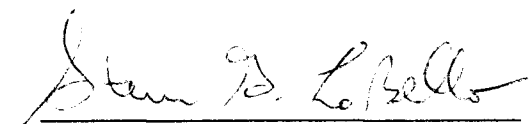
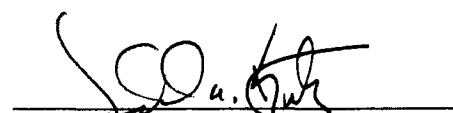


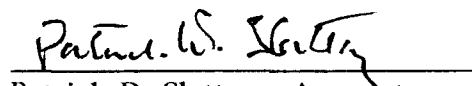
THE SELF-PERCEPTION PROFILE FOR COLLEGE STUDENTS: CONSTRUCT
VALIDITY OF THE INTELLECTUAL ABILITY AND
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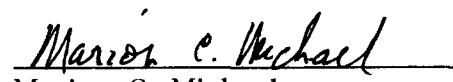
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THE SELF-PERCEPTION PROFILE FOR COLLEGE STUDENTS: CONSTRUCT
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SCHOLASTIC COMPETENCE SCALES

Claire Marie Skowronski

A Thesis
Submitted to
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VITA

Claire Marie Skowronski, daughter of Simeon and Grace (LaRock) Berube, was born March 3, 1963, in Ticonderoga, New York. She graduated from Schroon Lake Central High School in 1981. From September 1982 to September 1984, she attended the Albany Medical Center School of Radiologic Technology in Albany, New York. Upon completing this program, she attended the George Washington University Hospital School of Radiation Therapy Technology through September, 1985. She was employed as a radiation therapy technologist for five years following completion of that program. During that time, she pursued the Bachelor of Science degree in the Radiologic Sciences from Midwestern State University in Wichita Falls, Texas, receiving that degree in May, 1990. She entered the Graduate School at Auburn University at Montgomery in January, 1992. She has been married to Michael Skowronski, son of Anthony and Irene (Zalewski) Skowronski, since December, 1988.

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THESIS ABSTRACT

THE SELF-PERCEPTION PROFILE FOR COLLEGE STUDENTS: CONSTRUCT
VALIDITY OF THE INTELLECTUAL ABILITY AND
SCHOLASTIC COMPETENCE SCALES

Claire Marie Skowronski

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The purpose of this study was to establish construct validity of two scales of the Self-Perception Profile for College Students by demonstrating that students' self-predicted grades would be more highly correlated with their self-concepts in the domain of Intellectual Ability, while their actual grades would be more highly correlated with Scholastic Competence. A secondary hypothesis investigated whether there were gender differences for these scales. One hundred ninety undergraduate students in eleven sections in an introductory psychology course (or the equivalent) served as subjects. Subjects were asked to predict their letter grade on a regularly scheduled examination, and then complete items pertaining to the Intellectual Ability and Scholastic Competence scales from the Self-perception Profile for College Students, a self-report questionnaire designed with the structure alternative

format created by its authors. Immediately following release of the grades after the students took the exams, each subject completed the same items from the profile. Analysis of covariance was carried out with class used as a blocking variable. For each dependent variable, the respective pretest ratings were used as the covariate. Actual and predicted grades were used as categorical variables. Results demonstrated that in each case, the covariate was significant, but the predicted correlations were not. A series of 2x2 ANOVAS indicated that both traditional and nontraditional students who predicted an A/B scored significantly higher on both IA and SC than students who predicted a C or less. When all students were categorized according to predicted and actual grade, there were no significant differences within groups on the pre- and post-test measures of Intellectual Ability. A significant difference was found on the posttest measure of Scholastic Competence between students who predicted and received their expected high grades and those students who predicted high grades but received low ones. No significant difference was found between these two particular groups on Scholastic Competence on the pretest measure. When the data for the nontraditional students were dropped from the analyses, the difference on SC between A/B predictors who actually received A/B and A/B predictors who actually received a C or less became insignificant. No significant gender differences were found for the sample as a whole or for the traditional students separately.

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THE SELF-PERCEPTION PROFILE FOR COLLEGE STUDENTS: CONSTRUCT
VALIDITY OF THE INTELLECTUAL ABILITY AND
SCHOLASTIC COMPETENCE SCALES

According to Neemann and Harter (1986), there has been a renewed interest in the concept of the self among many groups, including developmentalists, personality theorists, social learning theorists, and cognitive-attributional theorists. The self is now recognized as a cognitive construct, and this has legitimized research in this area (Neemann and Harter, 1986).

Many theories of the self and self-concept have been advanced by psychologists over the years. Gordon Allport, for example, refers to the unifying core of the personality not as the "self," but as the proprium (Allport, 1961). According to Allport (1961), the proprium is made up of eight different aspects of personal existence, each of which develops at a different time in life. These eight aspects are: (a) the sense of bodily self, (b) the sense of continuing self-identity, (c) self-esteem, (d) self-extension, (e) the self-image, (f) the self as rational copier, (g) propiarte striving, and (h) the self as knower. Carl Rogers defined self-concept, or the self, as "a learned, conscious sense of being separate and distinct from other people and things" (Ewen, 1988, p. 380). Bandura conceptualized the self in terms of one's self-efficacy, or how one perceives one's potential effectiveness in coping with the demands of one's environment (Bandura, 1977). Bandura's self-efficacy is similar to

Roger's self-concept, but Bandura did not believe that a global self-concept could account for the different types of behaviors people exhibited under varying circumstances. Rather, Bandura believed that the strength of a person's self-concept varies in different areas, and that each of these aspects must be assessed separately (Ewen, 1988). Similarly, William James (1892) believed that one's self-esteem was determined by the balance of one's successes in life with one's pretensions, or objectives.

Many theorists contend that the self is multi-dimensional; yet Neemann and Harter (1986) note a lack of valid and reliable measures which reflect this complexity. The Self-Perception Profile for Children (Harter, 1985), the Self-Perception Profile for Adolescents (Harter, 1986), and the Adult Self-Perception Profile (Messer & Harter, 1986) were developed in response to this need. The Self-Perception Profile for College Students (Neemann & Harter, 1986) was developed to bridge the developmental gap between adolescence and emerging adulthood, and to represent the college-age population.

In addition to designing a measure suitable for college-age students, Neemann and Harter sought to construct an instrument that is valid and reliable. Cronbach (1949) stated, "The one indispensable characteristic of a test is validity. *A test is valid to the degree that we know what it measures or predicts* " (p. 48). Empirical analysis, according to Cronbach (1949), is used by the researcher to show that the test in question "is correlated with some other variable, and therefore measures the same thing" (p. 48). Logical validity represents another approach to validation of a test. According to Cronbach (1949), by using logical analysis, "one attempts to judge precisely what the test measures" (p. 48). Logical validity leads to the psychological characterization of a test, whereas empirical validity relates a test to a practical purpose.

Cronbach and Meehl (1955) defined four types of validity, one of which is construct validity. They defined construct validation as a process used when "a test is to be interpreted as a measure of some attribute or quality which is not 'operationally defined'" (p. 282). Construct validation, according to Cronbach and Meehl (1955), "must be investigated whenever no criterion or universe of content is accepted as entirely adequate to define the quality to be measured" (p. 282). In order to determine whether an instrument has construct validity, research must demonstrate that specific underlying concepts which the authors define in developing their instrument are indeed measurable qualities.

Consistent with Cronbach and Meehl (1955), Byrne (1989) described the accepted practice of validating a test composed of several subscales by demonstrating the test has a well-defined factor structure which is consistent with its underlying theory.

Campbell and Fiske (1959) stated that evidence of both convergent and discriminant validity must be produced before claims of construct validity can be made. Convergent validity is demonstrated when a measure correlates highly with another measure to which it is theoretically linked, whereas discriminant validity is demonstrated when a measure is not highly correlated with another measure that is theoretically unrelated.

The current research has been designed to investigate the construct validity of two scales of the Self-Perception Profile for College Students, specifically, the Intellectual Ability and the Scholastic Competence scales.

REVIEW OF THE LITERATURE

The Self-Perception Profile for College Students

The current version of the Self-Perception Profile for College Students (Neemann & Harter, 1986) was normed on 300 subjects, 70 males and 230 females. One hundred forty-two of the subjects were freshman. Ninety-three percent were white, and 94% were never married. Reliability of the scales was determined by coefficient alpha. For the group as a whole, these coefficients ranged from .76 to .92, demonstrating adequate internal consistency of the measure. To determine whether the twelve scales (excluding global self-worth) hypothesized by the authors could be supported statistically, an oblique factor analysis was done. According to Neemann and Harter (1986), Cattell's scree test indicated there were twelve factors to be extracted from the measure, and these corresponded perfectly to the twelve scales intended by the authors. Intercorrelations for the scales were calculated. The intercorrelation between the Intellectual Ability and Scholastic Competence scales was of particular importance to the current research. This value was $r = .65$. A value of $r^2 = .42$ indicates that 42% of the variance between these variables is shared. This indicates a moderate degree of overlap between the Intellectual Ability and Scholastic Competence scales, consistent with the expectations of Neemann and Harter (1986).

The authors also included correlations between each of the twelve domains and the domain of global self-worth. Consistent with research that

used samples other than college students, Neemann and Harter (1986) found that Appearance was the single domain most highly related to self-worth in the college students participating in their study. The highest correlates of self-worth other than Appearance were: Job Competence, Social Acceptance, Intellectual Ability, Parent Relationships, and Scholastic Competence. The correlation between Self-Worth and Intellectual Ability was .44 for the group as a whole (for males, $r = .51$; for females, $r = .43$). The correlation between Self-worth and Scholastic Competence for the group as a whole was .45 (for males, $r = .54$; for females, $r = .42$). According to these data, Intellectual Ability and Scholastic Competence are major components of college students' concepts of self-worth, and there is a trend for male college students to more closely relate these domains to their global self-worth than do female college students.

Brown (1992) and Davis (1992) reviewed the Self-Perception Profile for College Students. Both reviewers indicated that the preliminary validity data provided in the manual for the profile suggest the instrument is valid and reliable, yet the data are limited. Brown (1992) stated that personality measures designed for use with the college population are rare, and suggests that the Self-Perception Profile for College Students is appropriate for use by researchers, counselors, and trained mentors. Further research regarding the validity of this profile is needed.

McGregor, Eveleigh, Syler, and Davis (1991a) investigated whether students who were identified as Type A personalities perceived aspects of themselves differently than did students who were classified as Type B personalities. They administered the modified Jenkins Activity Survey and the Self-Perception Profile for College Students (SPP) to 251 undergraduates students, 172 of whom were female and 79 of whom were male. Prior to

analysis of the SPP, the subjects were grouped, by gender, into Type A or Type B categories. Analysis of the SPP demonstrated significant gender effects across specific domains of the SPP, including the domains of Social Acceptance, Appearance, Intellectual Ability, Creativity, Athletic Competence, and Morality. With the exception of the domain of Morality, men rated their competencies significantly higher than did the women in each of these domains. Further, disregarding gender, Type A personalities rated themselves significantly higher than Type B personalities on both the Intellectual Ability and Scholastic Competence scales.

Masciuch, McRae, and Young (1990) administered the Self-Perception Profile for College Students to 102 undergraduate students taking business courses at two Canadian universities. They investigated whether Canadian male and female business students differed from the sample presented by Neemann and Harter (1986) with regard to global self-worth, across any of the domains measured in the profile, or according to the importance they attached to these domains. Fifty-six of these subjects were male and 46 were female. Measures of internal consistency, assessed by coefficient alpha, ranged from .74 to .95 for each of the thirteen scales of the profile. These measures were considered to demonstrate adequate reliability of the instrument. A multivariate analysis of variance demonstrated that women rated themselves significantly lower than men on four domains, specifically Athletic Competence, Appearance, Creativity, and Global Self-Worth. Importance ratings did not differ significantly for men and women. This study demonstrated both similarities and differences between this sample of Canadian business students and Neemann and Harter's sample. Specifically, in both samples, women rated themselves significantly lower than men on the

Athletic Competence and Appearance domains. In the Canadian sample, however, women also rated themselves lower in Creativity and Global Self-worth than did the men in that sample. In the Neemann and Harter (1986) sample, women rated themselves significantly higher than men on the Close Friendship domain. The Canadian sample, however, did not show a significant difference between the sexes in this domain.

Crocker and Ellsworth (1990) investigated the perceived competence of first or second year physical education students as compared to students enrolled in other academic programs, specifically students from the arts, sciences and nursing who were enrolled in first year introductory psychology or second year child psychology courses. The researchers hypothesized that the physical education majors would have higher perceptions of athletic competence than students in other academic programs. Further, they hypothesized there would be no systematic differences among academic groups across the domains of physical appearance, social acceptance, scholastic competence, and global self-worth. Secondary hypotheses included gender-specific predictions, such as men were expected to have a higher perception of athletic competence and physical appearance, as suggested by Neemann and Harter (1986).

To investigate their hypotheses, Crocker and Ellsworth (1990) administered the Self- Perception Profile for College Students to students in two psychology classes and two physical education classes. Initial factor analysis and internal consistency measures provided psychometric support for the scales of the test instrument. Analysis of variance demonstrated that physical education majors did have a significantly higher level of perceived athletic competence than the students who were enrolled in the other

academic programs. Overall, males had a higher perception of athletic competence than did females. Females enrolled in physical education had a higher perceived athletic competence when compared to both the men and women from other academic majors. The group by gender interaction was not significant, however. Crocker and Ellsworth (1990) also supported Neemann and Harter's (1986) finding that Appearance was the scale most strongly related to global self-worth. This study demonstrated construct validity of the Athletic Competence scale.

Sinclair and Vealey (1989) examined how coaches' expectations regarding athletes' abilities affected the coaches' feedback given to the athletes. They also investigated how differential expectations and types of feedback affected athletes' perceived competence, self-esteem, and self-confidence. Forty-one female athletes were administered the Trait Sport-Confidence Inventory, Rosenberg's Self Esteem Scale, and the Self-Perception Profile for College Students at various times during a training season.

With regard to findings relevant to the Self-Perception Profile for College Students, the researchers, using a repeated measures analysis of variance of data collected preseason, midseason, and postseason, found no significant effects for perceived athletic competence among the athletes across the season. The authors indicate that this finding may have resulted because perceived competence is a global quality, and perhaps is less likely to be significantly influenced over a short period of time than is self-confidence, a self-perception which they found did change significantly over the course of the limited season.

McGregor, Mayleben, Buzzanga, Davis and Becker (1991b) administered the Self-Perception Profile for College Students (SPP), the Texas Social

Behavior Inventory (TSBI), and the short form of the Taylor Manifest Anxiety Scale to 211 first-generation college students and to 235 students whose parents had attended college. Questionnaires were first divided by gender into groups. Questionnaires were further divided into one of three classifications depending on whether the student's parents had attended college: the first group, called the traditional group (both parents attended college), a second group where one parent had attended college, and the third group where neither parent had attended college. Separate 2x3 analyses of variance (gender x classification) were used to analyze each of the measures used. Contrast tests were done using the Newman-Keuls procedure. They found that the student classification factor was significant ($F_{2, 440} = 2.99, p < .05$) in the analysis of the self-esteem scores (using the TSBI). Specifically, traditional students (both parents attended college) had significantly higher self-esteem scores on the TSBI than either of the first generation groups (one parent or neither parents attended college). Separate analyses of the SPP scales were also done. With regard to the Intellectual Ability scale of the SPP, men scored significantly higher than women across the three categories of students, which they interpreted as evidence for sex-role stereotyping. No gender difference was found on the Scholastic Competence scale. Further, with regard to Scholastic Competence, McGregor et al. (1991b) found no significant differences among the three classifications of the students. They interpreted this result to indicate that in this domain, first-generation college students perceive themselves to be as capable as the traditional students.

The Self-Perception Profile for College Students: The Theoretical Model

A second measure included in the manual with the Self-Perception Profile for College Students is the Importance Ratings scale (Neemann & Harter, 1986). This measure is completed in the same manner as the Self-Perception Profile, using the same directions and the same question format. It contains twelve two-item subscales that parallel the subscales on the Self-Perception Profile.

The theoretical model upon which Neemann and Harter (1986) based their measures is credited to William James (1892), who believed that self-esteem could be expressed as the ratio of one's successes to one's pretensions. This ratio is the determinant of global self-esteem.

James (1892) stated:

So our self-feeling in this world depends entirely on what we back ourselves to be and do. It is determined by the ratio of our actualities to our supposed potentialities; a fraction of which our pretensions are the denominator and the numerator our success; thus,

$$\text{Self-esteem} = \frac{\text{Success}}{\text{Pretensions (p. 187)}}$$

Harter (cited in Neemann & Harter, 1986), working with children, operationalized James' ratio into a discrepancy between domain-specific competence/adequacy evaluations and attitudes towards the importance of success in each domain. By administering the Importance Ratings scale in addition to the Self-Perception Profile for College Students, the administrator is able to determine how important a particular domain is to the subject. James' model implies that one's self-esteem is affected by only those domains that are important to the self. For example, a student who rates his or her competence in Scholastic Competence as low, but who rates this domain as

high in importance to himself or herself, is more likely to have a lower self-esteem than a student who may also rate his or competence as low, but who does not feel this domain is particularly important.

Neemann and Harter (1986) state that the Self-Perception Profile for College Students was an attempt to index William James' domain-specific "successes," and the specific indices of self-perception regarding intellectual ability and scholastic competence, as defined by Neemann and Harter (1986), are relevant to the current research.

Self-predicted Grades

In a sample including 313 male and female freshmen and sophomore college students, Goldman, Flake, and Matheson (1990) found positive correlations between perceived and actual grade point averages (range .70 to .88) in male versus female lower (below the median) and higher (above the median) achieving students. Disregarding gender and whether the students were freshmen or sophomores, they found 25 out of 36 cases of significant overestimations of grade point averages and Scholastic Aptitude Test scores by both lower and higher achieving students. Further, they noted a trend toward males to overestimate more than females, suggesting gender differences in self-perceptions of academic achievement. Other research (Kirk & Sereda, 1969; Dunnette, 1952) report similar findings.

Jacobson (1990) investigated the congruence of students' predictions of grades before taking tests and their estimations of their grades after taking the tests with their actual performances on the tests. Sixty-nine students, 59 females and 10 males, from two sections of an undergraduate education course participated in this study. Students took a two-part test, composed of short

answers and essay questions, approximately five weeks into the school semester. The tests were graded, handed back to the students, and reviewed with them. Test scores were skewed. On a scale of ten possible grades, ranging from A+ to "below C-," the majority of the grades were B- or better.

Approximately four weeks later, they were given a test in the same format over the subsequent material taught since the previous test. This time, students were asked to predict their grades on the test. After taking the test, they were asked to estimate how they did. Results indicated significant positive correlations between the students' predicted grades and their actual grades, regardless of the type of test question. For short answer questions, $r = .40$ between predicted and actual scores. For essay questions, $r = .41$. The author indicated that although the relationship between predicted and actual scores is significant, it is not strong. For the short answer questions, posttest grade estimations were more accurate than pretest predictions, where r increased to $.63$. For the essay portion of the test, however, the correlation remained the same.

Holen and Newhouse (1976) gathered data on 159 college juniors and seniors in an educational psychology course. Predictor variables included high school grade point average, college grade point average, the grade received in a prerequisite course, and each student's predicted grade on a test in the educational psychology course. Results indicated that the students' predicted scores had a correlation of $.52$ with the students' actual scores on the test. Predicted scores were as highly correlated with actual test scores as college GPA ($r = .52$), and more highly correlated than the other predictors (high school GPA, $r = .34$; previous course grade, $r = .38$). Using a full model-restricted model comparison, regression analysis demonstrated that when the

student predicted score was included in the analysis, multiple $R = .61$ ($R^2 = .37$). When the student-predicted score was not in the equation, then multiple $R = .53$ ($R^2 = .28$). The between-models F-ratio (22.15) testing the significance of the contribution of the student-predicted scores to the prediction equation was significant ($p < .001$). The authors concluded that the student-predicted score accounted for a significant portion of the variance in examination performance that was not explained by high school or college GPAs or previous course grade. Holen and Newhouse (1976) conclude that college students can accurately estimate their achievement in a given course, even in the absence of information such as instructor testing methods.

However, as Jacobson (1990) pointed out, Holen and Newhouse (1976) and other researchers (Hunsley, 1985) who collect data indicating correlations between predicted grades and actual grades generally do not include the predicted or actual grades in their reports. Because predicted grades appear to be correlated with actual grades in these studies, it is expected that a range of grades (i.e., A to F) would be observed in both the predicted and actual scores. In Jacobson's (1990) study, she acknowledges that the grades on the first exam completed by the subjects were skewed, with the majority of subjects receiving a B- or greater. In a class where actual examination grades are spread more evenly in a normal distribution or are skewed in the opposite direction, one would expect students' predicted grades on subsequent exams to reflect this greater spread in actual grades.

Self-perceptions, Ethnicity, and Gender

Based on a review of the literature, Demo and Parker (1987) contend that black students and white students have equal self-esteem. In their study, they

examined a disproportionate stratified probability sample of 298 undergraduate students. This sampling method was chosen because the university from which the sample was drawn has an enrollment of approximately 75% white students, and they wanted to create nearly equal numbers in each race and gender subgroup. Forty-eight percent of the subjects were male and 52% were female. The authors indicated that the university enrollment is from predominantly middle-class or lower-middle-class families. The Tennessee Self-Concept Scale was administered to the subjects. A two-way analysis of variance (race x gender) yielded no significant differences between the self-esteem levels of black and white students. There was no significant interaction effect of race and gender for the group as a whole. When the data were analyzed by subgroup, however, they found that white females had lower self-esteem than white males, while the black students did not differ significantly by gender with regard to their self-esteem. The statistical test or tests used to analyze the data by subgroup were not indicated by the authors.

A second part of the study conducted by Demo and Parker (1987) investigated whether the self-esteem of college students was affected by academic achievement. The student cumulative grade point average obtained from the university records was used to operationalize "academic achievement." They found that the mean grade point average for white students was significantly higher than that of black students. Females as a group had significantly higher GPAs than males. When the data were analyzed for each subgroup, white females had higher GPAs than black females, while males of either race had no significant difference in their GPAs.

Demo and Parker (1987) noted that while white females had the highest GPAs, they also had the lowest self-esteem. They also found no correlation between actual GPA and overall self-esteem for the group as a whole. This finding is of interest in light of the proposed study. The Tennessee Self-concept Scale used in the Demo and Parker (1987) study derives a global rating of self-esteem from the combined responses to scales that relate to five dimensions of the self: the physical self; the moral-ethical self; the personal self; the family self; and the social self. Neemann and Harter's instrument, on the other hand, measures twelve different domains plus global self-worth as a thirteenth and separate domain. Neemann and Harter (1986), based on Harter's earlier work with children, approach the concept of global self-worth differently from those who define it as a sum of diverse responses. Neemann and Harter (1986) contend that people aged eight years old and older "can make a more global or gestalt-like judgment about their own self-worth" (p. 2), so they assess this judgment directly and independently of the other twelve specific domains on their instrument. In accordance with Neemann and Harter (1986), the proposed study examines whether students' self-esteem, as it pertains to the specific domains termed Intellectual Ability and Scholastic Competence, will be influenced by the students' grades in a specific class. As described above, research (Demo & Parker, 1987) indicates that although women had the highest grade point averages, they also had the lowest self-esteem. However, the scale used by Demo and Parker (1987) measured global self-esteem. It is of interest to investigate whether women will also rate themselves lower than men within the context of the specific domains of Intellectual Ability and Scholastic Competence, when other confounding self-concepts, such as one's appearance, athletic competence, creativity, and global

self-worth (Masciuch et. al., 1990) are eliminated from the evaluation of these two domains.

In a study examining expectancy differences between males and females, Vollmer (1986) also indicated a need to examine more specific personality traits, using instruments that are designed to assess these traits, rather than predicting self-esteem in a specific area from a global assessment of one's self-esteem in general. Specifically, he tested the hypothesis that gender differences in expected academic achievement (i.e., expectancy) could be explained by corresponding differences in perceived intellectual ability. One measure used in this study was the Self-Confidence Scale created by Vollmer. This scale consists of seven items which measure a student's perceived ability in the area of academic achievement. Each item is worded in such a way as to express high perceived ability. Students rate how closely each item pertains to them using a five-point Likert type scale. Past scores on a college entrance examination, amount of work spent in exam preparation as reported by each subject, expected grade predicted by each subject, the subsequent grade earned on an exam, and scores on the Self-Confidence Scale were predictor variables. Results demonstrated that males had higher perceived ability than females. To determine if the gender difference in expectancy (i.e., expected grade predicted by the subjects) could be explained by the corresponding difference in perceived ability, correlations between expectancy, perceived ability, and gender were computed. The gender differences in expectancy and perceived ability correspond to correlations of -.14 and -.28. Also, perceived ability and expectancy were significantly positively correlated ($r = .30$). Supporting his hypothesis, Vollmer demonstrated that when perceived ability was controlled, gender no longer

related to expectancy. The author concluded that, although men have significantly higher expectancy and perceived ability than females, the differences are small.

STATEMENT OF THE PROBLEM

Specific problems with the Self-Perception Profile for College Students include a lack of normative data with regard to students who are not white, test-retest reliabilities not reported by the authors, and construct validity of individual scales appears to be limited to the athletic achievement scale. This research is designed to investigate the following questions: with regard to the Intellectual Ability and Scholastic Competence scales, do students make a distinction between intellectual ability and scholastic competence, as Neemann and Harter (1986) and their data suggest? With regard to these same scales, are there gender-specific differences regarding how college students perceive themselves?

Neemann and Harter (1986) state the Intellectual Ability scale measures intellectual competence. They claim that it is different from the Scholastic Competence scale in that Intellectual Ability assesses a more global, stable intelligence, by assessing whether students believe themselves to be as smart or smarter than other students. On the Scholastic Competence scale, however, items content involves actual schoolwork and classwork. It assesses whether a student is confident he or she is mastering the required material.

Confirmatory factor analysis by other researchers (Crocker & Ellsworth, 1990) in addition to those who used this measure in multi-method type studies (McGregor et al., 1991; Crocker & Ellsworth, 1990; Masciuch et al., 1990) provide psychometric support for the Self-Perception Profile for College

Students and each of its scales. The purpose of the current research is to demonstrate further construct validity of the Intellectual Ability and Scholastic Competence scales.

It is hypothesized that a student's self-predicted examination grade should be more closely associated with the Intellectual Ability (IA) scale than the Scholastic Competence (SC) scale, because the IA scale assesses how smart a student believes he or she is compared to his or her classmates. A student's actual examination grade, assigned by the teacher, should be more closely associated with the SC scale, because the SC scale assesses how well the student believes he or she will be able to master the coursework. The actual examination grade provides confirmation of how well the student actually is mastering the required material. Also, students who predict high grades for themselves should rate themselves higher in both IA and SC than students who predict low grades for themselves. Specifically, if IA and SC possess construct validity, then: (a) students who predict an examination grade of A or B for themselves should score significantly higher on IA than students who predict a C or less; (b) students who predict a grade of A or B for themselves on an examination should score significantly higher on SC than students who predict a C or less; (c) because IA is a stable trait, the difference between pre- and post-test IA scores should not change significantly as a result of test grade feedback; and (d) because SC is influenced by experience (test feedback), a significant difference between pre- and post-test SC scores is hypothesized for subjects whose actual grades deviate from predicted grades.

The major hypotheses investigated in this research were:

H₀₁: There will be no significant difference on the Intellectual Ability scale between students who predict an A/B and students who predict a C

or less on the psychology midterm examination.

H_{A1}: Students who predict an A/B on the pertinent examination should score significantly higher on Intellectual Ability than students who predict a C or less.

H_{O2}: There will be no significant difference on the Scholastic Competence scale between students who predict an A/B and students who predict a C or less on the psychology midterm examination.

H_{A2}: Students who predict an A/B on the pertinent examination should score significantly higher on Scholastic Competence than students who predict a C or less.

H_{O3}: There will be no significant difference between pre- and post-test Intellectual Ability scores for subjects whose actual grades deviate from predicted grades.

H_{A3}: There will be a significant difference between pre- and post-test Intellectual Ability scores for subjects whose actual scores deviate from predicted scores.

H_{O4}: There will be no significant difference between pre- and post-test Scholastic Competence scores for subjects whose actual grades deviate from predicted grades.

H_{A4}: There will be a significant difference between pre- and post-test Scholastic Competence scores for subjects whose actual scores deviate from predicted scores.

A secondary hypothesis investigated in this study was:

H_{O5}: Male and female students will not differ significantly in their self-perceptions on the Intellectual Ability and Scholastic Competence scales as reported on the Self-Perception Profile for College Students.

H_A5: Female students as a group will rate themselves significantly lower than male students in their self-perceptions with regard to both the Intellectual Ability and Scholastic Competence scales as reported on the Self-Perception Profile for College Students.

METHOD

Permission to Conduct Research

Prior to the start of data collection, permission was obtained from the Human Research Committee at Auburn University at Montgomery to conduct this study (Appendix A).

Subjects

Introductory psychology students or students in an equivalent course (i.e. Social & Personal Adjustment) were invited to participate in this research. Data were first analyzed for all students who participated. Data from students who met the following criteria: aged 18-23 years, single, white or black, and a full-time student, were then analyzed separately. In order to ensure enough subjects for statistical analysis of the data collected, 268 students from twelve sections of introductory psychology and Social & Personal Adjustment classes were invited to participate in this study.

Instrument

The measure used in this study consisted of selected items from the Self-Perception Profile for College Students (Neemann & Harter, 1986). Neemann and Harter (1986) state that anyone who wants to use their measures may copy these items from the manual for their own use (Appendix B). Items from the Self-Perception Profile for College Students which pertain to the Intellectual

Ability and Scholastic Competence scales were copied verbatim for use in this study.

The Self-Perception Profile for College Students contains 54 statements that measure a student's perceptions about himself or herself. Twelve domains are specified on the measure, plus global self-worth. The twelve domains are: Creativity; Intellectual Ability; Scholastic Competence; Job Competence; Athletic Competence; Appearance; Romantic Relationships; Social Acceptance; Close Friendships; Humor; and Morality. Each domain is represented by four statements on the profile, while six additional items pertain to Global Self-Esteem. Special attention was given to the construction of the questionnaire format in order to offset a tendency to give socially desirable answers. Students are asked to identify which of two reference groups they believe best represents them, and then indicate whether a particular statement is "really true for me" or "sort of true for me." Harter (1982) devised this question format, which she termed the "structure alternative format," as an alternative to measures such as "true-false" or "like me-unlike me" which she found to encourage socially desirable answers. The structure alternative format legitimizes either choice, according to Harter (1982). For each of the thirteen scales, half of the items were worded in the negative first to ensure balance within each scale. In order to counterbalance the entire profile, positive and negative items were distributed so that approximately every other question was negatively worded.

For the purposes of this study, only the items pertaining to the Intellectual Ability and Scholastic Competence scales were administered to the subjects (Appendix C).

A scoring key (Appendix D) for the profile was included in the test

manual (Neemann and Harter, 1986). Each item was scored on a scale from one to four, where one indicates low self-perceived competence or adequacy and four indicates high self-perceived competence or adequacy.

Two scores were calculated for each subject following each administration of the profile statements, one for Intellectual Ability and one for Scholastic Competence.

Procedure

Subjects were invited to participate during a regular school quarter before they had taken the midterm exam in their class. During the class period immediately preceding the administration of the midterm exam, a consent form was signed by each subject (see Appendix E). Directions for the Self-Perception Profile for College Students were read (Appendix F), and the subjects completed the items from the Intellectual Ability and Scholastic Competence scales. One addition to the standard directions from the manual was given to the students before each administration of the profile items: they were asked to consider any questions pertaining to classwork in light of the class they were in at that time (i.e. introductory psychology). Following the completion and collection of the questionnaires, they were asked to predict their midterm examination grade for the psychology class they were in. Each student was asked to write this down, along with demographic data such as age, race, marital status, and gender. (A form was provided for ease of collecting and keeping track of this information. See Appendix G). Students identified their questionnaires and information with their birthdate and course/section number. At this time, the course instructor also collected each subjects' birthdate along with his or her name. The primary researcher did not have

access to this information. Subjects were informed that collection of that data concluded the initial phase of this study, and that they would be asked to participate in the second phase following release of the midterm exam grades.

During the class period when the instructor would normally hand back the students' midterm exam grade, each student participating in the study received a form (Appendix H) containing his or her calculated letter grade and the letter grade he or she predicted for himself or herself prior to the midterm exam. The subjects' copies were distributed by the course instructor and had the subjects' names on them for ease of distribution. The subjects were informed they could keep or destroy these copies. The researcher also retained a copy of each subject's grade, but this form (Appendix I) identified the subject by his or her birthdate and course/section number, not by name. After the students reviewed their grades, directions for the Self-Perception Profile for College Students (SPP) were read, and each student completed the selected items from the SPP. These data were also identified by the student's birthdate and course/section number. Following completion of the data collection, students were debriefed regarding the purposes of this study. At the discretion of their instructor, some classes of students received extra credit for their participation in this study.

RESULTS

A total of 268 students from twelve psychology undergraduate classes consented to participate in this study. Data from 78 subjects were incomplete because these subjects failed to complete one or more phases of the study. The remaining sample of 190 subjects from eleven classes was comprised of the following groups: (a) 144 full-time and 46 part-time students; (b) 154 single and 36 married students ; (c) 143 white and 47 black students; and (d) 92 male and 98 female students.

Analysis of Data for All Subjects

A Pearson correlation matrix yielded the results shown in Table 1. The correlations between IA1 and IA2 and predicted grade were significant in each case, while only IA2 was significantly correlated with actual grade. Further, the correlations between IA1 and IA2 and predicted grade were higher than the correlation between IA2 and actual grade, which was low. This supports the hypothesis that Intellectual Ability would be more closely correlated with predicted grade than actual grade. Pre- and post-test measures of Scholastic Competence were significantly correlated with both actual and predicted grade, however. This finding did not support the hypothesis that Scholastic Competence would be more closely correlated with actual grade than predicted grade.

Table 1
Pearson Correlation Matrix

	PRED	ACT	IA1	IA2	SC1	SC2
PRED	1.00	0.42***	0.27***	0.34***	0.42***	0.47***
ACT	-	1.00	0.03	0.16*	0.23**	0.36***
IA1	-	-	1.00	0.78***	0.60***	0.60***
IA2	-	-	-	1.00	0.54***	0.74***
SC1	-	-	-	-	1.00	0.75***
SC2	-	-	-	-	-	1.00

NOTE: PRED = predicted grade; ACT = actual grade; IA1 = pretest Intellectual Ability scale ratings; IA2 = post-test IA scale ratings; SC1 = pretest Scholastic Competence scale ratings; SC2 = posttest SC scale ratings; * $p < .05$; ** $p < .01$; *** $p < .001$.

It was hypothesized that there would be a significant main effect for predicted grade on the Intellectual Ability scale. A 2x2 analysis of covariance (Mitchell & Jolley, 1992; Bruning & Kintz, 1987) was used to analyze the data. Class was used as a blocking variable. The result from the pretest scale Intellectual Ability (IA1) was used as a covariate. The covariate was used to equate groups on the IA variable because subjects could not be randomly assigned to conditions. The result from the posttest scale Intellectual Ability (IA2) was the dependent variable. The subjects' predicted and actual grades were categorical variables. Results from the analysis of covariance yielded a

nonsignificant main effect for Intellectual Ability and predicted score ($F(1, 175) = 1.43$, n. s.). The covariate was significant, ($F(1, 175) = 260$, $p < .001$; $R^2 = .65$).

It was predicted that there would be a significant main effect for actual grade on the Scholastic Competence scale. Class was used as a blocking variable. The result from the pretest scale Scholastic Competence (SC1) was used as a covariate. The covariate was used to control for pre-existing differences on the SC variable among subjects in the various groups. The result from the posttest scale Scholastic Competence (SC2) was the dependent variable. The subjects' predicted and actual grades were categorical variables. Results from the analysis of covariance yielded a nonsignificant main effect for actual grade ($F(1, 175) = 0.43$, n. s.). In this case also, the covariate was significant ($F(1, 175) = 184.4$, $p = .001$; $R^2 = .63$).

The large correlations (shown in Table 1) between the pre- and post-test measures for each scale explained why the covariates in the ANCOVAs described above were significant in each case.

Using the data from all subjects, a series of post-hoc 2x2 analyses of variance (ANOVA) without using the covariate or blocking variable was performed on the pre- and post-test measures of both IA and SC because in each case, the covariate accounted for a very large proportion of the variance. A 2x2 ANOVA demonstrated a main effect for predicted grade on IA1 (see Table 2). This main effect was hypothesized, and indicated that students who predicted A/B scored significantly higher on the pretest measure of IA than did students who predicted a C or less. A 2x2 ANOVA demonstrated no significant main effects on the IA2 scores with respect to actual or predicted grade, or the interaction between these variables ($F(1, 186) = 1.1$, n. s., $F(1, 186) = 3.37$, n. s., and $F(1, 186) = 0.09$, n.s., respectively).

Table 2

2x2 ANOVA for All Subjects on IA1

Source	Sum-of-Squares	DF	Mean-Square	F-Ratio	P
ACT	2.06	1	2.06	0.37	0.54
PRED	34.61	1	34.61	6.2	0.01
ACT*PRED	1.93	1	1.93	0.35	0.56
ERROR	1038.01	186	5.58	-	-

NOTE. ACT = actual grade; PRED = predicted grade; alpha = .05

A 2x2 ANOVA demonstrated a main effect for SC1 with respect to predicted grade (see Table 3). This main effect was hypothesized, and indicated that students who predicted A/B had higher SC1 scores than students who predicted a C or less. A 2x2 ANOVA demonstrated significant main effects on the SC2 scores with respect to actual and predicted grade, while the interaction between these variables was not significant (see Table 4). The significant main effects indicated that subjects who predicted an A/B had higher SC2 scores than subjects who predicted a C or less. Also, subjects who actually earned an A/B were higher on SC2 than subjects who actually earned a C or less.

Table 3

2x2 ANOVA for All Subjects on SC1

Source	Sum-of-Squares	DF	Mean-Square	F-Ratio	P
ACT	1.50	1	1.50	0.321	0.57
PRED	111.19	1	111.19	23.88	0.00
ACT*PRED	2.14	1	2.14	0.46	0.50
ERROR	866.03	186	4.66	-	-

NOTE. ACT = actual grade; PRED = predicted grade; alpha = .05

Table 4

2x2 ANOVA for All Subjects on SC2

Source	Sum-of-Squares	DF	Mean-Square	F-Ratio	P
ACT	21.94	1	21.94	4.92	0.03
PRED	67.70	1	67.70	15.18	0.00
ACT*PRED	5.00	1	5.00	1.12	0.29
ERROR	829.39	186	4.46	-	-

NOTE. ACT = actual grade; PRED = predicted grade; alpha = .05

Analysis of Data by Groups

To determine if students' self-perceptions differed significantly among groups, students were categorized into four possible groups, depending on their predicted and assigned letter grades. Table 5 contains the number of subjects per group.

Table 5
All Subjects Categorized by Predicted and Actual Grades

	Predicted Grade	Actual Grade	N
Group I:	A/B	A/B	86
Group II:	A/B	C or less	66
Group III:	C or less	A/B	11
Group IV:	C or less	C or less	27

A 2x2 ANOVA of mean differences for IA1 and IA2 demonstrated that there was a main effect for actual grade. This result indicates that the difference between IA1 and IA2 is dependent on the actual grades received by the student. Table 6 shows the results of the ANOVA for mean differences between IA1 and IA2. Table 7 contains the mean score for each group on IA1 and IA2.

Table 6

2x2 ANOVA of Mean Differences for
IA1 and IA2

Source	Sum-of-Squares	DF	Mean-Square	F-Ratio	P
ACT	16.85	1	16.85	6.16	0.01
PRED	1.47	1	1.47	0.54	0.47
ACT*PRED	4.60	1	4.60	1.68	0.20
ERROR	508.972	186	2.74	-	-

NOTE. ACT = actual grade; PRED = predicted grade; alpha = .05

Table 7

Mean Score by Group on IA1 and IA2

	Group I (A/B - A/B)	Group II (A/B - C or less)	Group III (C or less - A/B)	Group IV (C or less - C or less)
IA1	13.43 (2.38)	13.44 (2.32)	12.00 (2.80)	12.56 (2,24)
IA2	13.41 (2.53)	13.03 (2.42)	12.66 (2.77)	11.96 (2.81)
MD	0.02	0.41	-0.66	0.60

Note. Standard deviations appear in parentheses; MD = mean difference between IA1 and IA2.

The results shown in Table 7 indicated that the largest mean difference from pre- to post-test on IA occurred between Groups III and IV. A one-way ANOVA examining the contrast between the scores on IA for these two groups indicated that the means between the scores obtained were significantly different ($F_{1, 186} = 4.31, p = .04$). A paired samples t-test for Group III showed that the scores did not change significantly from pre- to post-test measures of IA ($t_{10} = -1.25, n.s.$). A paired samples t-test for Group IV showed that, in this group also, the scores did not change significantly from pre- to post-test measures of IA ($t_{26} = 1.407, n.s.$). Therefore, while the scores on IA for neither group changed significantly, the mean difference between these groups was significant because the groups moved in opposite directions. The between-group movement was significant, but the within-group movement was not. This result supported the hypothesis that IA would remain stable from pre- to post-test.

Further, the results shown in Table 7 indicated that the second largest mean difference from pre- to post-test on IA occurred between Groups II and IV. A one-way ANOVA examining the contrast between the scores on IA for Group II and Group IV indicated that the means between the scores obtained did not differ ($F_{1, 186} = 0.24, n.s.$).

A 2x2 ANOVA of mean differences for SC1 and SC2 demonstrated that there was a main effect for actual grade. This result indicates that the difference between SC1 and SC2 is dependent on the actual grades received by the student. Table 8 shows the results of the ANOVA of mean differences between SC1 and SC2. Table 9 contains the mean score for each group on SC1 and SC2.

Table 8

2x2 ANOVA of Mean Differences for
All Subjects on SC1 and SC2

Source	Sum-of-Squares	DF	Mean-Square	F-Ratio	P
ACT	11.98	1	11.98	4.72	0.03
PRED	5.37	1	5.37	2.12	0.15
ACT*PRED	0.60	1	0.60	0.24	0.63
ERROR	471.93	186	2.54	-	-

NOTE. ACT = actual grade; PRED = predicted grade; alpha = .05

Table 9

Mean Score by Group on SC1 and SC2

	Group I (A/B - A/B)	Group II (A/B - C or less)	Group III (C or less - A/B)	Group IV (C or less - C or less)
SC1	12.91 (2.24)	12.38 (1.90)	10.55 (2.66)	10.59 (2.24)
SC2	13.06 (2.22)	11.70 (2.14)	11.00 (1.90)	10.52 (1.72)
MD	-.15	0.68	-0.46	0.07

Note. Standard deviations appear in parentheses; MD = mean difference between SC1 and SC2.

The results shown in Table 9 indicated that the largest mean difference from pre- to post-test on SC occurred between Groups II and III. A one-way ANOVA examining the contrast between the scores on SC for Groups II and III indicated that the means between the scores obtained were significantly different ($F_{1, 186} = 4.80, p = .03$). A paired samples t-test for Group II showed that the scores changed significantly from pre- to post-test measures of SC ($t_{65} = 3.55, p < .001$). A paired samples t-test for Group III showed that the scores did not change significantly from pre- to post-test measures of SC ($t_{10} = -1.00, n.s.$).

The second largest difference between groups on SC was between Group I and Group II. A one-way ANOVA examining the mean difference between Groups I and II indicated that the difference between SC1 and SC2 for these two groups was not significant ($F_{1, 186} = 0.45, n.s.$). Therefore, the between-groups difference for subjects who predicted an A/B (Groups I and II) was not significant, but the within-group difference for Group II (predicted A/B but received C or less) was significant. This result offered partial support for the hypothesis that students whose actual grades deviated from predicted grades would rate themselves lower on SC than students whose actual grades were the same as predicted grades. It was hypothesized that students who predicted a C or less but received an A/B would go up from pre- to post-test SC, but this was not supported by the data.

Effects of Gender for All Subjects

Another hypothesis predicted that females would rate themselves lower than males in the domains of both IA and SC. A series of independent t-tests demonstrated that there were no significant gender differences in the

subjects' ratings on IA1, IA2, SC1, or SC2 ($t_{188} = 1.23$, n.s., $t_{188} = 1.22$, n.s., $t_{188} = -.05$, n.s., and $t_{188} = -.30$, n.s., respectively).

Analysis of Data for the Ideal Subjects

As stated previously, the criteria for determining students for whom the Self-Perception Profile for College Students is appropriate include: aged 18-23 years, single, and a full-time student. The above analyses included all subjects who participated in the study, whether they fell within this ideal category or not. Analyses of the data were carried out which excluded students who did not fall into the ideal category. Seventy-nine students were eliminated, with the remaining 111 categorized as shown in Table 10. In this sample, 63 students were male, and 48 were female. Seventy-seven were white, and 34 were black.

Table 10
Ideal Subjects Categorized by Predicted and Actual Grades

	Predicted Grade	Actual Grade	N
Group I:	A/B	A/B	47
Group II:	A/B	C or less	42
Group III:	C or less	A/B	07
Group IV:	C or less	C or less	15

Analyses were carried out to determine whether the results obtained from the group as a whole would be the same for this ideal group. A series of

post-hoc 2x2 analyses of variance (ANOVAS) was performed on the pre- and post-test measures of both IA and SC. These ANOVAS demonstrated a main effect for predicted grade on IA1 (Table 11), IA2 (Table 12), SC1 (Table 13), and SC2 (Table 14). This main effect, consistent across pre- and post-test measures of both IA and SC, demonstrated that students who predicted A/B had higher scores on pre- and post-test measures across both domains than students who predicted a C or less.

Table 11
2x2 ANOVA for Ideal IA1

Source	Sum-of-Squares	DF	Mean-Square	F-Ratio	P
ACT	5.36	1	5.36	1.01	0.32
PRED	30.46	1	30.46	5.74	0.02
ACT*PRED	11.21	1	11.21	2.11	0.15
ERROR	567.40	107	5.30	-	-

NOTE. ACT = actual grade; PRED = predicted grade; alpha = .05

Table 12
2x2 ANOVA for Ideal IA2

Source	Sum-of-Squares	DF	Mean-Square	F-Ratio	P
ACT	0.00	1	0.00	0.00	0.98
PRED	39.47	1	39.47	5.41	0.02
ACT*PRED	0.85	1	0.85	0.12	0.73
ERROR	1038.00	186	5.58	-	-

NOTE. ACT = actual grade; PRED = predicted grade; alpha = .05

Table 13
2x2 ANOVA for Ideal SC1

Source	Sum-of-Squares	DF	Mean-Square	F-Ratio	P
ACT	1.57	1	1.57	0.37	0.55
PRED	71.01	1	71.01	16.62	0.00
ACT*PRED	1.87	1	1.87	0.44	0.51
ERROR	457.13	107	4.27	-	-

NOTE. ACT = actual grade; PRED = predicted grade; alpha = .05

Table 14

2x2 ANOVA for Ideal SC2

Source	Sum-of-Squares	DF	Mean-Square	F-Ratio	P
ACT	7.53	1	7.53	1.71	0.20
PRED	46.27	1	46.27	10.49	0.00
ACT*PRED	0.87	1	0.87	0.20	0.66
ERROR	472.14	107	4.41	-	-

NOTE. ACT = actual grade; PRED = predicted grade; alpha = .05

A 2x2 ANOVA of mean differences between IA1 and IA2 for the ideal group yielded no significant differences between the means with respect to predicted grade, actual grade, or the interaction between the two variables ($F_{1, 107} = 0.20$, n.s., $F_{1, 107} = 1.92$, n.s., and $F_{1, 107} = 2.10$, n.s., respectively). A 2x2 ANOVA of mean differences between SC1 and SC2 for the ideal group also yielded no significant differences between the means with respect to predicted grade, actual grade, or the interaction between the two variables ($F_{1, 107} = 1.10$, n.s., $F_{1, 107} = 0.93$, n.s., and $F_{1, 107} = 0.08$, n.s., respectively). Table 15 shows the scores obtained by each category of ideal subjects on pre- and post-test measures of IA. Table 16 contains the scores obtained by each category of ideal subjects on pre- and post-test measures of SC. Because the results of the ANOVAS of mean differences yielded no significant results, no further analyses were done on the data for the ideal group.

Table 15

Mean Score by Ideal Group on IA1 and IA2

	Group I (A/B - A/B)	Group II (A/B - C or less)	Group III (C or less - A/B)	Group IV (C or less - C or less)
IA1	13.81 (2.09)	13.55 (2.24)	11.57 (3.41)	13.00 (2.54)
IA2	13.53 (2.57)	13.29 (2.61)	11.71 (2.75)	11.93 (3.31)
MD	0.28	0.26	-0.14	1.07

Note. Standard deviations appear in parentheses; MD = mean difference between IA1 and IA2.

Table 16

Mean Score by Ideal Group on SC1 and SC2

	Group I (A/B - A/B)	Group II (A/B - C or less)	Group III (C or less - A/B)	Group IV (C or less - C or less)
SC1	13.04 (2.12)	12.38 (1.81)	10.57 (2.07)	10.60 (2,56)
SC2	12.81 (2.21)	11.88 (2.10)	10.86 (1.77)	10.40 (1.99)
MD	0.23	0.50	-0.29	0.20

Note. Standard deviations appear in parentheses; MD = mean difference between SC1 and SC2.

Effects of Gender for Ideal Subjects

It was predicted that females would rate themselves lower than males in the domains of both IA and SC. A series of independent t-tests demonstrated that there were no significant gender differences in the ideal subjects' ratings on IA1, IA2, SC1, or SC2 ($t_{109} = 1.15$, n.s., $t_{109} = 1.49$, n.s., $t_{109} = -.80$, n.s., and $t_{109} = -.22$, n.s., respectively).

DISCUSSION

With regard to the Intellectual Ability and Scholastic Competence scales, analysis of covariance indicated that, in each case, the covariate was significant. This may be attributed to the large auto-correlation in each case between the covariate and dependent variable (for the pre- and post-test Scholastic Competence scales, $r = .75$; for the pre- and post-test Intellectual Ability scales, $r = .78$).

When the blocking variable and covariate were dropped from the analysis of the data for all subjects, a main effect for predicted grade with respect to both the pretest IA and SC scales was found. The main effects for predicted grade on both these measures offer construct validity for the IA and SC scales, because students who predicted high grades (A/B) for themselves rated themselves higher in these two domains than did students who predicted low grades (C or less) for themselves. Therefore, the two scales did differentiate between students who predicted high grades and those who predicted low grades.

It was hypothesized that students who predicted a high grade (A/B) would have higher scores on the IA scale than those who predicted lower grades (C or less), and this hypothesis was partially supported by the results of the ANOVAS from the pretest measure of IA in this study. No differences were found among the students on the posttest measure of IA, however.

When the blocking variable and covariate were dropped from the

analysis for all subjects, there was a significant difference in the domain of SC on the posttest measure also, depending on the predicted and actual grades. Specifically, subjects who predicted an A/B had higher scores on the posttest measure of SC than subjects who predicted a C or less. Also, subjects who actually earned an A/B scored higher on SC2 than subjects who actually earned a C or less.

When all the subjects were categorized by predicted and actual grade, analyses demonstrated that IA remained stable within each group from pre- to post-test measures. With regard to SC, however, students who predicted an A/B but actually received a C or less rated themselves significantly lower on SC2 than did students who predicted and received an A/B. This result partially supported the hypothesis that students whose actual scores deviated from predicted scores would differ significantly from students who actually received the grades they predicted. The Scholastic Competence of students who predicted A/B and who did not live up to their expectations on the examination of interest was adversely affected as measured by their self-ratings in that particular domain.

The results of this study indicated that students who predicted a C or below but actually received A/B did not change significantly with respect to their pre- and post-test SC ratings. One may speculate that Scholastic Competence did not significantly increase in light of better-than-expected grades because this one good grade was not viewed as sufficient evidence to offset past experiences with respect to their Scholastic Competence.

According to Neemann and Harter (1986), Intellectual Ability is a global quality, and relatively stable, while Scholastic Competence is less stable, and more likely to be influenced by experiences. That scores on IA remained

stable from pre- to post-test measures while SC changed significantly in one group of students suggests that at least some students, specifically high achievers who do not perform up to their expectations, do differentiate between the domains of Intellectual Ability and Scholastic Competence as defined by Neemann and Harter (1986). This finding offers further construct validity for the IA and SC scales.

When the data were analyzed including only those subjects who were aged 18-23, single, and full-time students, the IA and SC scales again systematically differentiated between students who predicted A/B scores and students who predicted a C or less. For this group of traditional students, however, the difference in ratings in the domain of Scholastic Competence between the A/B predictors who received an A/B and those who received a C or less became insignificant. That the difference noted between high achievers who obtained their predicted grades and those who did not disappeared when the nontraditional students were excluded from the study suggests that as a group, nontraditional students who consider themselves high achievers, but who fail to live up to their own expectations, may be more affected by feedback from the instructor in the form of a test grade than are comparable traditional students. Neemann and Harter (1986) do not recommend the use of the Self-Perception Profile for College Students with nontraditional students. However, this study suggests that it is the nontraditional student, specifically the one who has the pretense of high achievement, who is most likely to distinguish between self-perceptions of his or her Scholastic Competence and Intellectual Ability, as defined by Neemann and Harter (1986). This may be due to greater maturity, experience, a greater sense of responsibility, and a higher standard of achievement in the nontraditional students. This group of nontraditional

subjects who did not meet the above criteria could not be divided into groups of sufficient size for further analysis.

Another measure included in the same manual as the Self-Perception Profile for College Students is the Importance Ratings Scale. This measure indicates how important a particular domain is to a subject. Neemann and Harter (1986) state that according to James' (1892) model of self-esteem, one's self-esteem is only affected by those domains that are important to the self. This measure was not administered as part of this study. However, it may be that Scholastic Competence was more important to the group of students whose ratings were affected by feedback of actual grades than to those whose ratings were not affected. Future studies investigating the Self-Perception Profile for College Students should include the Importance Ratings Scale in order to help clarify results such as those found in this research.

The results of this investigation failed to support the research hypothesis regarding gender differences on the scales of Intellectual Ability and Scholastic Competence, for either the entire group of students or for the group of traditional students separately. There was no significant gender difference on subjects' ratings of themselves for either Intellectual Ability or Scholastic Competence as these domains are defined by Neemann and Harter (1986), in contrast to the findings of McGregor et. al. (1991a and 1991b). McGregor et. al. (1991a and 1991b) reported that the men in their samples rated themselves significantly higher on IA than did the women, but the gender difference was not significant for SC. Neemann and Harter (1986) and Masciuch et al. (1990) do not report significant gender differences in their respective samples on either IA or SC. Crocker and Ellsworth (1990) found no gender differences in their sample on SC, but they did not administer the IA

scale as part of their study. Because the results of these few studies are contradictory or limited to either IA or SC, a meta-analysis of all relevant studies would help to determine if systematic gender differences exceed the effects of bias.

The results of this study indicated a correlation of .42 between predicted and actual grades. This is consistent with the findings of Jacobson (1990), who reported correlations of .40 and .41 between predicted and actual scores on short answer questions and essay questions, respectively. The test question format in this study varied somewhat from class to class, with the majority of classes (ten of eleven) receiving multiple-choice tests questions. Goldman, Flake, and Matheson (1990) reported much higher correlations (range .70 to .88) between perceived and actual grade point averages, but it is noted that they used grade point average, rather than a single test grade, in their study.

Other issues related to self-concept that may have influenced the result of this study include Rotter's (1954) construct of locus of control and Bandura's (1977) construct of self-efficacy. Considering the results of this study, one may speculate that students who predicted high grades for themselves but failed to perform up to that expectation have an internal locus of control. These students may believe they generally have personal control over life experiences. Failing to live up to one's own expectations demonstrates a lack of control in a particular instance. This may explain why their self-concept in the domain of Scholastic Competence was adversely affected by the result of a single test. Conversely, the students who predicted a low score but received a high score may have an external locus of control. They may not have believed the unexpected good grade was a result of their own efforts, and instead, attributed it to an external force (i.e., easy test, luck, instructor was generous).

This may explain why, for this group, Scholastic Competence did not change as result of feedback on actual grade. However, it is noted that Gadzella, Williamson and Ginther (1985) did not find significant correlations between locus of control and grade point average (GPA) for either males or females in their study investigating the relationships between self-concept, locus of control, and academic performance. On the other hand, their study used GPAs taken from university records, and the measure of self-concept was the Tennessee Self-concept Scale. Gadzella et. al. (1985) did not indicate whether their sample of undergraduates included nontraditional students. The results of the current research indicated that academic self-concept, at least in the domain of Scholastic Competence, was influenced by a single test grade for some students. Therefore, further research is needed to determine the relationship between the Self-Perception Profile for College Students specifically and locus of control.

Finally, that students who predicted an A/B scored higher in the domains of IA and SC than students who predicted a C or less may be a result of self-efficacy. Students who believe they will do well should exhibit a greater sense of self-efficacy than students who believe they will not do well. In an article addressing the construct of self-efficacy, however, Bandura (1977) states, "The preceding analysis of how perceived self-efficacy influences performance is not meant to imply that expectation is the sole determinant of behavior. Expectation alone will not produce desired performance if the component capabilities are lacking" (p. 194). Therefore, students' predictions regarding their grades may have less to do with a realistic sense of self-efficacy than wishful thinking. If this is the case, then the effect that feedback has on students' academic self-concept continues to be problematic to

measure if expectation can be attributed to unrealistic hopes rather than to realistic self-concepts.

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APPENDICES

APPENDIX A

Human Research Committee Permission to Conduct Research

APPENDIX A

Permission to Conduct Research



AUBURN UNIVERSITY AT MONTGOMERY
Research and Development

TO: Ms. Claire Skowronski
FROM: James T. Kenny, Vice Chancellor
Research and Development
SUBJECT: Request for Exempt Status for Protocol H930401
DATE: April 14, 1993

Your protocol "The Self-Perception Profile for College Students: Construct Validity of the Intellectual Ability and Scholastic Competence Scales" is **Exempt from Review**. This determination was made in accordance with guidelines set forth in 45 CFR 46.101. The Human Subjects IRB Chair, Dr. Hank Williford, is being informed of my decision by copy of this letter.

You have my best wishes for success in this research endeavor.

JTK/ss

Enclosure

cc: Dr. Hank Williford

APPENDIX B

Authors' Permission To Copy

APPENDIX B

Authors' Permission To Copy

Neemann and Harter (1986) state, "Note that you have permission to copy these instruments for your own use" (p. 4).

APPENDIX C

"What I Am Like" Measure

APPENDIX C

WHAT I AM LIKE

Age_____

Birthdate_____

Gender_____

Course/ Section #_____

The following are statements which allow college students to describe themselves. There are no right or wrong answers since students differ markedly. Please read the entire sentence across. First decide which one of the two parts of each statement best describes you; then go to that side of the statement and check whether that is just sort of true for you or really true for you. You will just check ONE of the four boxes for each statement. Think about what you are like in the college environment as you read and answer each one.

	Really True For Me	Sort of True For Me		Sort of True For Me	Really True For Me		
3.	<input type="checkbox"/>	<input type="checkbox"/>	Some students feel confident that they are mastering their coursework	BUT	Other students do not feel so confident.	<input type="checkbox"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="checkbox"/>	Some students feel like they are just as smart or smarter than other students	BUT	Other students wonder if they are as smart.	<input type="checkbox"/>	<input type="checkbox"/>
16.	<input type="checkbox"/>	<input type="checkbox"/>	Some students do very well at their studies	BUT	Other students don't do very well at their studies.	<input type="checkbox"/>	<input type="checkbox"/>

	Really True For Me	Sort of True For Me				Sort of True For Me	Really True For Me
21.	<input type="checkbox"/>	<input type="checkbox"/>	Some students do not feel they are very mentally able	BUT	Other students feel they are very mentally able.	<input type="checkbox"/>	<input type="checkbox"/>
29.	<input type="checkbox"/>	<input type="checkbox"/>	Some students have trouble figuring out homework assignments	BUT	Other students rarely have trouble with their homework assignments.	<input type="checkbox"/>	<input type="checkbox"/>
34.	<input type="checkbox"/>	<input type="checkbox"/>	Some students feel they are just as bright or brighter than most people	BUT	Other students wonder if they are as bright.	<input type="checkbox"/>	<input type="checkbox"/>
42.	<input type="checkbox"/>	<input type="checkbox"/>	Some students sometimes do not feel intellectually competent at their studies	BUT	Other students usually do feel intellectually competent at their studies.	<input type="checkbox"/>	<input type="checkbox"/>
48.	<input type="checkbox"/>	<input type="checkbox"/>	Some students question whether they are very intelligent	BUT	Other students feel they are intelligent.	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX D

"What I Am Like" Scoring Key

APPENDIX D

WHAT I AM LIKE

Scoring Key

	Really True For Me	Sort of True For Me				Sort of True For Me	Really True For Me
3.	4 (Scholastic Competence)	3	Some students feel confident that they are mastering their coursework	BUT	Other students do not feel so confident.	2	1
8.	4 (Intellectual Ability)	3	Some students feel like they are just as smart or smarter than other students	BUT	Other students wonder if they are as smart.	2	1
16.	4 (Scholastic Competence)	3	Some students do very well at their studies	BUT	Other students don't do very well at their studies.	2	1
21.	1 (Intellectual Ability)	2	Some students do not feel they are very mentally able	BUT	Other students feel they are very mentally able.	3	4
29.	1 (Scholastic Competence)	2	Some students have trouble figuring out homework assignments	BUT	Other students rarely have trouble with their homework assignments.	3	4

	Really True For Me	Sort of True For Me				Sort of True For Me	Really True For Me
34.	4 (Intellectual Ability)	3	Some students feel they are just as bright or brighter than most people	BUT	Other students wonder if they are as bright.	2	1
42.	1 (Scholastic Competence)	2	Some students sometimes do not feel intellectually competent at their studies	BUT	Other students usually do feel intellectually competent at their studies.	3	4
48.	1 (Intellectual Ability)	2	Some students question whether they are very intelligent	BUT	Other students feel they are intelligent.	3	4

APPENDIX E

Subjects' Consent Form

APPENDIX E

Consent Form

You are invited to participate in a study examining selected college students' self-perceptions. We hope this study will enable us to establish construct validity of two specific scales on the Self-Perception Profile for College Students, an instrument which requires you to choose statements which most closely match your perception of yourself in the college environment.

I agree to participate in the research conducted by Claire Skowronski (244-0589). I understand that this participation is entirely voluntary; I can withdraw my consent at any time and have the results of my participation removed from the experimental record. My decision whether or not to participate will not prejudice my future relations with Auburn University at Montgomery.

The following points have been explained to me:

- 1). The reason for the research is to attempt to establish construct validity of two scales of the Self-Perception Profile for College Students as described above. The benefits you can expect from your participation are: participation in a psychological experiment and possible extra credit toward your grade in the class during which you complete the profile.

- 2). The procedure is as follows: Directions for completing the Self-Perception Profile for College Students will be read. Then, you will be asked to complete selected items from the Self-Perception Profile for College Students. You will identify this information by your birthdate and course/section number. After you have completed this questionnaire and it has been collected, you will be asked to predict your midterm exam grade for this introductory psychology/Social & Personal Adjustment class. You will record this, along with your age, race, marital status, and gender, on a form provided for this purpose. You will identify this information also by your birthdate and course/section number. Any personal information pertaining to you will be identified only with this code to ensure confidentiality. Your instructor will also collect your birthdate identified with your name on a separate piece of paper, to be used in a later part of the study. Your name will not appear on any form kept by the researcher except this consent form. The first phase of the study will terminate once this information is collected by the researcher and your instructor.

The second phase of this study is as follows: the instructor for this psychology class will calculate your letter grade on the midterm exam following the administration of the midterm exam in your class. Claire Skowronski will have access to your grade on this exam but it will be identified by the same code described above. The letter grade you predicted as a midterm exam grade in this class along with the letter grade calculated based on your grade on the midterm in this class will be written on a form designed for this purpose. Claire Skowronski will make

two copies of this form, one to keep for her records and one to give to your instructor. Your instructor will identify the form containing your grades by your name and will pass this form to you. As noted above, the only form kept by the researcher which identifies you by name is this consent form. The form containing your name which your instructor passes out to you is yours to keep or destroy. Immediately after reviewing the grade you predicted for yourself along with your actual letter grade on the midterm, directions for completing the Self-Perception Profile for College Students will be read. Then, you will be asked to complete selected items from the Self-Perception Profile for College Students. Claire Skowronski will collect this profile, and this will terminate the second and final phase of this study.

Your active participation in this study requires two (2) sessions. Each session requires approximately fifteen (15) minutes to complete.

- 3). There are no discomforts or stresses that you may face during this research.
- 4). The results of your participation will not be released in any individual identifiable form without your prior consent.
- 5). The investigator will answer any further questions about the research, either now or during the course of the research.

YOU ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE. YOUR SIGNATURE INDICATES THAT YOU HAVE DECIDED TO PARTICIPATE, HAVING READ THE INFORMATION ABOVE.

Signature of Participant

Signature of Witness

Date & Time

APPENDIX F

Instructions to the Students

APPENDIX F

Instructions to the Students:

As you can see from the top of your sheet where it says "What I am Like," we are interested in what you are like as a person. This profile contains statements which allow you to describe yourself. This is not a test. There are no right or wrong answers. Since students are very different from one another, each individual will be marking something different.

Let me explain how these questions work. Please look at the first item. This question asks about two different kinds of students, and we want to know which student is most like you.

1) What you need to first decide is whether you are more like the students on the left side who like the kind of person they are, or whether you are more like the students on the right side who wish they were different. Don't mark anything yet, but first decide which type of student is most like you, and go to that side of the statement.

2) Now, I want you to think about whether that is only sort of true for you, or really true for you. Place an X in the appropriate box.

3) For each statement, check only one box. Do not check both sides, just the one most like you.

For any items referring to class work, please think of your answers as they would pertain to this psychology class.

APPENDIX G

Self-predicted Grades and Demographic Information Form

APPENDIX G

Self-predicted Grades and Demographic Information

Birthdate : _____

Course/Section Number: _____

Age: _____

Race: _____

Marital status: _____

Gender: _____

Are you a full-time student? (Circle one):

YES

NO

What do you predict your midterm exam grade will be in this psychology class?

(Circle one):

A

B

C

D

F

APPENDIX H

Midterm Exam Grades Form: Students' Copy

APPENDIX H

Midterm Exam Grades: Student's Copy

Name: _____

Birthdate: _____

Course/Section #: _____

Letter Grade You Predicted (before midterm): _____

Letter Grade You Received (from your instructor): _____

APPENDIX I

Midterm Exam Grades Form: Researcher's Copy

APPENDIX I

Midterm Exam Grade: Researcher's Copy

Student Number (birthdate): _____

Course/Section #: _____

Letter Grade Student Predicted: _____

Letter Grade Student Received: _____