the impact of wise strategies on freshmen students. Freshmen students may be more susceptible to stereotype threat due to their lack of experience with the college setting. Future research may produce stronger effects for wise strategies if focused on freshmen students rather than the college population at large.

A fourth more specific flaw in the design of the current study may have been the message contained in the expandability condition. The expandability feedback may not have been strong enough to produce changes in students' motivation and perceptions of bias. Past research that has utilized the expandability feedback strategy communicated the malleability of intelligence over time with several detailed explanations and prompts (Aronson, Fried, & Good, 2002). The current study may have needed a stronger message about the expandability of intelligence in order to impact students' academic motivation and perceptions of professor bias. Furthermore, the results indicate that bias may be more difficult to manipulate indicating the need for a stronger expandability message. Future research examining expandability feedback must examine the most appropriate way to convey the expandability feedback strategy.

The results of this study provide initial information in better understanding the impact of "wise schooling" strategies on the academic outcomes of African American students in the college setting. However, the current study also raises many questions, therefore additional research is needed concerning the potential ways in which wise school strategies can be best utilized at predominantly White universities to improve the academic achievement of African American college students. Research in this area is imperative in order for African American

students to continue to matriculate successfully through predominantly White universities.

### *General Discussion*

African American students who go to college have generally been successful in academics leading up to college. In college, they face increased academic expectations and more criticism of their work and skills from professors. Steele and others have argued that aspects of the university that have been traditionally considered neutral for all students could evoke more threat in African American college students (Aronson, Quinn, & Spencer, 1998; Steele, 1997). This threat can lead to lower academic motivation, increased anxiety, and result in performance deficits. Wise schooling theory is an attempt to counter the negative results of stereotype threat.

The present study tested predictions based on the literature of the stereotype threat and wise schooling theory. Although the study has used an analogue format, it is the first study to randomly assign students to different “wise schooling” conditions in order to assess the impact of the strategies on African American students. Several of the hypotheses in the present study were not confirmed. However, the finding that wise critical feedback can increase or maintain African American students’ motivation in the face of negative feedback is potentially important. It lends support to Steele’s “wise schooling” theory (1997) and also suggests a relatively simple intervention that can ameliorate some of the negative experiences African American students may encounter when entering predominantly White universities.

Furthermore, the simple experimental paradigm used in the present study suggests a relatively easy way to examine the impact of various “wise schooling” strategies or ways of implementing them before large scale interventions are tried. For example, the message contained in the expandability feedback condition could be easily changed to examine its effects on students’ academic motivation and bias.

Although not a primary focus of the present study, the finding that there was a general level of skepticism and suspicion among African American students is of note. Past studies have assessed students’ impressions of White evaluators (Cohen et al., 1999; Crocker et al., 1991); however, this was the first study to examine African American students’ impressions of a White professor within the context of stereotype threat and wise schooling theory. As the present study

only used African American students, it is not clear whether White students would have been similarly concerned about the professors' possible bias. However, if African American students reject negative feedback because they believe a professor is biased, this may interfere with their learning.

The finding that DIMG was related to motivation and bias and DIME was not is another potentially important finding in the present study. Although more research is needed in the area, the present findings suggest that African American students may place more value in the general domain of education rather than a specific academic area. Perhaps students feel better equipped to protect themselves when placing more emphasis on their identity as a student because there is more potential for failure and critical feedback in a specific academic course.

#### *Practical Implications and Directions for Future Research*

Several directions for future research have been delineated in the discussion of specific hypotheses and the limitations section. Therefore, directions for future research will be briefly summarized here.

In terms of future analogue studies, the present study provides a number of ideas that could be incorporated into new studies. First, it would be important in future studies to utilize a larger sample size. With a larger sample size, perhaps the trends found in differences between high and low identifiers in the present study might have reached statistical significance. Second, future studies might use an exclusively freshman student sample. Freshman students are less familiar with college and more uncertain of their skills. This unfamiliarity might elicit more stereotype threat reactions that would, in turn, lead to greater need for "wise schooling" feedback strategies and stronger effects when they are implemented. A future analogue study could also be improved by using a measure of students' general identification with being a college student rather than identification with a specific academic subject. This type of measure might provide more information about the ways academic identification is related to students' academic motivation and perceived professor bias. Finally, a multimethod design should be used in subsequent studies to gain more information concerning students' reactions to the different "wise schooling" feedback conditions.

Intervention studies are needed that follow up on the results of this and any future analogue studies. For example, a university could train some professors to communicate using wise school strategies, and then examine the impact of the alternate communication style on students' motivation, perception of professor bias, and actual grades received in the academic course. This type of study would provide important information about whether increased motivation and lower bias would eventually increase academic achievement in the college setting. With care, such a study could include random assignment to "wise schooling" and control classrooms. It is hoped that as more information becomes available about the efficacy of "wise schooling" strategies and how they can be used effectively to communicate confidence in African American students' academic abilities, it will be possible to conduct such a study.

In terms of practical implications, although these results are preliminary, they provide an important direction for intervention in college settings and point to the need for college professors to be aware that their communication patterns may have unintended effects on African American students. Because wise strategies attempt to convey important academic information while reinforcing students' academic self-concept, it would seem that this intervention could be advantageous to the academic outcomes of all college students. "Wise schooling" strategies can be easily implemented into everyday interactions with students. Should further evidence support the use of "wise schooling strategies," school psychologists may play an important role in providing this information to college professors and teachers of adolescents. Through consultation, school psychologists can work to assure that White faculty and African American students experience positive teacher-student interactions. It is important for professors and teachers to have an awareness of the anxiety and performance decrements that some African American students face in the classroom. "Wise schooling" strategies are an important direction for intervention that offers a promising means to change the potentially negative professor-student interactions sometimes experienced by African American students into positive interactions that promote both academic growth and self confidence.

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## Appendix A

## SUBJECT INTEREST RATING

Using the following 5-point scale circle the number that best describes how much you agree.

	<i>Not At All</i>			<i>Somewhat</i>		<i>Very Much</i>
1) How much do you value being a college student?	1	2	3	4	5	
2) Do you think academics are an important and/or necessary part of your life?	1	2	3	4	5	
3) How important is it to you to do well on standardized math tests like the S.A.T?	1	2	3	4	5	
4) How much do you enjoy math related subjects?	1	2	3	4	5	
5) How much do you enjoy English-related subjects?	1	2	3	4	5	
6) How likely are you to be able to take a job in a math-related field?	1	2	3	4	5	
7) How much is math a part of who you are?	1	2	3	4	5	
8) How important is being a student to you?	1	2	3	4	5	
9) How important is it to you to be good at math?	1	2	3	4	5	
10) How important is it to you to be good at English?	1	2	3	4	5	

Please circle the number that best describes you for each of the statements below using the following scale:

	<i>Strongly Agree</i>			<i>Neutral</i>		<i>Strongly Disagree</i>
11) I learn things quickly in English classes.	1	2	3	4	5	
12) Mathematics is one of my best subjects.	1	2	3	4	5	
13) English is one of my best subjects.	1	2	3	4	5	
14) I get good grades in English.	1	2	3	4	5	
15) I have always done well in math.	1	2	3	4	5	
16) I'm hopeless in English classes.	1	2	3	4	5	
17) I get good grades in Math.	1	2	3	4	5	
18) I do badly in tests of Math.	1	2	3	4	5	
	<i>Very Poor</i>			<i>About the same</i>		<i>Better than average</i>
19) Compared to other students, how good are you at math?	1	2	3	4	5	<i>Excellent</i>
20) Compared to other students, how good are you at English?	1	2	3	4	5	

## Appendix B

## REACTION MEASURE

Use the following Likert scale (1-not at all to 5-very much) to circle the number that best describes how you would feel if you were this student and received the instructor's feedback.

	<i>Not At All</i>			<i>Somewhat</i>		<i>Very Much</i>
1) To what extent would you feel that it would be possible to bring up your grade on the final paper?	1	2	3	4	5	
2) How much interest would you have in improving your course grade?	1	2	3	4	5	
3) To what extent would you be motivated to improve your writing after reading this note?	1	2	3	4	5	
4) How likely is it that you would set up a meeting with this professor to discuss your paper?	1	2	3	4	5	
5) If you saw this professor, how likely would he be to help you?	1	2	3	4	5	
6) How likely is it that you would seek extra help from this professor?	1	2	3	4	5	
7) How likely is it that you would seek extra help from someone <u>other</u> than this professor?	1	2	3	4	5	
8) How important would it be for you to do a good job in this course?	1	2	3	4	5	
9) How likely is it that you would use the comments provided by the professor in order to improve your grade?	1	2	3	4	5	
10) How much would you believe that the professor's comments were based on your actual performance on the research papers?	1	2	3	4	5	
11) How concerned would you be that your research paper grades were based on other factors, such as the professor's personal feelings toward you?	1	2	3	4	5	
12) Would you feel this professor was capable of grading you objectively?	1	2	3	4	5	
13) How likely is it that the professor grades too harshly?	1	2	3	4	5	
14) How concerned would you be that this professor was biased?	1	2	3	4	5	
15) How concerned would you be that the professor was going to grade your final paper fairly?	1	2	3	4	5	
16) How likely is it that you would drop this course after receiving the professor's comments?	1	2	3	4	5	
17) How likely is it that you would show your paper to a trusted classmate or professor in order to assess whether you have been graded objectively?	1	2	3	4	5	
18) How likely is it that you would avoid this professor after receiving this note?	1	2	3	4	5	