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**LEGETTE, HELEN ROGERS**  
**SELF-CONCEPT AND ACADEMIC ACHIEVEMENT: A**  
**COMPARISON OF INTELLECTIVE AND**  
**NON-INTELLECTIVE VARIABLES AS PREDICTORS OF**  
**SCHOLASTIC PERFORMANCE AND ANALYSIS OF**  
**SUBGROUP DIFFERENCES IN SELF-CONCEPT.**

**THE UNIVERSITY OF NORTH CAROLINA AT**  
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SELF-CONCEPT AND ACADEMIC ACHIEVEMENT: A COMPARISON  
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IN SELF-CONCEPT

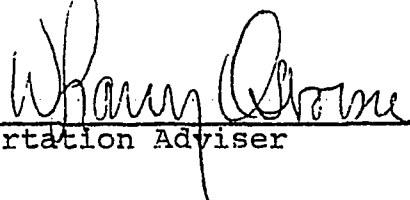
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APPROVAL PAGE

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LE GETTE, HELEN ROGERS. Self-Concept and Academic Achievement: A Comparison of Intellectual and Non-Intellectual Variables as Predictors of Scholastic Performance and Analysis of Subgroup Differences in Self-Concept. (1979)  
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This study involved the examination of selected factors which influence and/or predict academic achievement. Of particular interest was the self-concept, not only as it relates to academic achievement, but also as it might vary from one sex, race, grade level (age), or socioeconomic group to another. A major focus was on the investigation of the relative value of intellectual and non-intellectual predictors of scholastic performance.

It was hypothesized that the self-concept of academic ability would be related to scholastic performance but that neither global self-concept nor the non-academic dimensions of the self would be significantly correlated with academic achievement. Furthermore, it was hypothesized that IQ scores would be better predictors of achievement than would self-concept assessments and that there would be no significant sex, race, grade level, or social class differences in self-concept scores.

The Self-Concept of Ability Scale, the Piers-Harris Children's Self Concept Scale, and the Coopersmith Self-Esteem Inventory were administered to 374 students in the seventh, ninth, and eleventh grades. Pearson correlations were computed between subjects' self-concept scores and their grade

point averages in four major subject areas, their verbal, quantitative, and nonverbal IQ scores, and their standardized achievement scores in English, mathematics, science, and social studies. Analysis of variance techniques were used to examine group differences in self-concept, and stepwise multiple regression analysis was used to compare the contributions of IQ scores and self-concept scores in predicting grades and standardized test scores.

Data for the total sample revealed that global self-concept did show a significant, positive correlation with achievement, but when analyzed by subgroup, that relationship did not hold true for blacks, ninth-graders, or Social Class I subjects. For the total sample, not only the academic self-concept, but certain of the non-academic aspects of self-concept were also significantly and positively related to scholastic performance. Again, there were subgroup departures, however, and the academic self-concept scores were the only non-intellective variables which were consistently correlated with achievement criteria across subgroups.

Both simple correlations and multiple regression analyses indicated that IQ scores surpass global and academic self-concept scores in their value as predictors of achievement. The data reaffirmed that the self-concept does bear a statistically significant relationship to success in school, but when compared to the predictive ability of IQ scores, the contributions of self-concept scores are minimal. For the total

sample and for all subgroups, intelligence test scores proved to be the strongest and most consistent predictors of academic achievement. Although there were no significant sex or grade level differences in self-concept, there were race and social class differences in both global and academic self-concept scores. There were also subgroup differences in some non-academic self-concept scores.

The findings reiterated the need for psychometric improvements in self-concept instruments and emphasized the need for caution in generalizing results based on samples that are dominated by white, middle class subjects. The data further suggested that self-concept assessments may provide complementary information which can aid educators in understanding the scholastic performance of individual students. Despite the latter rather restricted value of self-concept assessments, however, the evidence strongly confirmed the role of intelligence tests in student inventory programs as predictors of academic achievement.

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CHAPTER I  
INTRODUCTION

A major concern of any educational institution is the academic achievement of its constituents. While school philosophies may stress the development of character, aesthetic appreciation, and the creative use of leisure time, professionals and laymen alike expect students to make reasonable scholastic gains as they move through the school system. In an effort to understand students' capabilities and their potential for success in academic endeavors, as well as to assess current levels of progress, school personnel administer formal programs of standardized intelligence and achievement tests. While such cognitive test data are helpful, however, they generally cannot account for the wide variations in achievement by students of similar intelligence levels.

It has long been recognized that intelligence alone does not ensure scholastic success. In 1938, the Committee on the Relation of Emotion to the Educative Process reported that feelings and emotional states play a critical role in the learning process and may actually determine what is learned in a given situation (Beatty, 1969). Subsequent writings have stressed the effects which students' feelings about themselves can have on their performance in school. In

Self-Concept and School Achievement, for example, Purkey (1970) maintained that "academic success or failure appears to be as deeply rooted in concepts of self as it is in measured mental ability, if not deeper" (p. 14). Numerous research studies have revealed significant correlations between scores on various self-concept instruments and achievement in school. Such evidence has caused some educators to advocate abandoning the use of intelligence tests altogether. Proponents of affective education have implied that if school experiences provide sufficient opportunities for success and for enhancing self-esteem, students will reach higher levels of achievement.

While few educators would challenge the importance of assisting students to develop positive self-concepts or the value of humane teaching, there are differences of opinion as to the significance of the relationship between self-concept and academic achievement. At one end of the continuum are those who, like Lecky (1945), feel that "learning can be understood only in terms of the development of the entire personality" (p. 247). It was Lecky's belief, for example, that attempts to increase learning through the use of tutoring or intensive drilling are useless; only by changing the student's perception of himself and his abilities can one hope to improve the student's performance. Following the same line of reasoning, Combs and Snygg (1959) stated that every human being has a basic need to perceive himself as an



adequate self and that whatever the student does in school is affected by that need.

Citing the studies which have shown significant (although usually low) correlations between self-concept and academic achievement, some educators have concluded that a cause and effect relationship is involved. Furthermore, at this point, there is another potential controversy. The question can become one of precedence. Is a good self-concept required before one can hope to achieve in school, or does success in school cause one to have a higher self-concept? Generally, even those who attribute great significance to the influence of self-concept on achievement would concede that the relationship is reciprocal.

At the other philosophical extreme are those who are very critical of self-concept research and who would agree with Jensen (1973) that self-concept scores provide little information which is not already known. The fact that many self-concept studies have involved questionable research designs, small samples, and psychometrically indefensible instruments has strengthened their position. Because some researchers have failed to define the construct they were attempting to measure, generalization from one study to another has been risk-laden. Also, some studies have focused on the relationship between self-concept and subjective indices of achievement (i.e., teacher-assigned grades in one specific course). Few studies have been replicated, and the

present state of self-concept research is somewhat disorganized. Furthermore, even though it is generally accepted that the self-concept is multifaceted, research has often reflected only the relationship between general (global) self-concept and achievement rather than attempting to discern whether only specific aspects of the self-concept may be involved.

Between those writers who ascribe ultimate importance to the influence of self-concept on scholastic performance and those who would discount all self-concept research as meaningless are the researchers who, like Wylie (1963), have maintained that studies attempting to assess the relationship between self-concept and achievement should concentrate only on the academic aspect of the self-concept. W. B. Brookover and his colleagues at Michigan State University, for example, have conducted several studies involving learners' perceptions of themselves as students in general, as well as their perceptions of their ability to succeed in four major subject areas. The correlations between the specific aspects of self-concept and academic achievement have generally been higher than those obtained in studies dealing only with global self-concept, thereby lending support to the theory that only certain dimensions of the self-concept are related to scholastic performance.

Just as there are differences of opinion about the relationship between self-concept and academic achievement, there

is also a lack of consensus about the relative influence of sex, race, socioeconomic status, and age on self-concept. These variables have been rather cursorily examined, and the results have generally been inconclusive. Nevertheless, data which have indicated that differences in self-concept may be related to such factors have at times been over-zealously generalized. It is possible, for example, that the self-concept of a black student differs from that of a white student, but there are conflicting reports as to what the differences are, if indeed they exist at all.

#### Statement of the Problem

This study was an investigation of the relationship between the self-concept and academic achievement. Specifically, the research represents an attempt to discern whether global self-concept is significantly related to performance in school or whether that relationship is limited to only one aspect of the self-concept, the academic self-concept. It was hypothesized that only the latter, more restricted relationship would be confirmed. The study also involved an examination of the correlations between scores on tests of mental ability and both subjective and objective indications of achievement and the correlations between scores on self-concept assessments and achievement so as to compare the relative predictability of intellectual versus non-intellectual variables. A related research concern was that of

demographic variations in self-concept. An effort was made to determine whether there were significant differences in self-concept levels which might be attributable to the sex, race, socioeconomic status, or grade level (age) of the subject. The focus of the study, then, was on the following research questions:

Is the global self-concept significantly related to academic achievement?

Is the relationship between self-concept and academic achievement confined only to the academic aspects of the self-concept?

Are non-intellective variables and intellective variables equally valid predictors of scholastic performance?

Are there significant variations in self-concept scores, according to the age, sex, race, or socioeconomic status of the subject?

Based on the research questions, the following hypotheses were proposed and subsequently investigated:

- I. The global self-concept is not significantly related to academic achievement.
- II. Only one specific aspect of the self-concept, the self-concept of ability, is significantly related to academic achievement.
- III. Intellective variables (i.e., intelligence test scores) are more accurate predictors of academic achievement than are non-intellective variables (i.e., self-concept inventory scores).
- IV. There are no significant variations in self-concept scores which are attributable to the sex, race, age, or socioeconomic status of the subject.

### Significance of the Problem

Insofar as educational institutions are concerned, self-concept research has many implications. If, as some educators have maintained, the relationship between global self-concept and academic achievement is more significant than that between measured intelligence and scholastic performance, there is a need for reviewing and possibly revising most of the testing programs which are now in use. If non-intellective variables do, indeed, surpass the intellective ones in predicting students' academic behavior, then there is perhaps justification for regular, system-wide assessments of self-concept. Also, there would be added evidence for the need for affective education as a means of fostering academic achievement. In order to maximally enhance students' self-concepts ( as an avenue to improved student performance), educators would need to re-examine many aspects of the curriculum.

If, on the other hand, the intellective factors (i.e., intelligence test scores) are shown to be more closely related to achievement, we need to recognize that fact and acknowledge their use in predicting pupil progress. Furthermore, if intellective and non-intellective factors are proved to be complementary, there would seem to be justification for the use of both types of assessment in student inventory programs.

The issue does not have to be an either-or proposition, however; cognitive and affective approaches to education are not necessarily mutually exclusive. Even if it were to be shown that a student's self-concept was totally unrelated to his performance in school, the need for providing an atmosphere of appreciation for individual worth and dignity would not be negated. Neither is it likely that the total abandonment of intelligence test scores would be implicated. Therefore, the major contribution of self-concept research lies not so much in confirming or denying the use of specific instruments, but in providing an empirical foundation for various educational procedures. Too many educational theories and techniques have been implemented because professionals sensed intuitively that they were appropriate and effective. Periodically, those same techniques have been discarded in compliance with shifts in educational philosophy.

Emphasis on the self-concept and its influence on academic achievement has also fluctuated cyclically and has been dependent to some extent upon the educational and philosophical theories which were currently in vogue. The use of data based on carefully designed, scientifically sound investigation of the self-concept (or of any other factor related to education) can help to remove educational practices from the realm of the speculative and to increase the credibility of school programs.

Beyond the placing of educational procedures on firmer theoretical footing, however, research on the self-concept can provide important information which will enable school personnel to work more effectively with students. Jersild (1952) has stated that the school is "second only to the home as a place where the social forces which influence a child's attitudes toward himself and others are concentrated" (p. 7) and that the school "dispenses praise and reproof, acceptance and rejection on a colossal scale" (p. 90). There is little doubt that for most students, particularly the very young, teachers and other school personnel are "significant others" and that students generally respond positively to experiences which enable them to perceive themselves as worthy and capable human beings.

Neither the extent of teachers' influence on the self-concept nor the degree of change which occurs in the relationship between self-concept and academic achievement as the student moves through the educational system is fully understood at the present. If there are, for example, age differences in self-concept or differences in the relationship between self-concept and scholastic performance, there is a need for educators to understand those differences. Likewise, if the student who is from a family of lower socioeconomic status appears to have a lower self-concept than his intellectual peers who are from more favored backgrounds, teachers need to know whether this is an individual difference

or whether it is part of a trend which is typical of those in similar circumstances. The same may be said for race and sex differences. If there are variations in self-concept which are proved to be related to factors such as age, socioeconomic status, race, and/or sex, there would be evidence for implementing special programs for such groups or, at least, formulating expectations for individual students which would reflect consideration of those differences.

#### Assumptions and Limitations

Any research project involving the assessment of self-concept is subject to certain limitations. One problem stems from the absence of a widely accepted definition of self-concept. Another is the absence of clear theoretical propositions which lend themselves to hypothesis testing. Wylie (1961, 1974) has been particularly critical of the instruments which have been used to measure self-concept. Lacking a clear statement of the construct being considered and having questionable theoretical foundations, some instruments do not have construct validity; most fail to meet the minimum psychometric standards outlined by Wylie. While the instruments employed in this study have been rather widely researched and are apparently among the better instruments available, they also have some weaknesses. (A summary of the psychometric data on each will be presented in Chapter III).



In addition to problems of definition and theory, there are some subjective factors which affect most psychological assessment and which cannot be controlled easily. There is no assurance, for example, that an inventory item will be interpreted in exactly the same way by any two subjects. Words like "never," "often," and "many" have ambiguous connotations, and differences in their interpretation may affect overall inventory results. It is also possible that some students use response sets, whereby they answer in a generally positive or in a generally negative way without giving careful attention to specific item content. Further, students' attitudes toward the inventory, their teachers, the test administrator, and/or school in general could have some contaminating effects on test results. This particular problem is not unique to self-concept research, however; it is simply a reality of any kind of testing in educational settings.

Another limitation is related to social desirability. Human beings usually want to present themselves as favorably as possible. Therefore, subjects might select inventory items which they believe represent desirable characteristics. Furthermore, they may respond according to the way they would like to be (ideal self) rather than the way they actually perceive themselves to be (real self). Subjects, especially adolescents, have physical and emotional fluctuations, and these changes, while probably not altering overall self-concept,

can affect an individual's responses to inventory items on a given day. It is possible that one or more of these limitations influenced the results of the present study.

Combs, Soper, and Courson (1963) have expressed concern that the results obtained through the use of most self-concept instruments reflect not what the individual really believes, but only what he is willing or able to reveal; therefore, they advocate the use of trained observers to infer students' self-concepts. Ideally, the researcher would provide an atmosphere in which the subject's communication about himself or herself would be a "free expression unmodified by a need or desire to be defensive" (Rogers, 1951, p. 496). Such conditions, while desirable, are not practical with large numbers of subjects. Therefore, even though there are some limitations in the use of their results, self-reports based on students' responses to a variety of inventory items seem to be the only feasible means of assessing self-concepts within the school setting at the present time.

As Rogers (1951) has pointed out, our knowledge of another person's frame of reference "depends primarily upon communication of one sort or another from the individual. Communication is at all times faulty and imperfect. Hence, only in a clouded fashion can we see the world of experience as it appears to the individual" (p. 495). From a phenomenological standpoint, however, Wylie (1974) has stated that the

self-report is a "valid indicant" of the individual's self which the subject is conscious of. The phenomenological examiner who uses the self-report views the results as the subject's honest appraisal of himself or herself. Insofar as this study was concerned, an attempt was made to win the subjects' confidence and to ensure testing conditions which would be conducive to truthful responses; beyond that, it was assumed that most students were responding in as honest a manner as they were able. Like Gordon, the author believes that truthfulness and meaningfulness are more important than "objective reality." At the same time, it must be kept in mind that procedures to assess the self-concept are not precise; they are "sundials, not clocks" (Gordon, 1966, p. 54).

Another limitation which is characteristic of self-concept study concerns the research design itself. Because of the theoretical problems and construct definition, as well as numerous uncontrollable variables, most research on the relationship between self-concept and academic achievement has been correlational in nature. Research which establishes correlations is not so conclusive as that which involves definite causes and effects. While it is possible to show relationships between variables, the existence of a correlation does not imply cause and effect and should not be interpreted as such.

Limitations which are peculiar to this study center on the population studied. While an attempt was made to include a cross section of the community, with a balance in sex, race, and ability and socioeconomic levels, random sampling was not possible. Subjects were selected by classes rather than as individuals so as to avoid disrupting the daily routine for other students. The sample could have been limited further by the refusal of some students to participate or by the unwillingness of some parents to give permission for their children to be included. Yet, only one of the students' parents requested that her child not be included in the study. The decision to include students in grades seven, nine and eleven was based on the desire to study the self-concept of students in the early, middle, and late stages of adolescence. Research findings are not necessarily applicable to older or younger subjects.

The sample was representative of the student population in a comparatively small town in the Piedmont section of North Carolina, and as such, might reflect demographic features which are characteristic of that area. When compared with the nation as a whole, for example, there is relatively little diversity within the community, and many of the students have very similar backgrounds. Inventory results are therefore somewhat limited in their potential for generalization. Yet, the adolescents in this study have many characteristics with their age-mates throughout

the United States. Trends which appeared should at least be indicative of those which would occur in similar samples in different geographical locations.

### Definition of Terms

Although both self and self-concept will be discussed at some length in the review of the literature (Chapter II), it seems appropriate to provide brief, working definitions of these and other terms used in this paper.

Self-concept refers to the thoughts which an individual holds about himself. It is, as Combs and Snygg (1959) have stated, "what the individual believes about himself" (p. 494). The self-concept, which arises from interactions with others, also has an evaluative element which results from the individual's perception of the ways he or she is similar to and different from others (McCandless & Evans, 1973). The evaluation of one's own characteristics in comparison with those of others leads to the development of self-regard or self-esteem, which is a "personal judgment" of one's worthiness (Coopersmith, 1967, p. 7). Comparisons of the self with others also results in the development of the ideal self-concept (the self as the individual would like to be) and the real self-concept (the self as the individual actually perceives himself or herself to be).

The global self-concept or general self-concept refers to the total configuration of attributes which the individual

believes to be characteristic of himself or herself. The general self-concept is stable and resistant to change, but within it are specific aspects or dimensions of the self-concept which are subject to some dynamic influences. While the specific components of the general self-concept may be debatable, the major dimensions appear to be the academic and the non-academic self-concepts (Shavelson, Hubner, & Stanton, 1976). The academic self-concept, which is considered to be synonymous with the self-concept of ability, is the facet of the self-concept which relates to the individual's perception of himself or herself as a learner and of his or her ability to perform in the various subject matter areas. The other major component of the general self-concept is the non-academic self-concept; it incorporates the social, emotional, and physical dimensions of the self-concept.

The study of the self-concept may be approached from a phenomenological or a nonphenomenological standpoint. The phenomenological or phenomenal self refers to the self of which the individual is consciously aware and is the composite of perceptions of the self "which are admissible to awareness" (Rogers, 1951, p. 501). Although it may include distortions, it represents reality to the individual. The nonphenomenal self, by contrast, includes the unknown aspects of the self. Even though this dimension of the

self may affect the individual's behavior, to the subject, it is "nonconscious, unknown, and unrecognized" (Jersild, 1963, p. 27). The research presented in this paper relates only to the phenomenal self.

Insofar as this study is concerned, academic achievement refers to the successful performance of academic tasks. While teacher-assigned grades are the most familiar and immediate indicators of scholastic success, they reflect many subjective influences. Scores on standardized achievement tests were considered to be more objective assessments of achievement--at least for the majority of subjects.

Factors which influence an individual's academic performance may be considered to be either intellectual or non-intellectual. Intellectual variables refer to those factors involving cognitive processes or mental ability. They are assessed through the use of intelligence or scholastic aptitude tests. Non-intellectual variables are those which relate to emotions and feelings; they involve affects, opinions, and personal evaluations. Self-concept scales, personality inventories, and other psychological instruments provide indications of the non-intellectual factors and their level of development.

## CHAPTER II

### REVIEW OF THE LITERATURE

The literature related to the self and to self-concept is so vast that it would be impossible to give comprehensive coverage in a study such as this. References to the self abound in behavioral science textbooks, professional journals, and popular magazines. Yet, even a surface sampling of articles reveals great diversity in connotations of terms. Therefore, before presenting a survey of research related specifically to the self-concept and academic achievement, the writer would like to offer a general theoretical background for the study of the phenomenal self (the self which the individual is consciously aware of) and to discuss some of the properties which are generally attributed to the self-concept.

#### Theories of Self

Ruth Wylie (1961, 1974) has charged that although the number of empirical studies on the self-concept has increased in recent years, there have been few significant contributions to self theory since the 1940s and 1950s. Furthermore, after a review of the literature, Wylie concluded that the existing theories are "in many ways ambiguous, incomplete, and overlapping (1961, p. 3). In spite of such weaknesses



and the absence of specific hypotheses of the self which are amenable to empirical investigation, however, there is general agreement about some of the characteristics of the self. For example, most theorists concur that the self does exist, that it has motivational properties which cause the individual to seek or to avoid certain activities, and that the self can be and is experienced directly by the individual.

Writing in 1890, William James described the "empirical self" as all that the individual is "tempted to call by the name of me" and as the "sum total of all that he can call his" (1950, p. 291). James viewed the self as being comprised of four constituents, including the material self, the social self, the spiritual self, and pure ego. The material self, according to James, consists of the body (the innermost part of the material self), clothes, family, and possessions, whereas the social self is the recognition which one receives from others. There are, for example, for any given individual, "as many social selves as there are individuals who recognize him and carry an image of him in their mind" (James, p. 294).

James described the pure ego constituent rather briefly as one's personal identity, but to the spiritual self he ascribed great importance. He viewed it as the "most enduring and intimate part of the self, that which we most verily seem to be" (p. 296). Further, the spiritual self is the "active element in all consciousness" and is the "home of interest"

as well as the "source of effort and attention." James acknowledged that even in his day there were conflicting opinions about the spiritual self and mentioned that some would regard the self as the "soul of which they are . . . conscious," while others would say that it was "nothing but a fiction" (p. 298). Yet, he maintained that the spiritual self is the central part of the self and that it is felt by the individual. This self, or soul, is therefore, "something with which we also have direct sensible acquaintance" (p. 298).

George H. Mead (1934) also made some significant contributions to self theory, but he concentrated more on the social than on the spiritual aspects of the self. Unlike James, who incorporated the body into the material self, Mead stressed the existence of the self as "an object to itself" which is separate and distinct from the body. Bodily experiences, Mead maintained, are "organized about the self," but it is possible to lose parts of the body without "any serious invasion of the self" (p. 136). While the body is essential to the self, Mead stressed that we can at least conceptualize a self apart from the physical organism.

According to Mead, the self is social in origin, and linguistic contact with others is essential for the self to develop. Communication through the use of symbols (language) makes it possible for others to convey their attitudes and opinions to the individual, and once he has had the experience of communicating with others, the individual is capable of

carrying on conversations with himself. The self then becomes reflexive; it can be both subject (I) and object (me). According to Mead (p. 175), "the attitudes of others constitute the organized 'me', and then one reacts to that information as an 'I'. In other words, the individual takes the attitude of the "generalized other" (the organized community or social group) toward himself in much the same way that others seem to regard him. This taking of the attitudes of the organized social group is essential to the development of a "complete self." Furthermore, assuming the position of the other toward oneself is necessary for the individual to be able to think at all (pp. 154-156).

Mead maintained that the self arises out of many individual social interactions which are organized into the attitudes of the generalized other without reference to specific individuals or acts. The attitudes incorporated into the self represent those of the group as a whole. The self, reflecting the "general systematic pattern of social or group behavior in which it and others are involved (p. 158), is not a physical entity but is a structure of attitudes. Despite the social commonalities within any society, however, each one of the selves is distinct from all others, and each individual has many different selves. Reflecting James' view that we have as many social selves as we have acquaintances, Mead stressed that the social experience itself "determines the amount of the self that gets into the

communication"; that is, "we are one thing to one man and another thing to another" (p. 142). Even though there are numerous social selves, though, certain parts of the self are not revealed to others. They "exist only for the self in relationship to itself" (p. 142).

The importance of social contact and experience is also central to Lecky's theory of personality. Lecky (1945) believed that the personality develops as a result of "contacts with the world" and incorporates "into itself the meanings derived from external contacts." In other words, the personality (or self) is the "organization of experience into an integrated whole" (1951, p. 155). According to Lecky, however, the central factor in the individual's experience is himself and the interpretation of his own meaning; "the kind of person he is, the place he occupies in the world, appear to represent the nucleus of the personality" (p. 156). The individual has the dual problem of maintaining harmony with the external world and simultaneously maintaining self-consistency. He views the world from his own vantage point, with himself at the center and seeks or rejects values, attitudes, and experiences according to their consistency with his evaluation of himself.

Attempting to provide a three-dimensional model for his theories, Lecky compared the structure of the personality to that of an atom. The center or nucleus of the atom consists of Ideas of Self, with those ideas which are strongly

supportive of self (either positive or negative) being very near the nucleus. Other ideas are located in orbits at various distances away, according to the degree of their importance to ideas of self. Ideas, like electrons, change their relative positions within the atom and may "jump from one orbit to another" (p. 275), but those ideas which are most closely related to the individual's concept of himself are carefully maintained and are resistant to change. Less vital ideas about the self and the world are dynamic and are constantly revised according to new experiences. Although it has been modified and labeled in a variety of ways, Lecky's conceptualization of the self has served as a model for many subsequent theorists.

Like Lecky, Carl Rogers (1951) also described the individual as existing in a constantly changing world, with himself at the center. Even though he acknowledged the existence of material which the individual cannot consciously experience, Rogers stressed that a tremendous amount of information is available to consciousness at any given time. Not all of that material is of equal importance, however; experiences are constantly shifting from figure to ground and from ground to figure within the perceptual field of the individual.

Rogers emphasized that no two individuals react to an experience in exactly the same way. Each has his own perceptual field which constitutes "reality" for him. This reality is based, not on any objective criteria, but strictly on the

perception of the individual. As the individual develops, part of the perceptual (or phenomenal) field gradually becomes differentiated as self. Although there is no sharp distinction between the experience of the self and the outside world, a particular experience is more likely to be considered a part of the self if it is perceived as being within the control of the self (p. 497).

Rogers used the term "self" to mean the "awareness of being, of functioning" and viewed its origin as the result of the interaction of the individual with the environment and of the "evaluational interaction with others" (p. 498). The structure of the self, according to Rogers, is "an organized, fluid, but consistent conceptual pattern of characteristics and relationships of the 'I' or the 'me', together with the values attached to those concepts" (p. 498). Rogers, like Mead and Lecky, emphasized the importance of the values and attitudes which the individual takes over from others. However, he added that such values and attitudes do not necessarily reflect direct experience. They may be "introjected or taken over from others, but perceived in distorted fashion" (p. 498).

Rogers further described the self-structure as "an organized configuration of perceptions of the self which are admissible to awareness" (p. 501). It is composed of one's perceptions of his "characteristics and abilities, percepts and concepts of the self in relation to others and to the

environment" and also includes the "value qualities perceived as associated with experiences and objects, and goals and ideals which are perceived as having positive or negative value" (p. 501). Thus, Rogers once again stressed the importance not only of the self, but of the self-in-relationship to others. He, too, stated that the perception of a particular experience is dependent upon its relative consistency with the self and that ways of behaving which are adopted by the individual are "those which are consistent with the concept of self" (p. 507). Any experience which is inconsistent with the self may be perceived as a threat. The ultimate goal of personality development, according to Rogers, is a "basic congruence between the phenomenal field of experience and the conceptual structure of the self" (p. 532). Thus, like Lecky, Rogers saw a need for harmony between the internal and the external worlds of the individual.

Combs and Snygg (1959) also viewed the self as the central core of the personality around which all other perceptions are organized. They maintained that the self is the "point of reference" for everything which the individual does; both thoughts and acts of behavior are determined by one's ideas about oneself and one's abilities (p. 122). Each perception about oneself also has an attendant positive or negative value (good, bad; fat skinny; ugly, beautiful). The individual gradually forms perceptions about himself or herself as an adequate or inadequate person, not only from

personal exploration, but also through the mirror of himself represented by the actions of those about him" (p. 134). Like several of their predecessors, Combs and Snygg also described the self as "essentially a social product arising out of experience with people"; that is, "we learn who we are and what we are from the way we are treated by others" (p. 134).

In agreement with both Lecky and Rogers, Combs and Snygg also stressed that certain perceptions, such as one's concept of self as a man or a woman are much more central to the self than are others. These core ideas are very resistant to change, whereas less important perceptions may be changed rather easily. Thus, they too ascribed both stable and dynamic properties to the self. Combs and Snygg also used the figure-ground analogy to illustrate that concepts of self vary in sharpness or clarity according to the situation.

Combs and Snygg also described the self as both the product of the individual's experience and the producer of new experience. They, too, viewed the self as both subject and object, but they used the more specific term "phenomenal self" to refer to the organization of all of an individual's concepts of self, or the perceived self. Thus, they limited the self to that which the individual is conscious of. The phenomenal self, according to Combs and Snygg, is the "individual's own unique organization of ways of regarding self," and "the Gestalt of his concepts of self." For the



individual, the phenomenal self is "himself from his own point of view" and "is the individual as he seems from his own vantage point" (p. 126).

Combs and Snygg stated that what an individual does is largely determined by "the concepts he holds about himself and his abilities" (p. 122). Therefore, if one understands the phenomenal self of another, the other person's behavior will appear consistent and predictable. There is a problem, however, in that the self cannot be observed directly. It can be understood only through somebody's perceptions. As a result, "what the particular qualities of a 'real self' are . . . we can never know" (p. 123). Nevertheless, we can study ways in which the self is perceived by the individual. Combs and Snygg, by referring specifically to the phenomenal self, made an important distinction between the conscious (phenomenal) self and the unconscious (nonphenomenal) self.

In agreement with Lecky, Rogers, and Combs and Snygg, Jersild also emphasized the dynamic and stable qualities of the self. He stated that the self is "continuously growing and changing"; yet, it is "strongly geared to prevent growth and change" (1952, p. 19). The individual strives to maintain the basic core of ideas about himself (his selfhood) even though those ideas may be based on what appear objectively to an observer to be false premises.

Jersild also placed emphasis on the phenomenal self and referred to the self as "the custodian of awareness" and as

the "composite of thoughts and feelings which constitute a person's awareness of his individual existence, his conception of who and what he is" (1952, p. 9). Jersild described the self as the individual's "inner world as distinguished from the 'outerworld' consisting of all other people and things." According to Jersild, the self is the person's "total environment" and the "center of experience and significance" (p. 9).

Defining the phenomenal self as "the self which, as a phenomenon, appears, shows, is perceptible," Jersild (1960, p. 124) described the self as having three components. The perceptual component refers to the way the individual perceives himself; that is, it is the image he has of his appearance and of the impressions he makes on others. The individual's conception of his distinctive characteristics, abilities, strengths, limitations, and prospects comprises the conceptual component; and his feelings about himself, his attitudes, and his feelings of self-esteem and self-regard make up the attitudinal component of the self.

Jersild viewed the self as having two major dimensions: the known and the unknown. The known self is a person's "own subjective evaluation" of himself and how he came to be that way. It is comprised of one's convictions and what he knows or thinks he knows about himself; it does not reflect what the individual has forgotten or is unable to perceive. According to Jersild, the individual's known self "may include

views which, according to all standards but his own, are incorrect. But to him, it is real" (1963, p. 23). The known self is comprised of the actual self (one's ideas and attitudes about what he is really like) and the ideal self (one's ideas about what he would like to be like).

The unknown dimension of the self is the non-phenomenological self. It is subject to numerous unconscious influences. The unknown self, somewhat analogous to the Freudian ego, is caught in the constant struggle between the id and the superego. This aspect of the self is "nonconscious, unknown, and unrecognized to the individual" (1963, p. 27). In a sense, Jersild merged two divergent streams of thought by acknowledging the existence of both the known and the unknown selves. He emphasized the phenomenal self without discounting the non-phenomenal self or its influences.

A review of the literature related to the self tends to confirm that Wylie was correct in her statement that few contributions have been made in recent decades. The writings of most modern theorists seem to be variations on the themes presented by earlier writers. Therefore, this review is limited to major contributors only; it is of necessity restricted in scope and is offered to provide a very general theoretical framework for the study of the phenomenal self.

#### Properties of the Self-Concept

There is some overlapping of material related to the self and that which refers specifically to the self-concept.

Because the meaning intended by a particular researcher can influence the interpretation of his findings, it seems appropriate to consider what the self-concept is and to examine the properties which are usually ascribed to it. According to Combs and Snygg, every individual has many perceptions of himself, and those perceptions may be referred to as "concepts of self." These concepts of self are "the more or less discrete perceptions of self which the individual has differentiated as descriptive of the self he calls I or me" (Combs & Snygg, 1959, p. 124). The self-concept is used by the individual as the "symbol or generalization of self which aids in perceiving and dealing with self"; it represents one's attempt "to reduce his self organization to its essence so that he may be able to perceive and manipulate it effectively." The self-concept is, then, "the self 'no matter what'" (p. 127).

Combs, Soper, and Courson further defined the self-concept as "what an individual believes about himself" (1963, p. 494). They distinguished the self-concept from the self-report ("a description of self reported to an outsider") and from the inferred self-concept (an estimate of an individual's self-concept based on observation of behavior and on oral and written communications). Although they acknowledged possible relationships between self-concept and self-report, Combs et al. challenged the interchangeable use of the terms.

Kinch (1963) offered a more concise definition of the self-concept. He used the term to refer to "that organization of qualities which the individual attributes to himself" (p. 481). These qualities include both roles and attributes; the self-concept develops out of contact with others and it guides and influences the individual's actions. LaBenne and Green (1969) also ascribed motivational qualities to the self-concept, which they defined as "a person's total appraisal of his appearance, background, and origins, abilities and resources, attitudes and feelings" (p. 10). Elaborating further, they stated that the self-concept is the individual's conscious awareness, what he thinks and feels" and "that which primarily guides, controls, and regulates his performance and action" (p. 10). The thoughts, emotions, and attitudes which comprise the self-concept are strongly related to the individual's perception of how others regard him.

McCandless (1970) also emphasized the drive properties of the self-concept, indicating that the construct can be both selective and directive. The selective function causes the individual to select "as life styles those sectors of life which . . . combine maximum value with maximum chance of success" and to de-emphasize those in which there is little chance of success (p. 444). The directive function results in the individual's attempting to do things in which he or she has a good chance of succeeding and to avoid those

in which failure seems imminent. In other words, the self-concept motivates individuals to conduct their lives so as to maintain the perceptions they have of themselves. McCandless further defined the self-concept as being both subjective - idiosyncratic, "forever personal" - and objective - a social definition of self provided by the "consensus of those who know the individual intimately" (p. 444).

McCandless and Evans (1973) incorporated a clearly phenomenological dimension by describing the self-concept as the individual's "awareness of his own characteristics and attributes, and the ways in which he is both like and unlike others (p. 389) and as "what a person knows and thinks about himself" (p. 388). Thus, the individual is viewed as forming opinions of himself or herself as a result of contacts with other people. From individuals' evaluations of themselves, as compared with others, they develop positive or negative feelings about themselves. These value judgments are indications of one's level of self-esteem, which Coopersmith (1967) defined as the "evaluation which the individual makes and customarily maintains with regard to himself" (pp. 4, 5). It is a "personal judgment of worthiness that is expressed in the attitudes which the individual holds toward himself" (p. 5). Self-esteem appears to be the result of a process of self-evaluation, in which the individual assesses his performance, aptitudes, and characteristics and "arrives at a decision of his own worthiness" (p. 7).

Calhoun, Kurfiss, and Warren (1976) attempted to differentiate between self-concept and self-esteem. They maintained that self-concept refers to "the way an individual perceives himself and his behavior, and his opinion of how 'significant others' view him" (p. 132). Self-esteem, by contrast, is "the individual's satisfaction with himself, his behavior, and his performance" (p. 132). Calhoun and Morse (1977) further stated that the self-concept, which is "the logical developmental antecedent of self-esteem," is more stable and constant than self-esteem, which "may more readily fluctuate from time to time" (p. 320).

Although he did not refer directly to self-esteem, Beatty (1969) proposed ideas about the self-concept which are similar to those of McCandless and Evans and Coopersmith. The self-concept, according to Beatty, is "an organization of images which each person has about himself in the world," (p. 76). Beatty dichotomized the self-concept into the "perceived-self-in-the-world" (the self as the individual perceives that it is) and the "concept of adequacy" (the self as the individual perceives that it should be if the person is to succeed in the world). The two aspects of the self-concept overlap somewhat, but they also differ, and the discrepancy between them can serve as a source of motivation (pp. 76, 77).

There seems to be general consensus that the self-concept is comprised of many facets. Brookover, Thomas, and

Paterson (1964), for example, emphasized that the self-concept is "a complex of several segments including the self-concept of ability" (p. 271), and their research was concerned with only one aspect of the self-concept ("the person's conception of his own ability to learn the accepted types of academic behavior"). McCandless (1970) stated that the self-concept is a complex set of categories, including intellectual competence, physical attractiveness, physical skills, social attractiveness, sex-typing and identification, leadership qualities, moral qualities, and sense of humor; each category has an attendant value or set of expectancies.

Describing the self-concept as the core or "center of gravity" of the personality, Hurlock (1973) also viewed it as the "organization of qualities that the individual attributes to himself" (pp. 324, 325). She, too, viewed the self-concept as multidimensional and listed the following as elements of the self-concept: physical self-image (tallness, fatness), psychological self-image (honesty, shyness), real self-image ("mirror image" of what the individual believes others think of him), and ideal self-image (what the person would like to be, physically and psychologically).

In a review of self-concept research, Zirkel (1971) reported fifteen different definitions of the self-concept. More recently, Shavelson, Hubner, and Stanton (1976) found much diversity in definitions, and they identified



seventeen dimensions upon which self-concept could be classified. Yet, in spite of the variations, there are many commonalities in the descriptions of self-concept. From their study, Shavelson et al. concluded that the self-concept, in very broad terms, refers to "a person's perception of himself" which is formed through his experiences with the environment and is "influenced especially by environmental reinforcements and significant others" (p. 411). They limited the term "self-concept" to "a person's report of self," thereby incorporating the self-concept, self-report, and phenomenal self.

Because their model of the self-concept integrates much of what has been written about the self-concept, it seems appropriate to examine it in some detail. It provides a conceptualization of the self-concept which is consistent with the theories of the self which were presented in the previous section of this paper. Attempting to synthesize their findings, Shavelson et al. proposed that seven "critical features" characterize the self-concept. First, the self-concept is organized; it is a way of structuring and giving meaning to one's experiences. The self-concept is also multifaceted. While the specific dimensions vary in the literature, there is evidence to indicate that four general areas of experience (academic, social, emotional, and physical) are involved. The self-concept also appears to be hierarchical, with the general self-concept being at the highest level of the hierarchy.

The general self-concept is divided into two subheadings, the academic self-concept and the non-academic self-concept. The academic self-concept is further broken down into self-concepts in the main academic or subject areas (i.e., English, mathematics, etc.) which are, in turn, subdivided into specific experiences related to each subject area. The non-academic self-concept is comprised of three broad areas, including the social, emotional, and physical self-concepts. Peers and significant others represent the two subheadings of the social self-concept; particular emotional states are involved in the emotional self-concept; and both physical ability and physical appearance are a part of the physical self-concept. Each of the lower levels of the non-academic self-concept is further differentiated into situation-specific experiences.

Another characteristic of the self-concept is that it is stable, especially near the top of the hierarchy. Therefore, the general self-concept is highly resistant to change. Even though lower level self-concepts vary at the base of the hierarchy, numerous situation-specific experiences that were inconsistent with the general self-concept would be required to effect change in the individual's overall perception of himself.

The self-concept is also developmental, according to Shavelson et al. The self-concept of a child is "global, undifferentiated, and situation specific" (p. 414). As the

child increases in age and experience, his self-concept becomes increasingly differentiated. That is, through contact with others, the developing child becomes more aware of himself as both subject and object and "builds concepts for categorizing events and situations" (p. 414). As the child grows, certain aspects of his being become more important than others, and persons and experiences assume varying levels of significance for him.

Furthermore, the self-concept is evaluative. As the developing child acquires perceptions of himself, he also develops descriptions of himself, each of which has a positive or negative value. The standards by which the individual judges himself may be either absolute (ideal) or relative. (This quality of the self-concept as described by Shavelson et al. appears to be analogous to self-esteem as defined by Coopersmith.)

The final characteristic attributed to the self-concept is that it is "differentiable from other constructs with which it is theoretically related" (p. 415). The hierarchical model serves to indicate the direction one would take in illustrating "how the self-concept is differentiable from, and related to, other constructs" (p. 415). The relationship between self-concept and behavior is much closer in specific situations. Therefore, if one examined the academic side of the self-concept hierarchy, it is probable that the self-concept of mental ability would "be more closely related to

academic achievement" than to social or physical ability and that the self-concept of academic ability in science would be "more closely related to achievement in science than to achievement in, say, English or overall grade-point average" (p. 415).

Shavelson et al. emphasized that the hierarchical representation of the self-concept is highly tentative and that additional research is needed. Nevertheless, the model appears to this writer to be the clearest conceptualization of the self-concept in available literature. Because the model is closely related to much of what has been written about the phenomenal self, it will serve as the theoretical model for the present research.

### Self-Concept and Academic Achievement

Empirical research studies on the self-concept and academic achievement are numerous and diverse, and the types of studies may be grouped into any number of possible categories. For purposes of convenience, the studies have been grouped into three general categories, based on the particular approach used by the researcher. For example, some writers have concentrated only on the relationship between the academic self-concept and scholastic performance; others have used self-concept scores to distinguish achievers from non-achievers; and still others have used assessments of general or global self-concept to predict academic achievement.

Although the specific research designs vary greatly, these three approaches seem to be the most commonly used in self-concept studies.

Some confusion has resulted from the sweeping generalizations which have sometimes been made about "self-concept" without placing the term within its appropriate research context. Ruth Wiley, who appears to have researched the literature related to self-concept more thoroughly than any other writer, has charged that most of the studies on self-concept assume that there are individual differences in overall or global self-concept which may be related to academic achievement. She has questioned (1963) whether a g factor can be identified in the numerous self-concept instruments. Such a global factor, if demonstrated, would account for a relatively small portion of the variance in instruments. Consequently, Wiley's own self-concept research has involved a "more restricted aspect of self-evaluation, children's estimates of their ability to do schoolwork" (1963, p. 203).

Likewise, W. B. Brookover and his associates at Michigan State University have focused their research, not on the self-concept in general, but on the "self-concept of ability," which is limited to "behavior in which one indicates to himself (publicly or privately) his ability to achieve in academic tasks as compared with others engaged in that same task" (Brookover, Erickson, & Joiner, 1967, p. 8). Brookover et al. thus confined their work to a relatively narrow aspect of the

self-concept and limited both their investigation and the interpretation of their data to the self-concept of academic ability. Further, they indicated that a person might hold more than one self-concept of ability; that is, a student's self-concept of ability in English can be very different from his concept of his ability to do mathematics. Therefore, Brookover et al. devised the Self-Concept of Ability Scales, which yield not only a general self-concept of ability score, but also provide specific self-concept of ability scores in four subject areas, including English, mathematics, science, and social studies.

In a major study, Brookover, Paterson, and Thomas (1962) collected data on 1050 seventh grade students. Their primary concern was the relationship between a student's self-concept of ability as a learner and his academic performance. Using the Self-Concept of Ability Scales, Brookover et al. found a correlation of .57 between grade point average and general self-concept of ability for both males and females when intelligence was controlled. They also found that there were differences in self-concept of ability in the various subject areas, and that self-concept of ability in the specific subject areas was related to the student's actual performance in each of the subjects in approximately the same way that general self-concept of ability was related to overall achievement when the four subjects were combined.

Brookover, Paterson, and Thomas also found that overall self-concept of ability was a better predictor of total grade point average than were scores on specific subject subscales. In some cases (particularly among males), specific subject self-concept of ability was better than general self-concept of ability in predicting grade point average in the corresponding subject. However, when both general self-concept of ability and specific self-concept of ability scores were used in combination to predict performance in a specific subject, the resulting correlations were higher than when either was used alone.

When they examined the relationship between self-concept of ability and measured intelligence (California Test of Mental Maturity), Brookover et al. found correlations of .46 (boys) and .48 (girls). When grade point average was partialled out, however, the correlation dropped to .17, indicating that self-concept of ability differs from measured intelligence. The data also revealed that those students who were characterized as high achievers had significantly higher self-concept of ability scores than did those under-achievers of similar intelligence levels. Their research led Brookover et al. to conclude that self-concept of ability functions independently of intelligence in predicting academic achievement.

Commenting further on the same study, Brookover, Paterson, and Thomas (1964) reported that the correlation of IQ and grade

point average was .48 for males and .53 for females. When the multiple correlation of IQ, grade point average, and self-concept of ability was computed, coefficients of correlation rose to .69 (males) and .72 (females). The overall conclusion was that there is a strong positive relationship between self-concept of ability and academic achievement. (A related finding was that self-concept of ability is also positively and significantly correlated with the student's perceived evaluations of him by significant others.)

Brookover, Erickson, and Joiner studied a group of subjects over a six-year period (grades seven through twelve) and found that while the self-concept of ability appears to "limit the learnings attempted, it does not account for variations within these limits" (1967, p. 12). The correlation between self-concept of ability scores and grade point averages ranged from .48 to .63 for the various students over the six-year period. When changes occurred in self-concept of ability over two-year periods, they were significantly related to parallel changes in grade point average. In other words, when the student's self-concept of ability improved, his or her academic performance showed a corresponding improvement. From their data, the authors concluded that a positive self-concept of ability is a "necessary but not sufficient" condition for academic achievement (1967, p. 142).

In a study involving 317 seniors in a rural Wisconsin high school, Jones and Strowig (1968) examined the



relationship between several measures of self-concept and academic achievement. They administered the Self-Concept of Ability Scales, the "Who Am I?" identity rating scale, and a self-expectations scale containing items which were "known to be related to scholastic achievement" (p. 78). The Henmon-Nelson Test of Mental Ability provided an indication of academic aptitude, and grade point average was based on all grades received during the fall semester of the senior year.

Correlations between self-concept of ability (SCA) scores and grade point averages (GPA) were very similar to those between measured intelligence and grade point average. The SCA - GPA correlations were .51 (boys), .67 (girls), and .58 (total). All of the variables included in the study were "positively related to achievement and to each other" (p. 78), but self-concept of ability and measured intelligence emerged as the best predictors of academic performance. There were also significant ( $p = <.001$ ) correlations between measured intelligence and self-concept of ability scores for males (.53), females (.65), and the total group (.59). The investigators concluded that the use of mental ability test scores, as well as "non-intellective" variables such as adolescent identity, self-concept, and self-expectations would lead to improved prediction of scholastic performance.

Binder, Jones, and Strowig (1970) examined the relationship between non-intellective variables and academic achievement also. Binder and Jones each selected a group of

twelfth-grade students ( $n = 346$  and  $317$ , respectively) in rural Wisconsin and administered the Expectations Inventory (subject's expectations for his or her behavior in the student role) and the Self-Concept of Ability Scale - General. Binder found correlations of  $.56$  (girls) and  $.71$  (boys) between self-concept of ability scores and grade point average. Jones' findings of  $.51$  (boys) and  $.67$  (girls) were comparable. Data for both groups revealed somewhat higher correlations between self-concept and achievement than between measured intelligence and achievement. The correlations between scores on the Henmon-Nelson Test of Mental Ability and grade point average were  $.45$  (males) and  $.53$  (females) in the Binder group and  $.50$  (males) and  $.60$  (females) in the Jones group. Once again, there was a significant relationship between measured intelligence and self-concept of ability, with the exception of the males studied by Binder. Jones' data revealed correlations of  $.53$  and  $.65$  for males and females on self-concept of ability and Henmon-Nelson scores. Binder's group had correlations of  $.14$  (males) and  $.59$  (females).

In an effort to find an effective means of predicting achievement in college, Jones and Grieneeks (1970) studied correlations between scores on the Self-Expectations Inventory, the Self-Concept of Ability Scale, the Scholastic Aptitude Test (SAT), the degree of identity development as revealed by the Who Am I? technique, and grade point average.

Data for the 877 sophomores at the University of Texas who were included in the study revealed that all of the measures were positively related to achievement, but that they were not equally effective in predicting academic performance. For example, correlations between the SAT and grade point average were .22 (males), .36 (females), and .23 (total). Comparable correlations for self-concept of ability and grade point average were .49, .48, and .43. (There were also significant correlations between the SAT and self-concept of ability scores; for the total sample, the SAT - self-concept of ability correlation was .42). Jones and Grieneeks concluded that for the developmental period of late adolescence, "self-perception appears to be the most accurate predictor of academic achievement" (p. 201).

Prendergast and Binder (1975) administered the Brookover Self-Concept of Ability Scale - General, the Tennessee Self Concept Scale, and the Rosenberg Self-Esteem Scale to 366 ninth-grade students. Their research problem concerned the relationship between self-concept and achievement in reading and mathematics, as well as the apparent construct validity of the three instruments. Correlations between self-concept and achievement scores were significant for both reading (Tennessee Self Concept Scale, .98; Self-Concept of Ability Scale, .54; and Rosenberg Self-Esteem Scale, .35) and mathematics (Tennessee, .32; SCA, .15; and Rosenberg, .57).

The findings of the Prendergast and Binder research raised several important questions. The fact that the highest self-concept and achievement correlations were obtained for the Tennessee Self Concept Scale and the Rosenberg Self-Esteem Scale (both of which are purported to be measures of global self-concept) would challenge Wylie's contention that only "specific measures are likely to correlate with specific criterion measures" (Prendergast and Binder, p. 94). Correlations between the three self-concept instruments were not significant except for that between the Self-Concept of Ability Scale and the Rosenberg Self-Esteem Scale ( $r = .38$ ,  $p = .001$ ). The differences in correlations between the instruments themselves, as well as the differences in their relationships with the achievement measures, would imply that different factors were being measured by the three instruments. Such findings reiterate the need for caution in attempting to generalize from one self-concept instrument to another.

A second broad category of self-concept research has focused on the difference in self-concept of achievers and underachievers of similar intelligence levels. The premise of such studies is that the student who achieves at a level consistent with or above that which would be expected of one of his ability will have a higher self-concept than will his lesser-achieving intellectual counterpart. In one such study, Fink (1962) compiled rather comprehensive indications of the self-concept levels of 88 freshmen at a rural California high

school. All of the subjects had intelligence levels between 90 and 110 on the California Test of Mental Maturity. They were classified as achievers if their grade point average was above the median for other ninth-graders of that IQ range. Those whose grade point averages were below the median were considered to be underachievers.

To assess self-concept levels, Fink administered the California Psychological Inventory, Bender Visual Motor Gestalt Test, Draw-a-Person Test, and Gough Adjective Check List (with lists completed by both pupil and teacher). Each student also prepared a personal data sheet and wrote a brief essay entitled "What I Will Be in 20 Years." Based on the data, three "judges" (two school psychologists and one clinical psychologist) rated the adequacy or inadequacy of each subject's self-concept. Although Fink gave the judges no definition of "adequacy" or "inadequacy," there was a high level of agreement among the judges. The data supported the idea that a relationship "does in fact exist between adequacy of self-concept and level of academic achievement" (Fink, p. 61). High-achieving students were found to have more adequate self-concepts than students who were not achieving so well as might have been expected.

Shaw and Alves (1963) studied a group of 129 (final sample = 78) high school juniors and seniors in order to test their belief that "under-achievers have more negative self-concepts than students who are equally bright but achieving"

(p. 401). All of the subjects had an IQ of 110 or above, as measured by the California Test of Mental Maturity. (The subjects were similar in intelligence levels in that they were among the top 25% of the population, but Shaw and Alves did not report the IQ range of their subjects.) Students were classified as achievers if their grade point average in all previous work was 3.0 or above and were considered under-achievers if their cumulative grade point average was 2.5 or below.

The Bills Index of Adjustment and Values was used to determine the students' self-concepts, and subjects were compared not only on the basis of their total self-concept scores, but also on their scores on each of the self-scales, including self-acceptance, ideal self, perception of peer self-concept, peer self-acceptance, and peer ideal self. When they examined the mean scores of all subjects, Shaw and Alves found that underachievers showed a "general tendency to rate themselves more negatively on all six variables," indicating a "direct association between negative self-attitudes and academic achievement, when ability levels are equal" (p. 403).

Paschal (1968) also found self-concept differences for achievers and underachievers. The Spivack Response Form was used to appraise the self-acceptance and self-rejection of the 152 subjects who ranged in age from 11 to 14 years. The students were "fairly homogeneous" in ability, with scores ranging from 250 to 300 on the School and College Ability

Test. Subjects were considered to be achievers if their academic average based on grades in English, geography, mathematics, and science was C or better for the first six-week grading period. If their average was below C, they were classified as nonachievers. Paschal found that "significantly more of those Ss classified as having adequate self-concepts were defined as achievers" (p. 394). However, when the groups were compared on the basis of individual subjects, there were no significant differences in self-concept levels for achievers and nonachievers in mathematics. Paschal concluded that "a relationship does exist between reported self-concept and teacher assigned grades" (p. 394).

Bailey (1971) also found that the self-perceptions of high achievers differed from those of low achievers. His subjects were 100 West Virginia University students, all of whom were classified as having below average ability to do college level work, based on the Henmon-Nelson Test of Mental Ability. Subjects were randomly selected from courses in effective study (underachievers enrolled in a remedial program) and from introductory psychology classes (achievers). They were matched on the basis of sex, class rank, and scores on a test of college ability.

Bailey devised a Self Scale and an Ideal Self Scale and compared high and low achievers on the Self Scale, Ideal Self, Self-Ideal Discrepancy, and Reality Discrepancy (discrepancy between self-rating and actual level of college ability).

Despite the fact that the mean scores of both achievers (46.6) and underachievers (47.3) were below the standardization group (54.6) on the Henmon-Nelson, there were marked differences in grade point averages. The mean grade point average for the high achievers was 2.25, as compared with 1.45 for the underachievers. On all parts of the self-concept inventory, there were significant differences in the mean scores of the two groups. Overall, high achievers with low college ability viewed their level of ability as significantly higher than did underachievers of comparable intelligence. They also had higher aspirations for academic achievement and had lower discrepancy scores than the underachievers did.

Using a sample of 282 students enrolled in college psychology classes, Gadzella and Fournet (1976) also reported differences in the self-perception of high achievers and low achievers. A self-rating scale containing 37 student-suggested characteristics of a quality student was administered three times during the semester. At the end of the term, course grades were added to self-rating scores. Students who had high grades (A) were considered to be high achievers, and those with low grades (C) were labeled low achievers.

The self-rating scales were broadly divided into two categories: In-Class and Out-of-Class. The Out-of-Class activities were further categorized as Study Habits and Attitudes, Student-Student Relations, Student-Instructor Relations, and Physical and Emotional Needs. On three of the five variables,



there were differences between high achievers and low achievers. High achievers' scores were significantly higher on the In-Class, Study Habits and Attitudes, and Student-Student Relations than were the low achievers' scores on the same scales.

Little information was provided about the scale which Gadzella and Fournet used, but the items were limited primarily to school-related characteristics, such as attending class regularly, being alert and attentive in class, and taking good notes. On the surface, such an inventory would seem to be a self-evaluation of one's study patterns and adherence to the stereotype of the "good student" rather than an assessment of overall self-perception. At best, the results would reflect the subjects' awareness of a very limited aspect of self-concept; they were based on the subjects' evaluations of themselves in relation to one course during one semester. Generalization of such findings would be very limited.

A third category of research studies includes those which have focused on the relationship between a student's overall self-concept and his performance in school. In one such study, Wattenberg and Clifford (1964) obtained mental ability and self-concept scores for 128 children who were enrolled in the first semester of kindergarten in two schools in Detroit. Measures of the children's progress in reading were obtained at the end of the second grade, and the self-concept assessments were also repeated at that time. Two

aspects of the self-concept (feelings of competence and feelings of worth) were evaluated through the use of tape recordings of the subjects' comments made while drawing pictures of their families and of their responses to a set of incomplete sentences (the content of which was not reported). The classroom teacher and a clinically trained interviewer rated each child on feelings of competence and worth, as well as on ego strength.

Analysis of the data revealed that the measures of self-concept and ego strength obtained in kindergarten were predictive of reading achievement 2-1/2 years later. The relationship between measured intelligence and self-concept, on the other hand, was so low as to be possibly attributable to chance. While they did not advocate abandoning the use of intelligence test scores, Wattenberg and Clifford did propose that the use of self-concept measures, particularly as related to competence and personal worth, "if taken early in kindergarten would add significantly to the predictive efficiency now attainable through tests of mental ability" (p. 466).

In their efforts to compile psychometric data on a self-concept inventory which they devised, Piers and Harris (1964) computed correlations between self-concept scores and both achievement and IQ scores for four classes of third-grade students and four classes of sixth-grade students. Standardized test scores were not available for all students, so the final sample on which the correlations were based was somewhat

reduced. The self-concept and intelligence test scores were .17 (ns) for the third grade and .25 ( $p = .01$ ) for the sixth grade. Correlations between self-concept and achievement were .19 ( $p = .05$ ) and .32 ( $p = .01$ ) for the third and sixth grades, respectively. For their sample of students, then, Piers and Harris concluded that there was a significant but low correlation between general self-concept and academic achievement.

Williams and Cole (1968) addressed the question of why some children seem to be "positively oriented toward academic pursuits while others of ostensibly comparable ability and background are negatively inclined" (p. 46). They surmised that a student's "conception of school would be related to his conception of himself and thus might be construed as an extension of his self-concept" (p. 46). The Tennessee Self Concept Scale was administered to 80 sixth-grade students, and scores were obtained for each subject on the California Test of Personality, California Test of Mental Maturity, and the reading and mathematics sections of the California Achievement Test.

All of the correlations between achievement, personality, and self-concept measures were statistically significant. The correlations between scores on the Tennessee Self Concept Scale and achievement in reading (.31) and mathematics (.33) were significant at the .01 level of confidence. In contrast to many other studies, the Williams and Cole project revealed

a significant correlation ( $\underline{r} = .31$ ,  $\underline{p} = <.01$ ) between self-concept and measured intelligence. The authors found that a number of variables are related to academic success, and they stressed that while mental ability is important, self-esteem "may prove to be another major determinant" of achievement in school (p. 480).

Morris Caplin (1969) administered a 50-item self-description inventory to 180 intermediate grade children in a small town in New Jersey. Of the items, 60% concerned students' feelings about themselves, and 40% related to their feelings about school. Correlations were computed between scores on the self-concept instrument and the standard composite score on the Iowa Test of Basic Skills ( $\underline{r} = .52$ ,  $\underline{p} = .001$ ). The Iowa Test of Basic Skills total score was also significantly correlated ( $\underline{p} = .001$ ) with both the personal/social qualities ( $\underline{r} = .45$ ) and the school-related items ( $\underline{r} = .58$ ) on the self-concept inventory. Caplin concluded that school-related items "are more intimately related to academic achievement than are the generalized personal/social feelings about the self" (p. 15).

In a study involving 468 incoming freshmen (268 men and 200 women) at the State University of New York at Buffalo, Catherine Kubiniec (1970) found that self-concept measures can be useful in predicting academic success in college. She administered a self-concept inventory (the Semantic Differential Scales) which was composed of seven concepts,

including My Past, My Future, My Real Self, My Ideal Self, Studying, Learning, and College Degree. The first four concepts refer to the "Phenomenal Self domain," and the others relate to the student's perception of the academic situation (the "Phenomenal Environment domain").

Using relative academic achievement (predicted grade point average - actual grade point average) and remaining in college for at least three consecutive semesters as performance criteria, Kubiniec divided her subjects into four groups, including high achievers, moderate achievers, low achievers, and drop-outs. The Phenomenal Self variables successfully differentiated between the various groups of male students ( $p = .05$ ), but they did not differentiate the female achievement groups. The overall results, however, did support the "predictive value of self-theory which maintains that an individual's behavior is affected by his perceptions of himself and his environment" (Kubiniec, p. 333). Kubiniec further suggested that the prediction of academic achievement in college might be improved by the use of global perceptions of self, as well as perceptions of one's environment.

Alvord and Glass (1974) also found significant and positive correlations between self-concept scores and achievement, but their findings were limited to achievement only on the science achievement test of the National Assessment of Educational Progress (NAEP). The subjects were 1105 fourth-graders, 1099 seventh-graders, and 958 twelfth-graders who were selected

at random from 83 school districts in Iowa. Using the intermediate and secondary levels of the Self-Appraisal Inventory, Alvord and Glass derived not only indications of global self-concept, but also obtained scores on four subscales (general, family, peer group, and scholastic).

At all three grade levels, total self-concept scores were positively and significantly related to science achievement scores. Correlations were .28, .18, and .16 for grades four, seven, and twelve, respectively; all were significant at the .01 level of confidence. There were variations in the correlations between different subscales and science achievement, but the relationship between the scholastic subscale and science achievement was significant at all three grade levels. The correlations of .32, .33, and .38 for grades four, seven, and twelve indicate that the academic self-concept has much potential for predicting science achievement, especially for older students.

Even though the Alvord and Glass study was limited to the relationship between self-concept and achievement in only one subject area, the research design would seem to lend additional weight to their findings. The use of more than three thousand students selected at random from the total population of three grades in an entire state would give a much wider sampling than most studies have. Also, the use of scores on a standardized achievement test would provide comparable scores for all subjects; it would also remove the possible

bias of of teacher-assigned grades. Further, the study examined the relationship of self-concept and achievement at the elementary, junior high and senior high school levels, thereby permitting additional generalization of research findings.

Further evidence of the relationship between self-esteem and academic achievement was provided by Primavera, Simon, and Primavera (1974). They administered the Coopersmith Self-Esteem Inventory to 180 students in the fifth and sixth grades in a Catholic school in a middle class neighborhood. Self-concept scores were correlated with scores on the reading and mathematics tests for the New York State elementary schools and on comparable subtests of the Stanford Achievement Test.

Primavera et al. used only the total self-concept score without attempting to correlate subscale scores with the various achievement measures. The correlations between self-concept and arithmetic computation on the Stanford Achievement Test (.15) and between self-concept and the New York State Reading Test (.19) were significant at the .05 level of confidence. All other correlations were significant at or beyond the .01 level and ranged from .23 to .39 for the various subtests. The data revealed a much weaker relationship between self-concept and achievement for males, but the results for the total group indicated a positive relationship between self-concept and achievement. Again, the use of standardized

test scores would remove some of the subjective influence of teacher-assigned grades.

In a similar study, Simon and Simon (1975) examined the self-concept and achievement scores of 87 fifth-grade students in a New York City suburb. They found a correlation of .33 ( $p < .01$ ) between scores on the Coopersmith Self-Esteem Inventory and scores on the SPA Achievement Series. Furthermore, when they examined the relationship between self-concept and measured intelligence, Simon and Simon also found positive and significant correlations. Using the Lorge-Thorndike Intelligence Test, they obtained correlations of .30 ( $p < .01$ ) and .23 ( $p < .05$ ) between self-concept scores and the verbal and quantitative dimensions of IQ.

Rubin, Dorle, and Sandidge (1977) also examined the relationship between self-concept and academic achievement and between self-concept and intelligence test scores. Using a sample of 530 twelve-year-olds, Rubin et al. obtained a correlation of .31 ( $p < .01$ ) between Coopersmith Self-Esteem Inventory scores and Wechsler Intelligence Test scores. Self-Esteem Inventory scores were also significantly related to the Word Meaning (.31) and Arithmetic (.29) subscales of the Stanford Achievement Test and to the Word Recognition (.22), Spelling (.23), and Arithmetic (.26) subscales of the Wide Range Achievement Test. All of the SEI - achievement test correlations were significant at or beyond the .01 level. Rubin et al. also found significant correlations ( $p < .01$ ) between SEI scores and teacher ratings on reading (.32), spelling (.24), and



arithmetic (.34). From their research, however, the authors concluded that "IQ was the best single predictor of academic achievement" (Rubin et al., 1977, p. 506).

Challenging Jensen's (1973, p. 266) charge that self-concept scores have not been proved to be related to IQ or academic achievement or to be anything more than the subject's "more or less objective appraisal of his own scholastic standings and aptitudes," Stenner and Katzenmeyer (1976) also employed standardized measures of achievement. They administered the Scholastic Testing Service Educational Development Series (Non-verbal Ability, Verbal Ability, Reading, English, Mathematics, Science, and U.S.A.) and the Self-Observation Scales, which provide seven subscale scores related to the subject's attitudes toward himself, his family and peers, and school. The sample studied included 225 Caucasian students enrolled in the sixth grade in a rural West Virginia school.

Stenner and Katzenmeyer found significant correlations between self-concept scores and the various measures of achievement. However, the Self-Observation scores were correlated to a greater extent with the achievement areas than with nonverbal IQ. Stenner and Katzenmeyer maintained that verbal IQ is so "achievement saturated as to be better considered an achievement test than an ability test" (p. 272). The fact that the Self-Observation Scales were more significantly related to the achievement areas than to nonverbal IQ supported the authors' opinion that self-concept and mental ability

(i.e., nonverbal IQ) are conceptually independent constructs. Therefore, Stenner and Katzenmeyer concluded that the use of both self-concept scores and nonverbal IQ scores could be very useful in predicting academic achievement.

Most of the studies considered thus far have generally confirmed the positive relationship between self-concept and academic achievement. Although they are presently in the minority, some researchers have found that the relationship between self-concept and achievement may actually be negative. For example, Marx and Winne (1975) studied the self-concepts of 38 fifth-grade students and 60 sixth-grade students in a predominantly black school serving students of generally lower socioeconomic levels and found a negative relationship between self-concept and academic achievement. The verbal and quantitative sections of the Stanford Achievement Test and the Sears Self-Concept Inventory were administered. An academic self-concept score was derived for each student.

In accord with the studies cited earlier, Marx and Winne did find that the academic self-concept was positively related to verbal and quantitative achievement. However, they found low but statistically significant negative correlations between social self-concept and both verbal achievement (-.23) and quantitative achievement (-.36). According to Marx and Winne, the data suggested that children who are "visibly successful at school . . . may be rejected by their peers, resulting in low social self-concept." Furthermore, it is

possible that those who are "regarded highly by their peers may reject success in school as a means of enhancing their self-esteem, whereas children who are rejected socially may try to enhance self-esteem through high academic achievement" (Marx and Winne, p. 31).

In a very restricted study, Boshier and Hamid (1968) attempted to differentiate between superior, average, and failing students. Six weeks before the course final examination was given, the Bills Index of Adjustment and Values (IAV) was administered to 55 students who were enrolled in undergraduate psychology classes. Correlation coefficients were computed for self-concept scores and final examination grades, but there were no significant effects which were attributable to different achievement levels. The correlation of .31 ( $p = .05$ ) between academic success and the self-acceptance score of the IAV was considered suspect by Boshier and Hamid because of a large error of estimate. The findings of this study would seem to have little, if any generalization value, however. The study was conducted in New Zealand with a relatively small sample. There was no control for intelligence levels, and the one measure of academic achievement, a student's grade on one final examination, would provide little justification for categorizing him as a superior, average, or failing student.

Iglinsky and Wiant (1971) also challenged the existence of a positive relationship between self-concept and academic

achievement. They administered the Interpersonal Orientation Scale (a measure of general orientation and "preference for altruistic or manipulative relatedness") and the Tennessee Self Concept Scale to 150 college students. Subjects were grouped into three categories which would be roughly related to achievement: (1) those who were not placed on probation during the freshman year, (2) those who were placed on probation at the end of the first semester, and (3) those who were placed on probation after the first semester and were suspended after the second semester. When they compared the self-concept scores of the three groups, Iglinsky and Wiant found that neither a subject's score on the Tennessee Self Concept Scale nor his general orientation (altruism vs. manipulation) was related to his academic achievement.

In an effort to discern the relationship between self-concept and reading achievement, J.H. Williams (1973) administered a modified, oral form of the Coopersmith Self-Esteem Inventory to 133 first-graders. Reading readiness scores (Metropolitan Readiness Tests) and IQ scores (Kuhlmann-Anderson, K booklet) were administered to the subjects at the end of kindergarten, and the California Achievement Test was used to evaluate reading achievement at the end of the first and second grades. Analysis of the data revealed that there was "essentially no relationship between the children's self-concepts and their first and second grade reading achievement" (p. 379).

It is possible, according to Williams, that the subjects had not yet internalized reading as a value at the time of their taking the self-concept inventory or that teachers had communicated to each child that his "reading experience was appropriate for his level of readiness and ability" (p. 379). Also, the family and peer influences on the child would seem to carry more weight in the child's self-concept at that age than would his or her rather limited exposure to reading achievement. Perhaps a more important point would be that only three of the 26 items on the inventory related to school. A larger ratio of school-related items might, as Williams suggested, have shown a stronger relationship to reading achievement.

In a study involving 48 gifted students in the seventh and eighth grades in Phoenix, Arizona, Dean (1977) found that the relationship between grade point average and scores on the Coopersmith Self-Esteem Inventory were not significant. The mean self-esteem scores of the gifted students did not differ significantly from the average students studied by Coopersmith in the standardization sample for the SEI. Dean concluded that the absence of a significant GPA - SEI relationship was probably "an artifact of the homogeneity of the sample" which he used (p. 316). The correlations between SEI scores and intelligence test scores were not statistically significant either.

Sex, Race, Socioeconomic, and Age Differences  
in Self-Concept

The primary concern of the studies included in this review of the literature has been the relationship between the self-concept and academic achievement, and the findings have been reported so as to confirm or, in some cases, to refute that relationship. Many of the authors have found differences in self-concept scores, however, depending upon the sex, race, socioeconomic status, and/or age of their subjects. Although such findings may be reported only incidentally, they could have important implications within educational settings. Much has been written about the possible effects of these variables, and it seems worthwhile to examine the related research findings.

Sex differences. Insofar as sex differences in self-concept are concerned, the results reported are mixed. In a study of 823 students in grades seven through nine, Wylie (1963) found that her female subjects made much more modest appraisals of their academic ability than did the males, even though both sexes were comparable in IQ and the girls actually had better grades. Similarly, Marx and Winne (1975) reported that the social self-concept scores of their fifth- and sixth-grade females were significantly lower than were those of their male classmates, in spite of the girls' higher (though not statistically significant) verbal and quantitative

achievement scores. Carpenter and Busse (1969) also found that first- and fifth-grade girls were more negative in self-concept than boys were.

Shaw and Alves (1963) reported sex differences in self-concept among underachievers in the eleventh and twelfth grades, but the dissimilarities followed a different trend. Male underachievers were generally less self-accepting than were male achievers, but female underachievers did not differ from female achievers on any of the self scales on the Bill's Index of Adjustment and Values. Female underachievers, by comparison, were more negative than female achievers, not only in the perceptions they believed others had of them, but also in their perception of the degree of self-acceptance which others have.

In a study involving sixth- and twelfth-grade students, Whiteside (1976) found that females had more favorable perceptions of themselves than did males. Brookover, Paterson, and Thomas (1962) also found that mean scores on the Self-Concept of Ability Scales were higher for seventh-grade girls than for boys. Reporting on an investigation of the scholastic self-concept, Harris (1971) stated that seventh-grade females were "more certain, more positive, and more accurate" in their self-perceptions than males were. Scores of eleventh-grade students showed a reverse trend, with males being more certain, positive, and accurate (Harris, p. 275).

Caplin (1969), Chang (1976), Olsen and Carter (1974), Paschal (1968), Piers and Harris (1964), Primavera, Simon and Primavera (1974), Simon and Simon (1975), and Soares and Soares (1969) reported that there were no significant differences in the mean self-concept scores of males and females, however. After an extensive review of research on sex differences, Maccoby and Jacklin (1974) concluded that while sex differences in self-concept may be reported for a particular sample, there is no consistent support for the position that males and females differ in self-concept. Further, they found that "the similarity of the two sexes is remarkably uniform across age levels through college age". (p. 153)

Race differences. The literature also contains conflicting reports regarding race differences in self-concept. Wylie (1963) found that the blacks in her junior high school sample held lower opinions of themselves and of their academic ability than did whites. Caplin (1969) also reported race differences in a sample of children in the elementary grades, with Negroes having self-concept scores which were lower at the .05 level of confidence. However, he felt that at least some of the variance might be attributed to the blacks who were attending a de facto segregated school. (Both blacks and whites in the de facto schools he studied had lower self-concepts than those who were attending integrated schools.)



Jensen (1973) stated that research has not proved that the self-concept of Negroes is lower than that of whites. Taking an opposing view, Stenner and Katzenmeyer (1976) maintained that studies involving the Self-Observation Scales have shown that white children have higher scores than do blacks on specific subscales. However, they also reported high correlations between their subjects' self-concept and verbal IQ scores. Because blacks generally score lower on standardized measures of mental ability, it is possible that the differences were attributable to factors other than self-concept.

Despite the existence of data which indicate that blacks have lower self-concepts than whites do, there is an apparently increasing amount of evidence to suggest that the self-concept scores of blacks are higher than those of whites. In a study involving more than 3500 students in grades three through eight, Trowbridge, Trowbridge, and Trowbridge (1972) found that mean scores on the Coopersmith Self-Esteem Inventory were higher for Negro children (73.6) than for children of other races (69.9). Although the authors attributed the main variance to socioeconomic differences, the race findings were nevertheless significant at the .05 level.

In a less extensive study of tenth-grade students, Powers, Drane, Close, Noonan, Wines, and Marshall (1971) also found race differences, with blacks (21.86) having higher mean self-concept scores than either Jewish (18.02) or non-Jewish (16.31)

white subjects. Using the Coopersmith Self-Esteem Inventory in a study involving 120 students in the fifth and sixth grades, Zirkel and Moses (1971) also found that Negro children had higher self-concept scores than whites did, but the differences were not statistically significant. Zirkel and Moses interpreted their findings as giving support to the "growing number of studies which indicate that the self-concept of Negro children does not differ significantly from and may be higher than that of white children" (p. 260).

Carpenter and Busse (1969) reported that there were no significant race differences in self-concept among their fifth- and sixth-grade subjects, all of whom were from father-absent families which were receiving welfare assistance. Further, Carpenter and Busse found that the tendency to become more negative in self-concept from the first to the fifth grade characterized only the whites. Cicirelli (1977) also reported that there were no self-concept differences between non-welfare blacks and whites. Studying a somewhat different segment of the population, Calhoun, Kurfiss, and Warren (1976) administered a self-concept and self-esteem inventory to 30 Boy Scouts who were matched on the basis of age, grade-level, and socioeconomic status. All of the subjects were performing at or beyond grade level. The results revealed no significant differences in mean self-concept scores between blacks (149.4) and whites (147.2). By using matched groups, the experimenters eliminated the possibility of contaminating

race variables with differences which might be attributable to another factor such as socioeconomic level.

In a review of research on race differences in self-concept, Zirkel (1971) reported that the findings are mixed. He stated that some of the confusion may be caused by the difficulties involved in self-concept measurement, such as response patterns and a tendency to make socially desirable responses. He also mentioned that the race of the examiner can influence results. Black militancy and black pride have also probably had an effect. At this point, however, research on race differences is inconclusive, to say the least.

Socioeconomic differences. Another area of self-concept research which has received much attention but produced inconsistent findings is that concerning socioeconomic status. Brookover, Paterson, and Thomas (1962) found a positive relationship between family socioeconomic status and seventh-grade students' self-concept of ability scores; students from the lower classes generally had lower self-concept scores. Wylie (1963) also found that lower socioeconomic children were more likely to underestimate their level of ability and were less likely to want to attend college than were their more privileged classmates.

Paschal (1968) found no socioeconomic differences in self-concept, but several studies have shown that those of lower status may actually have higher self-concepts than those who are more affluent. Soares and Soares (1969) addressed the

socioeconomic status and self-concept relationship directly in their study of 514 children in grades four through eight. Subjects who were classified as disadvantaged typically lived in low-rent or subsidized housing and had a family income of \$4,000 or less. Many were receiving welfare payments. Of the disadvantaged students, 2/3 were Negro or Puerto Rican; 1/3 were white. The children who were not considered disadvantaged generally lived in one-family residences which their parents owned or were buying, had at least one adult family member steadily employed, and had a family income of \$7,000 or more. Of the advantaged subjects, 90% were white and 10% were of minority races.

The total sample, including both disadvantaged and advantaged, had generally positive self-perceptions which were "neither overly high nor unduly low" (Soares & Soares, 1969, p. 43). Yet, when they compared the self-concept scores of the two groups, Soares and Soares found that the disadvantaged had higher self-perceptions than did the advantaged. One possible explanation offered by the authors was that the subjects were attending neighborhood schools. The disadvantaged were associating only with other students of similar status and were probably functioning according to their teachers' and parents' expectations. On the other hand, the advantaged, coming into contact primarily with other advantaged children, would probably be expected to perform at higher levels. Experiencing

more pressure from both parents and teachers, the advantaged child might feel less satisfied with himself and would consequently have a lower self-concept.

A similar explanation and similar results were offered by Trowbridge, Trowbridge, and Trowbridge (1972). Comparing mean scores on the Coopersmith Self-Esteem Inventory, they found that children of low socioeconomic status ( $\underline{M} = 74.1$ ) had significantly higher scores than did middle class children ( $\underline{M} = 68.4$ ). The findings further suggested that lower socioeconomic children feel more sure of themselves, are reasonably happy, and generally feel that they are worthwhile persons; they also expect less of themselves in school. Middle class children, by contrast, tend to internalize school difficulties as being their own fault. Having been taught by their parents that school is important, the middle class children's self-concept may suffer if they do not perceive school in that way.

In an effort to assess the effectiveness of IMPACT programs to humanize education, teachers in 64 elementary classrooms in Iowa administered the Coopersmith Self-Esteem Inventory to their students. When Trowbridge (1970) compared the scores of the various groups, she found that those students in classrooms which were classified as disadvantaged ( $\underline{M} = 72.2$ ) had significantly higher self-concept scores than did the advantaged students ( $\underline{M} = 72.7$ ).

Cicirelli (1977) also found socioeconomic differences in a group of primary grade students. Of the 345 inner-city subjects, 40% were from families who were receiving welfare assistance. When mean self-concept scores of welfare children (.27.31) were compared with those of non-welfare children (111.03), there was a significant difference ( $p = <.01$ ). Cicirelli attributed the differences not only to lower parental expectations, but also to defensiveness in the testing situation. It is possible that the subject might believe that his or her status is inferior, but be unable or unwilling to admit it.

Age differences. A fourth variable in self-concept research which has been less systematically studied than sex, race, or socioeconomic status is that of age. Even though textbooks on adolescent psychology stress the turbulence of adolescence and the influence of physical and social changes on the individual's self-concept, there appear to have been no large scale efforts to assess empirically the effects of those changes. There have been comparatively few developmental studies on self-concept, and the studies which are available have focused on diverse samples of various ages. The result is that few conclusions can be drawn about age differences in self-concept.

In 1964, Piers and Harris administered a self-concept scale to students in the third, sixth, and tenth grades; the subjects represented a cross section of ability and

socioeconomic levels. Piers and Harris found that the mean self-concept scores for those students in the third and tenth grades did not differ significantly. However, students in both the third and the tenth grades were significantly different from those in the sixth grade at the .01 level. Piers and Harris also found that the correlations between self-concept and both IQ and achievement were significantly higher ( $p = .01$ ) for sixth-graders than for third-graders.

In a study of 600 students in grades three through eleven, Morse (1964) found that the students with the highest levels of self-concept, as measured by the Coopersmith Self-Esteem Inventory and the Osgood Semantic Differential, were the third-graders. The data revealed a sharp decrease in self-concept in the third through the fifth grades with "some recovery" in the eleventh grade. The school self, according to Morse, appeared to "grow gradually less positive with time." His implication was that the change might not be due to developmental changes within the individual but to school personnel's communication of "a sense of personal failure to many of our students" (p. 198).

Olsen and Carter (1974) administered the Self-Concept of Ability Scales to 184 disadvantaged rural and urban children who were in grades four, five, and six and found that all of the subjects perceived themselves as having high average academic ability. Yet, when the scores were compared by grade level, differences emerged. The fourth- and fifth-grade

students' mean scores were very similar (30.1 and 30.3, respectively), but they differed significantly from the mean for sixth-grade students (28.4). Kokenes (1974) also found that sixth-graders were more self-rejecting, according to their scores on the Coopersmith Self-Esteem Inventory, than were other students in grades four through eight. Eighth-grade students, by comparison, were more likely to indicate negative feelings toward home and parents.

While Alvord and Glass (1974) were primarily interested in the overall relationship between self-concept and academic achievement, they also found variations in that relationship at the different grade levels. The correlations between science achievement and the Self-Appraisal Inventory total scores, as well as the general, family, and peer subscale scores, showed a decrease from the fourth to the seventh and from the seventh to the twelfth grade. The reverse trend appeared on the scholastic subscale, however, with correlations increasing from .32 (fourth grade) to .33 (seventh grade) and .38 (twelfth grade).

Whiteside (1976) found that when she compared the Tennessee Self Concept scores of 120 sixth-graders and 128 twelfth-graders, there was a difference on the Family Self subscore, with the sixth-grade students having significantly higher scores. However, there were specific sex differences for the two age levels which might have accounted for some of the overall differences. For example, the younger girls had



significantly higher Family Self scores than did the twelfth-grade girls, but there were no significant differences for males in the sixth and twelfth grades.

Working only with primary grade children, Cicirelli (1977) examined scores on the Purdue Self-Concept Scale and found a decrease in self-concept which corresponded to an increase in grade level, from the first to the third grade. Cicirelli proposed that the decline in self-concept over the first three years in school might be the result of the "concomitant development of the cognitive abilities required to make accurate evaluations of the self in relation to others" (p. 215).

In contrast to the authors cited thus far, Jersild (1952) maintained that there are no significant age differences in self-perception. He studied the self-descriptions of 1000 elementary school children, 1600 junior and senior high school students, and 200 college students and found that "a certain psychological content appeared at all grade levels." Most of the categories of self-description which were "prominent for any one age level" were also "prominent at all other levels" (Jersild, 1952, p. 30). Using the Coopersmith Self-Esteem Inventory, Trowbridge (1970) also found that there were no significant differences in the self-concept scores of students in the upper elementary and lower elementary grades. Likewise, Nelson (1971) found no significant age differences when he administered the Piers-Harris Children's Self-Concept

Scale and the Coopersmith Self-Esteem Inventory to 298 children in the fourth, fifth, and sixth grades.

Kokenes (1974) also analyzed the Coopersmith Self-Esteem Inventory scores of 7600 students in grades four through eight. Her northern Illinois sample covered a wide socioeconomic range and was ethnically mixed in a proportion comparable to that of the population of the United States. From her data, Kokenes (p. 958) concluded that there was "little factorial difference in expressed self-esteem from grade level to grade level." The findings of Jersild, Trowbridge, Nelson, and Kokenes would seem to challenge the findings of other writers who have maintained that there are age differences in general self-concept. The question remains to be answered by longitudinal and developmental studies.

## CHAPTER III

## METHOD

Subjects

The subjects involved in this study attend the public schools in a Piedmont North Carolina city with a population of approximately 40,000. A variety of industries is represented in the area, including plants producing foundry products, packaging materials, hosiery, and foodstuffs, and there is a large Western Electric plant in the city. However, many of the technical and professional employees involved in government projects have been transferred to other areas and have either moved or are commuting to nearby cities. The area is heavily dependent on the production of yarn and textile products, and a large segment of the adult population is employed at some level within the textile industry.

The total population of the city covers a broad range of educational, economic, and occupational levels. There is a relatively high number of professionals--physicians, lawyers, ministers, professional engineers, and educators--and people who are either owners of businesses or are employed in supervisory or managerial positions in local industries. However, many area residents are employed as industrial workers and would be considered either lower-middle or upper-lower class. Some are at or below the poverty level.

The racial composition of the school population is approximately 80% white and 20% black. A very small number of Vietnamese families have settled in the city, but there is comparatively little ethnic diversity. Most of the subjects and their parents are lifelong residents of the city, but the number of transfers into and out of the area is rapidly changing the population mix.

The elementary schools feed into two middle schools and two high schools which are located at opposite sides of the city. All ninth-grade students attend the one junior high school, which is centrally located. Because of the geographical locations of the middle and senior high schools, there are some differences in the student composition of the schools. In one area, there is a disproportionately high percentage of students who live in government-subsidized housing or whose parents are employed at lower industrial levels. The area served by the other middle school and high school includes more students whose parents hold professional or managerial positions.

In order that the self-concept levels of a cross section of the seventh-, ninth-, and eleventh-grade populations of the city school system might be assessed, a sample of students in each of the middle schools and high schools, as well as a larger sample from the junior high school was included in the study. Permission to administer the self-concept instruments was secured through central office personnel and principals,

with the understanding that the loss of instructional time and the interruption of regular routine would be kept to a minimum. Random sampling was not possible because of scheduling difficulties, but an effort was made to work through classes which were heterogeneously grouped and which included a cross section of the population of each of the grade levels being studied. All inventories were administered in a regular classroom setting by the counselor assigned to each of the schools. (The students were expected to respond better to the testing situation if the instruments were administered by someone who was familiar to them.)

Ideally, it would have been desirable to select just one course (such as physical education) which all students are required to take in each of the grade levels involved and to select students at random from those classes. Such a procedure was not possible, however, because each of the five schools has somewhat different course offerings and scheduling procedures. Also, because teacher attitudes can influence both student attitudes and inventory results, it was necessary to work with those teachers who were known to be cooperative and whose students could be expected to respond favorably to the assessment situation. Therefore, the inventories were administered to students in science classes in one middle school and in occupational education courses in the other. (All students are required to take these courses.) Subjects were drawn from typing classes at the junior

high school and from social studies classes (world studies and psychology) in the two high schools. The selection of these courses stemmed from an effort to secure a sample which would be representative of the student population in terms of sex, race, and socioeconomic and ability levels.

As Table 1 indicates, the sample included all race, sex, and socioeconomic levels, and the grade levels were fairly evenly represented. The proportion of white (82.6%) to black (17.4%) in the research sample was larger, however, than that of the larger school population. Also, in the seventh grade sample, blacks were over-represented (26.3%), while they were under-represented in the ninth- (12.6%) and eleventh- (12.7%) grade samples. The socioeconomic distribution reveals that the majority of the subjects were classified as being in the middle or lower-middle class. The mean social class level of 3.19 (SD 1.17) is probably typical of the larger community. (The social class ratings were based on Hollingshead's Two-Factor Index of Social Position, which allows for consideration of both the occupation and the attained educational level of the head of the household.)

Mean IQ scores on the verbal (102.49, SD 15.28), quantitative (103.05, SD, 16.26), and nonverbal (103.44, SD, 15.37) sections of the Cognitive Abilities Test reveal that the sample was similar in intelligence to the population as a whole. When scores on the verbal section of the Cognitive

Table 1

Number of Subjects by Race, Sex, Grade Level,  
and Socioeconomic Status

Grade Class	Social	White			Black			Total Sample
		Male	Female	Total	Male	Female	Total	
7	I	4	3	7				7
	II	8	6	14				14
	III	11	15	26	2	2	4	30
	IV	22	17	39	9	5	14	53
	V	4	4	8	4	12	16	24
	Missing Data		1		1			
Grade Total		50	45	95	15	19	34	129
9	I	10	6	16				16
	II	9	3	12				12
	III	16	17	33	1	4	5	38
	IV	11	23	34	2	2	4	38
	V	8	8			6	6	14
	Missing Data		1		1			
Grade Total		47	57	104	3	12	15	119
11	I	9	12	21				21
	II	7	14	21				21
	III	19	31	50		3	3	53
	IV	3	12	15		8	8	23
	V	2	1	3	5		5	8
	Grade Total		40	70	110	5	11	16
Total Sample		137	172	309	23	42	65	374

Abilities Test were grouped into ability categories, the distribution approximated the normal curve. (See Table 2.)

In the results section of this study, the reader will observe that the number of subjects varied somewhat in the different tabular presentations. Because of the multivariate nature of the study and the use of data from school records, it was not feasible to eliminate all students who had any item of information missing. The transfer of students from one school system to another (each of which has its own battery of standardized tests), student absenteeism during testing, difficulty in scheduling make-up testing, and the time intervals between the administrations of standardized tests perennially affect the completeness of school records. For the Cognitive Abilities Test, for example, scores were available for only 338 of the subjects, and complete Metropolitan Achievement Test battery scores were available for only 318 of the subjects.

Also, the format of the Piers-Harris Children's Self Concept Scale is such that the student's name is placed inside the front cover of the inventory booklet. Seven students failed to put their names on the Piers-Harris, and six of the Coopersmith Self-Esteem Inventories were either unscorable or unidentifiable. Three of the Self-Concept of Ability Scales were unsigned. Of the 374 students who participated in the self-concept survey, 373 had at least two complete sets of



Table 2  
Distribution of Subjects by IQ Categories

Classification	IQ Range	Number
Very high	128+	22
Above average	112-127	67
Average	88-111	193
Below average	72-87	52
Very low	71 and below	4
Missing data		36

Note. The classification categories are the same as those used in the Examiner's Manual: Cognitive Abilities Test, Multi-Level Edition (Thorndike & Hagen, 1971, p. 48).

self-concept data, and the remaining student had one complete self-concept scale, as well as other test data.

### Instruments

Three self-concept inventories were used in this study. The Piers-Harris Children's Self Concept Scale (The Way I Feel About Myself), the Brookover Self-Concept of Ability - General, and the Coopersmith Self-Esteem Inventory (SEI) were administered to each of the subjects. Data obtained from the self-concept instruments were correlated with students' scores on the Cognitive Abilities Test and the Metropolitan Achievement Test, which are administered as a part of the system-wide testing program. Eleventh-grade subjects' self-concept scores were also correlated with their scores on the reading and language sections of the California Achievement Test.

Because the focus of this study was on the relationship between self-concept and academic achievement, it seemed important that results not reflect just one set of responses but provide an overview of students' feeling about themselves. Both the Piers-Harris and the Coopersmith yield total scores which allegedly reflect the subject's global self-concept, or overall level of self-esteem, but they also include several subscales as well. The Intellectual and School Status subscale of the Piers-Harris and the School-Academic subscale of the Coopersmith SEI were of particular interest to this study. Like the Brookover Self-Concept of Ability Scale, these

subscales would seem to be related to one specific aspect of self-concept, the student's evaluation of himself or herself as a student.

The Self-Concept of Ability (SCA) was devised by W. B. Brookover and his associates in order to assess the relationship between students' beliefs about their academic abilities and their actual scholastic performance. The original instrument, consisting of 16 multiple choice questions, had a reliability of .82 for males and .77 for females (Brookover, Paterson, & Thomas, 1962), and it has been shown to be positively and significantly related to grade point average. The instrument used in this study, the Self-Concept of Ability Scale, Form A - General, is an eight-item multiple choice questionnaire. (See Appendix.) The subject circles the letter preceding the response which represents his or her evaluation of scholastic ability in comparison with that of his or her classmates. The inventory can be administered in 10 minutes or less and yields a self-concept of ability score ranging from a minimum score of eight to a maximum score of 40. Although Self-Concept of Ability Scales are available for four subject areas (English, mathematics, science, and social studies), the specific subject scales were not used in this study. According to Dr. Wilbur B. Brookover (personal correspondence, September 23, 1977), they do not add any significant information beyond that provided by the general scale.

Scores on the SCA have repeatedly been shown to be related to academic achievement (cf. Chapter II). The scale is particularly useful within the school setting in that the reading level accommodates a wide age and ability range, and it is economical because it can be readily duplicated. It is both quick and simple to administer. Also, it is related specifically to the academic self-concept rather than to global self-concept, which makes it particularly pertinent to this study.

The Piers-Harris Children's Self Concept Scale also has the advantage of being usable with subjects of any age who have at least a third-grade reading level. The 80-item inventory contains simple declarative statements to which the subject responds by circling "yes" or "no." (See Appendix.) Inventory items were taken from Jersild's (1952) compilation of children's descriptions of things they liked and disliked about themselves. By defining the universe from which the items were drawn, the authors attempted to build in content validity (Piers, 1969, p. 5). Designed primarily as a research instrument, the Piers-Harris was standardized on a cross section of third-, sixth-, and tenth-grade students, and it has been subjected to item analysis. The reliability of the instrument, according to the manual, has been found to be within the range from .78 to .93, using the Kuder-Richardson formula; the Spearman-Brown odd-even formula has yielded reliability coefficients of .90 and .87 with sixth- and tenth-grade

students. When half of the subjects in the standardization sample were retested with the original 140-item inventory four months after the first testing, coefficients of .72, .71, and .72 were obtained (Piers, 1969, p. 4). The present 80-item inventory, when re-administered to 244 fifth-graders after two months and again after four months, showed a stability coefficient of .77 for each time period. The Piers-Harris, according to the authors, is "judged to have good internal consistency and adequate temporal stability" (Piers, 1969, p. 5). Of the self-concept instruments studied by Wylie (1974), the Piers-Harris appears to be one of the most psychometrically sound. It has also been used in numerous research studies.

The Piers-Harris not only yields a total self-concept score, but it also provides scores on the following subscales: Behavior, Intellectual and School Status, Physical Appearance and Attributes, Anxiety, Popularity, and Happiness and Satisfaction. At this point, most of the research has involved only the total scores; little information is available about the specific subscales or about their correlation with other variables. The absence of research data may well be a result of the difficulties involved in scoring. Obtaining scores for the subscales by means of the present key is both tedious and time-consuming. Furthermore, the test cannot be

duplicated. It must be purchased in booklet form, and the cost of testing large numbers of subjects could be prohibitive.

The Coopersmith Self-Esteem Inventory (SEI), Form A, was also administered to the subjects in this study. It too has the advantage of being easy to administer and is also usable with subjects from age eight through adulthood. The inventory, which "measures evaluative attitudes towards the self in social, academic, family, and personal areas of experience," is a 58-item scale. Although the inventory is labeled a "self-esteem" inventory, the structure and content of the instrument are very similar to "self-concept" instruments. Eight of the items comprise a lie scale which is designed to "assess extremely socialized response sets" (Coopersmith, 1975, p. 1). Subjects respond to each of the items by checking either "like me" or "unlike me." Coopersmith derived the original pool of inventory items from the 1954 research of Rogers and Dymond and from his own research. Five psychologists rated the inventory items as indicative of high or low self-esteem. When SEI scores were compared with teachers' ratings of self-esteem behavior, a correlation of .44 was obtained (Coopersmith, 1975).

The test-retest reliability of the original 50-item scale was found to be .88 after five weeks and .70 after three years (Coopersmith, 1975, p. 2). A shorter, 25-item inventory is available, but it does not provide subscale scores. The longer inventory contains five subscales, including General Self,

Social Self, Home-Parents, and School-Academic, as well as a lie scale. The inventory also yields a total self-concept score. As is true of the Piers-Harris, there has been comparatively little research on the subscales; most studies have involved only SEI total scores. The dearth of studies on the SEI subscales is probably related to the large amounts of time and patience which are required to score them.

The SEI has been found to be significantly correlated with other self-concept assessments (e.g., Rosenberg, .59; Bill's Index of Adjustment and Values, .46). While such evidence may be interpreted as proof of convergent validity, it should not be taken at face value. The construct validity of the other instruments may well be questioned also. Nevertheless, the SEI appears to have been rather carefully researched. Unlike some inventories which have been used only once or twice and then discarded, the SEI was administered to more than 40,000 children and adults between 1969 and 1974 (Coopersmith, 1975). The manual for the SEI contains a summary of the findings of the major studies using the instrument and provides a rather extensive bibliography.

Intelligence tests and achievement tests were not administered as part of this study, but scores from the school system's regular testing program were used. Appropriate levels of the Cognitive Abilities Test are administered annually to students in grades six (Level D), nine (Level F), and eleven (Level G). Therefore, each student's most recent score on

the Cognitive Abilities Test was used as the indicator of his or her level of mental ability. The Cognitive Abilities Test, which evolved from the Lorge-Thorndike Intelligence Test, is actually a group of subtests which comprise three test batteries - Verbal, Quantitative, and Nonverbal. Because the test is of a multilevel format, all students' IQ scores were based on the same kind of test, making results more comparable than they would have been if different instruments had been used. Also, the Cognitive Abilities Test yields three separate IQ scores, making it possible to examine correlations between the various dimensions of self-concept and three aspects of intelligence.

The Metropolitan Achievement Test (MAT) is administered annually to students in grades six (Intermediate Level) and eight (Advanced Level). Scores from the MAT were used to supply the objective assessment of academic achievement for students in all three grade levels. The MAT, which was developed over a three-year period before publication and involved approximately 250,000 students in the standardization sample, is a widely used and respected measurement of academic achievement. The following MAT scores were Used: Total Reading, Total Mathematics, Science, and Social Studies. The use of these scores made it possible to assess the relationship between the various measures of self-concept and standardized achievement scores in the four major subject areas (English,



mathematics, science, and social studies) which were included in the study of Brookover, Paterson, and Thomas (1962, 1964).

The California Achievement Test (CAT), Level 5, is regularly administered to students at the end of the ninth and tenth grades. Because the CAT scores were the most recent achievement test scores for the eleventh-grade students, they served as additional objective indicators of achievement for the high school students. Like the MAT, the CAT was standardized on a large sample (more than 200,000 subjects, representing all geographical regions of the United States), and it has been used extensively. Only two sections of the CAT are administered locally; therefore, achievement scores were available in reading and language, but no current standardized test results were available for the high school students in science, mathematics, or social studies. Both the eighth-grade MAT scores and the tenth-grade CAT scores were recorded and analyzed for the eleventh-grade students.

### Procedures

A counselor in each school arranged to talk with the classes involved in the study and to solicit the students' cooperation in the project. Each student received for his parents a letter which was signed by the director of pupil personnel services and by the local school counselor explaining the project and also asking for the parents' cooperation. (A copy of that letter may be found in the Appendix.) Parents who did not want their children to participate were asked to

notify the local school counselor in writing, but only one parent did so. The self-concept inventories were administered within the regular classroom setting, following the students' normal schedules. Less than one class period was involved for individual students.

The three self-concept instruments (Self-Concept of Ability, Self-Esteem Inventory, and Piers-Harris Children's Self Concept Scale) were administered in a single sitting. Also, attached to the Self-Concept of Ability Scale was a sheet on which each student indicated the occupation and educational level of the head of the household. (See Appendix.) This data made it possible for the examiner to use Hollingshead's Two Factor Index of Social Position to establish the socio-economic status of each subject's family.

After the tests were administered, demographic data were compiled from each student's school record. Intelligence and achievement test scores, as well as teacher-assigned grades in English, mathematics, social studies, and science were recorded. Based on grades in the four subject areas, an overall average was also computed for each student. The composite grade point average was limited to the four major academic areas because courses in these disciplines are required of all students.

The student's average in all subjects was not used in the study because of the diversity of course offerings in the junior and senior high schools. For example, some students'

total averages would be heavily weighted with college preparatory courses, while others would reflect a preponderance of vocational or commercial courses. Such tracking might affect the relationship between self-concept scores and academic achievement as indicated by teacher-assigned grades. Even though there are admittedly different levels of competence required within a given area (e.g., algebra vs. general mathematics), the use of the same broad disciplines at the different grade levels should make the students' grades generally comparable. Also, according to the model proposed by Shavelson, Hubner, and Stanton (1976), some courses, such as physical education and certain vocational subjects, would seem to be more closely related to the physical self-concept than to the academic self-concept, which was a primary concern of this study.

As indicated in Chapter I, four major research questions were considered. Those questions and the related variable were as follows:

Is the global self-concept significantly related to academic achievement?

Metropolitan Achievement Test  
 California Achievement Test (eleventh grade only)  
 Grade point average in English, mathematics, science,  
 and social studies  
 Combined grade point average for English, mathematics,  
 science, and social studies  
 Self-Esteem Inventory (total score)  
 Piers-Harris Children's Self Concept Scale (total score)

Is the self-concept and academic achievement relationship confined only to the academic aspects of the self-concept?

Metropolitan Achievement Test  
 California Achievement Test (eleventh grade only)

Grade point average in English, mathematics, science,  
and social studies  
Combined grade point average for English, mathematics,  
science, and social studies  
Self-Esteem Inventory (total score and all subscale  
scores)  
Piers-Harris Children's Self Concept Scale (total score  
and all subscale scores)  
Self-Concept of Ability Scale

Are non-intellective variables and intellective variables  
equally valid predictors of scholastic performance?

Cognitive Abilities Test (Verbal, Quantitative, and Non-  
verbal)  
Metropolitan Achievement Test  
California Achievement Test (eleventh grade only)  
Self-Esteem Inventory (total score and subscale scores)  
Piers-Harris Children's Self Concept Scale (total score  
and subscale scores)  
Self-Concept of Ability Scale

Are there significant variations in self-concept scores,  
according to the grade level (age), sex, race, and/or  
socioeconomic status of the subject?

Sex  
Race  
Grade level  
Social class rating  
Self-Esteem Inventory (total score and subscale scores)  
Piers-Harris Children's Self Concept Scale (total score  
and subscale scores)  
Self-Concept of Ability

Once the data were collected, the information was prepared  
for computer analysis, using the Statistical Package for the  
Social Sciences (SPSS). Frequencies, means, and standard devia-  
tions were computed for all variables, as well as Pearson corre-  
lations for all variables, using pairwise deletion. (A case was  
omitted from the computation of a particular coefficient only if  
the value of either variable being considered was missing.  
Although using this technique resulted in some variation in the

number of cases involved in the different analyses, it was necessary to do so because of the incompleteness of school records. The use of listwise deletion would have drastically reduced the sample size.)

Basic statistical calculations (i.e., mean, standard deviation, etc.) were not only computed for the total sample, but they were also determined by race, sex, grade, and social class. Mean scores on all achievement and self-concept measures were further subjected to analysis of variance procedures to discern whether the subgroup differences were statistically significant. Separate Pearson correlations between achievement criteria and self-concept scores were also calculated by sex, race, grade level, and social class.

Stepwise multiple regression analysis was used to assess the relative contributions of the intellectual and non-intellectual variables in the prediction of academic achievement. (Again, pairwise deletion was used.) After all of the intellectual variables were entered into the prediction equation, the multiple regression tables were examined to determine the partial correlations between the non-intellectual variables and the various achievement measures.

## CHAPTER IV

## RESULTS

Global Self-Concept and Academic Achievement

The first research question considered in this study asked whether global self-concept is related to academic achievement, as measured by teacher-assigned grades and standardized achievement test scores. Based on the theory that the self-concept is multifaceted and that it is comprised of both academic and non-academic components, it was hypothesized that the global self-concept would not be significantly related to academic achievement, which would seem to relate to one specific aspect of the self-concept rather than to the total configuration of beliefs about the self.

As Table 3 indicates, however, the data for the total sample did not support the null hypothesis. On the contrary, there were significant, although relatively low, positive correlations between global self-concept scores and both combined grade point average (GPA) and grade point average in four specific academic areas. The correlations between global self-concept scores and standardized achievement test scores were also significant and were generally higher than those for teacher-assigned grades.

Because this study involved race, sex, grade level, and socioeconomic differences in self-concept, it seemed appropriate to test the first hypothesis further, however,

Table 3

Correlations of Global Self-Concept Scores and  
Academic Achievement Criteria (Total Sample)

	Piers-Harris CSCS	Coopersmith SEI
<u>Teacher-Assigned Grades<sup>a</sup></u>		
Combined Grade Point Average	.26	.28
English GPA	.14 (<.01)	.15 (<.01)
Mathematics GPA	.22	.22
Social Studies GPA	.26	.30
Science GPA	.23	.26
<u>Metropolitan Achievement Test<sup>b</sup></u>		
Reading	.23	.31
Mathematics	.25	.33
Science	.21	.26
Social Studies	.20	.26
<u>California Achievement Test<sup>c</sup></u>		
Reading	.26 (<.01)	.31
Language	.30	.31

Note. All correlations are significant at or beyond the .001 level unless indicated otherwise.

<sup>a</sup>n = 353 (PH) and 351 (SEI).

<sup>b</sup>n = 312 (PH) and 313 (SEI).

<sup>c</sup>n = 113 (PH) and 113 (SEI).

for possible subgroup variations in the correlations of global self-concept scores with scholastic performance. Correlations between total scores on both the Piers-Harris Children's Self Concept Scale (CSCS) and the Coopersmith Self-Esteem Inventory (SEI) and achievement criteria were computed for the various subgroups. These calculations revealed that there were indeed some significant differences in the relationship between global self-concept and academic achievement which were not evident in the data for the total sample. While the number of subjects involved in some of the correlations was small (e.g., black students for whom California Achievement Test Scores were available), the information provided by such breakdowns reveals that the relationship between one's evaluation of oneself as a person might not be significantly related to one's performance of academic tasks in all instances.

Analysis by sex. As Table 4 indicates, all of the global self-concept and achievement criteria were significantly correlated for both sexes except in one area. For male subjects, neither the Piers-Harris CSCS nor the Coopersmith SEI total score was significantly related to grade point average in English. Yet, correlations between self-concept scores and reading (MAT and CAT) and language (CAT) scores on standardized tests were statistically significant for males. For both sexes, the correlations between self-concept scores and achievement in English were noticeably higher for standardized tests than for teacher-assigned grades. The data suggested the possibility of subjective influences in the assignment of grades in English. For example, one might ask



Table 4  
Correlations of Global Self-Concept With  
Academic Achievement By Sex

	Piers-Harris CSCS		Coopersmith SEI	
	Male <sup>a</sup>	Female <sup>b</sup>	Male <sup>c</sup>	Female <sup>d</sup>
<u>Teacher-Assigned Grades</u>				
Combined GPA	.29***	.26***	.27***	.29***
English GPA	.15	.16*	.12	.19***
Mathematics GPA	.31***	.17**	.27***	.18***
Social Studies GPA	.27***	.28***	.26**	.33***
Science GPA	.27***	.21*	.27***	.25***
<u>Metropolitan Achievement</u>				
<u>Test</u>				
Reading	.20*	.25***	.27**	.34***
Mathematics	.30***	.21***	.37***	.29***
Science	.19*	.22**	.22**	.31***
Social Studies	.19*	.21**	.22**	.28***
<u>California Achievement</u>				
<u>Test</u>				
Reading	.32*	.23*	.33*	.30*
Language	.36*	.29*	.34*	.31*

<sup>a</sup><sub>n</sub> = 147 (Teacher-Assigned Grades), 132 (MAT), and 41 (CAT).

<sup>b</sup><sub>n</sub> = 207 (Teacher-Assigned Grades), 131 (MAT), and 71 (CAT).

<sup>c</sup><sub>n</sub> = 147 (Teacher-Assigned Grades), 132 (MAT), and 41 (CAT).

<sup>d</sup><sub>n</sub> = 207 (Teacher-Assigned Grades), 131 (MAT), and 72 (CAT).

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

whether teachers expect that the females in their classes will exhibit higher levels of language proficiency and whether teachers' expectations are reflected in the grades they assign to male and female students. Grades received in English classes did not seem to be an important source of self-esteem for the male adolescents in this study.

Analysis by race. Further analysis of global self-concept and achievement correlations also showed race differences. (See Table 5.) Both the Piers-Harris CSCS and the SEI were significantly related to all achievement criteria for white students. For black students, however, the Piers-Harris was significantly related only to the reading ( $r = .29, p < .05$ ) and science ( $r = .32, p < .05$ ) scores on the Metropolitan Achievement Test (MAT). Although black students' SEI scores were significantly correlated with all standardized achievement scores except the social studies section of the MAT, they were related to only one of the subjective achievement criteria (mathematics grade point average). Correlations between self-concept scores and teacher-assigned grades, with the exception of mathematics, were markedly lower for blacks than for whites. For the black students, the correlations between global self-concept scores and standardized achievement test scores were considerably higher than were those between overall self-concept and teacher-assigned grades. The findings indicated that white students' feelings about themselves were more closely tied to their level of scholastic success than

Table 5  
 Correlations of Global Self-Concept With  
 Academic Achievement by Race

	Piers-Harris CSCS		Coopersmith SEI	
	White <sup>a</sup>	Black <sup>b</sup>	White <sup>c</sup>	Black <sup>d</sup>
<u>Teacher-Assigned Grades</u>				
Combined GPA	.26***	.14	.28***	.15
English	.12*	.11	.14*	.08
Mathematics	.21***	.23	.19***	.26*
Social Studies	.30***	.07	.33***	.08
Science	.24***	.08	.26***	.11
<u>Metropolitan Achievement</u>				
<u>Test</u>				
Reading	.19**	.29*	.27***	.34**
Mathematics	.24***	.25	.29***	.37**
Science	.17**	.32*	.23***	.29*
Social Studies	.18**	.18	.23***	.18
<u>California Achievement</u>				
<u>Test</u>				
Reading	.25**	.46	.30**	.66*
Language	.29**	.49	.28**	.78*

<sup>a</sup><sub>n</sub> = 256 (MAT), 100 (CAT).

<sup>b</sup><sub>n</sub> = 56 (MAT), 12 (CAT).

<sup>c</sup><sub>n</sub> = 256 (MAT), 101 (CAT).

<sup>d</sup><sub>n</sub> = 57 (MAT), 12 (CAT).

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

were those of black students. It is possible that viewing oneself as a successful student is more vital to the self-esteem of a white student than to that of a black student. Black students may derive a greater sense of personal adequacy from nonschool activities than do their white classmates.

Analysis by grade level. Self-concept and achievement correlations by grade level are shown in Table 6. Once again, the subgroup correlations deviated from those for the total sample. Total scores on the Piers-Harris were significantly related to all achievement criteria for the seventh and eleventh grades, and SEI scores revealed a similar pattern, with the exception of English GPA and MAT social studies scores for seventh-grade students. Correlations for grade nine were drastically different, however. Not only did the correlations fail to reach statistical significance, but they were so low in some instances (e.g., Piers-Harris scores and teacher-assigned grades) as to be almost nonexistent. Also, the correlations between the overall self-concept, as measured by the Piers-Harris CSCS, and both teacher-assigned grades and MAT mathematics grades were also extremely low (.01) and negative. For the ninth-grade students, correlations between SEI scores and the achievement criteria were somewhat higher than were those for the Piers-Harris, but they were not statistically significant either. When examined by grade level, then, the data indicated that ninth-grade subjects tended to place less emphasis on academic success than did their older or

Table 6

Correlations of Global Self-Concept With  
Academic Achievement by Grade

	Piers-Harris CSCS			Coopersmith SEI		
	7	9	11	7	9	11
<u>Teacher-Assigned Grades<sup>a</sup></u>						
Combined GPA	.33***	.03	.34***	.30***	.14	.36***
English	.19*	-.01	.20*	.11	.13	.23**
Mathematics	.39***	.01	.22**	.36***	.09	.20*
Social Studies	.29***	.03	.40***	.28**	.13	.41***
Science	.29***	.03	.31***	.28**	.10	.35***
<u>Standardized Test Scores</u>						
<u>Metropolitan Achievement Test<sup>b</sup></u>						
Reading	.24**	.03	.36***	.25**	.16	.42***
Mathematics	.33***	-.01	.38***	.34***	.12	.42***
Science	.19*	.12	.27**	.20*	.18	.31***
Social Studies	.19*	.02	.35***	.18	.09	.38***
<u>California Achievement Test<sup>c</sup></u>						
Reading	--	--	.26**	--	--	.31***
Language	--	--	.30***	--	--	.31***

<sup>a</sup> $n$  = 115 (7), 112 (9), and 123 (11) for the Piers-Harris and 116 (7), 108 (9), and 126 (11) for the Coopersmith SEI.

<sup>b</sup> $n$  = 115 (7), 104 (9), and 98 (11) for the Piers-Harris and 112 (7), 100 (9), and 101 (11) for the Coopersmith SEI.

<sup>c</sup> $n$  = 113.

\*  $p < .05$ ,  
 \*\*  $p < .01$ ,  
 \*\*\*  $p < .001$ .

younger counterparts; for the ninth-graders in this study, self-esteem was not a direct correlate of scholastic performance. The implication is that there may be a grade level differential in the importance of the self-concept in relation to academic achievement.

Analysis by social class. There were also socioeconomic differences in the relationship between global self-concept and academic achievement. As Tables 7 and 8 reveal, neither the Piers-Harris CSCS nor the SEI was significantly correlated with academic achievement for students whose parents' occupational and educational levels placed them in the top social class. For both the Piers-Harris and the SEI, the majority of the self-concept and achievement correlations were negative. Although the number of students in Social Class I was small ( $n = 44$ ), analysis of the data revealed that academic achievement bore no significant relationship with overall self-concept for subjects in the top social class.

Correlations between global self-concept and achievement were considerably stronger for subjects in Social Class II. Although some of the correlations were not statistically significant, they more nearly approximated the trend for the overall sample than did those for Social Class I. The majority of the subjects in the study were classified as being in Social Class III or Social Class IV. Despite their similarity in numbers, however, there were very definite class differences in the self-concept and academic achievement relationships.

Table 7

Correlations of Global Self-Concept Scores With  
Teacher-Assigned Grades by Social Class

		Teacher-Assigned Grades				
		Combined English GPA	Math	Social Studies	Science	
<u>Piers-Harris CSCS<sup>a</sup></u>						
Social Class	I	-.02	-.24	.13	.12	-.08
	II	.36**	.26	.23	.46***	.28
	III	.36***	.32***	.12	.38***	.34***
	IV	.14	.02	.11	.15	.17
	V	.19	-.03	.56***	<.01	.15
<u>Coopersmith SEI<sup>b</sup></u>						
Social Class	I	-.03	-.21	.15	.09	-.15
	II	.35*	.30*	.19	.43**	.28
	III	.40***	.28**	.18*	.44***	.38***
	IV	.18	.06	.11	.22*	.21*
	V	.07	-.11	.41**	-.10	.10

<sup>a</sup>n = 42, 46, 116, 101, and 41 for Social Classes I-V, respectively.

<sup>b</sup>n = 40, 43, 117, 110, and 41 for Social Classes I-V, respectively.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Table 8

Correlations of Global Self-Concept Scores With  
Standardized Test Scores by Social Class

	Metropolitan Achievement Test				Calif. Achieve. Test	
	Reading	Math	Science	Social Studies	Reading	Language
Piers-Harris CSCS <sup>a</sup>						
Social Class I	-.21	-.17	-.29	-.11	.004	.29
II	.30	.50***	.32*	.38*	.34	.39
III	.23*	.26*	.22*	.18	.29	.25
IV	.11	.14	.11	.09	.30	.38
V	.44**	.27	.34*	.19	.28	.16
Coopersmith SEI <sup>b</sup>						
Social Class I	-.06	-.04	-.11	.03	.05	.40
II	.39*	.43**	.39*	.42**	.52*	.39
III	.24*	.29**	.17	.17	.37**	.29
IV	.25**	.30**	.23*	.23*	.35	.49*
V	.41**	.21	.26	.06	.21	-.15

<sup>a</sup> $n$  = 37, 39, 100, 100, 38 (MAT) and 21, 21, 43, 19, 8 (CAT) for Social Classes I-V, respectively.

<sup>b</sup> $n$  = 37, 39, 101, 98, 38 (MAT) and 21, 21, 43, 19, 8 (CAT) for Social Classes I-V, respectively.

\*  $p < .05$ .  
 \*\*  $p < .01$ .  
 \*\*\*  $p < .001$ .



For the students in Social Class III, Piers-Harris total scores were significantly correlated with all achievement criteria except the mathematics GPA, the MAT social studies score, and the CAT reading and language scores. Global self-concept scores on the SEI were also related to all indicators of academic achievement except MAT science and social studies scores and CAT language scores for the middle social class.

As was true of the scores of students in Social Class I, however, those of Social Class IV students showed no significant relationship between the Piers-Harris global self-concept score and academic achievement. Yet, for those same subjects, SEI scores were significantly correlated with both social studies and science GPA and with all of the standardized achievement measures except the CAT reading scores.

For subjects in the lowest socioeconomic group, Social Class V, the global self-concept appeared to have little bearing on either combined GPA or on specific subject GPA except in mathematics. For both the Piers-Harris and the SEI, there were significant correlations ( $.56$ ,  $p < .001$  and  $.41$ ,  $p < .01$ , respectively) with teacher-assigned mathematics grades. Insofar as standardized tests were concerned, the SEI global self-concept was related only to the MAT reading test ( $r = .41$ ,  $p < .01$ ), but the Piers-Harris was significantly correlated with both MAT reading ( $r = .44$ ,  $p < .01$ ) and science ( $r = .34$ ,  $p < .05$ ) scores.

The findings related to social class differences revealed that academic achievement varied rather drastically in importance across socioeconomic groups. While data for social classes II and III generally supported the belief that academic success is a significant value for the achievement-oriented middle and upper-middle classes, scholastic performance did not appear to be significantly related to overall feelings of self-worth for subjects near the top or the bottom of the social scale. Out-of-school activities may be greater sources of feelings of adequacy for the latter groups.

In summary, the data for the entire research sample contradicted the null hypothesis that the global self-concept is not related to academic achievement. Yet, when correlations were examined for the various race, sex, grade level, and socioeconomic subgroups, there was some evidence to suggest that the relationship between global self-concept and academic achievement is not significant for all groups.

#### Academic Self-Concept and Academic Achievement

The second research question asked whether the self-concept and academic achievement relationship is confined only to the academic aspects of the self-concept (beliefs about one's ability to perform scholastic tasks). In harmony once again with the theory that the self-concept is multidimensional and that the academic self-concept is the dimension most closely related to performance in school, it was hypothesized that of the various subscales administered, only those

related to the academic self-concept would be significantly correlated with academic achievement. According to this hypothesis, only the Self-Concept of Ability Scale (SCA), which is concerned exclusively with academic self-concept, the Piers-Harris Intellectual and School Status subscale, and the SEI School-Academic subscale would show significant correlations with teacher-assigned grades and standardized achievement test scores.

As Tables 9 and 10 reveal, the data for the total sample did not support the second hypothesis. For teacher-assigned grades (Table 9), the strongest correlations were indeed for the Self-Concept of Ability Scale, which had a correlation of .56 ( $p < .001$ ) with combined GPA. Both the Piers-Harris and the SEI school subscales were also significantly related to achievement as indicated by combined and specific-subject grade point averages. However, the Piers-Harris Behavior subscale was also positively and significantly correlated with grades, perhaps indicating the influence of a student's classroom behavior on teacher-assigned grades. There was also a low but significant relationship between the Piers-Harris Happiness and Satisfaction subscale and combined GPA ( $r = .13$ ,  $p < .01$ ) and grade point average in social studies ( $r = .15$ ,  $p < .01$ ) and science ( $r = .13$ ,  $p < .05$ ). Low positive correlations were also found between the Popularity subscale and mathematics ( $r = .11$ ,  $p < .05$ ) and social studies ( $r = .11$ ,  $p < .05$ ) grades and between the Anxiety subscale and social

Table 9

Correlations of Specific Self-Concept Scores With  
Teacher-Assigned Grades (Total Sample)

Instrument	Combined GPA	Specific Grade Point Average			
		English	Math	Social Studies	Science
<u>SCA</u> <sup>a</sup>	.56***	.45***	.38***	.55***	.52***
<u>Piers-Harris CSCS</u> <sup>b</sup>					
Behavior	.28***	.13***	.25***	.31***	.26***
Intellectual and School Status	.43***	.31***	.35***	.40***	.39***
Physical Appearance and Attributes	.06	.02	.06	.06	.06
Anxiety	.09	.004	.06	.13*	.09
Popularity	.08	.03	.11*	.11*	.03
Happiness and Satisfaction	.13**	.07	.09	.15**	.13*
<u>Coopersmith SEI</u> <sup>c</sup>					
General Self	.23***	.12*	.17***	.27***	.21***
Social Self	.16***	.12*	.13*	.17***	.12*
Home-Parents	.21***	.12*	.18***	.22***	.18***
School-Academic	.37***	.27***	.29***	.34***	.34***

<sup>a</sup>n = 358.                   \*   p < .05.

<sup>b</sup>n = 353.                   \*\*   p < .01.

<sup>c</sup>n = 354.                   \*\*\*   p < .001.

Table 10

Correlations of Specific Self-Concept Scores With  
Achievement Test Scores (Total Sample)

	<u>Metropolitan Achievement Test</u>				<u>Calif. Achieve. Test</u>	
	Reading	Math	Science	Social Studies	Reading	Language
<u>SCA</u> <sup>a</sup>	.52***	.51***	.42***	.54***	.67***	.59***
<u>Piers-Harris CSCS</u> <sup>b</sup>						
Behavior	.19***	.21***	.15**	.16**	.14	.21*
Intellectual and School Status	.36***	.37***	.31***	.35***	.50***	.55***
Physical Appearance and Attributes	.11*	.17**	.11*	.11*	.21*	.19*
Anxiety	.13*	.12*	.12*	.10	.08	.13
Popularity	.11*	.15**	.09	.08	.03	.03
Happiness and Satisfaction	.05	.09	.008	.03	.004	.01
<u>Coopersmith SEI</u> <sup>c</sup>						
General Self	.35***	.36***	.31***	.30***	.33***	.30***
Social Self-Peers	.20***	.25***	.20***	.19***	.22*	.24**
Home-Parents	.12*	.13*	.08	.07	.16	.22*
School-Academic	.29***	.29***	.24***	.29***	.25**	.30***

<sup>a</sup>n = 316 (MAT) and 113 (CAT).

\* p < .05.

<sup>b</sup>n = 312 (MAT) and 112 (CAT).

\*\* p < .01.

<sup>c</sup>n = 313 (MAT) and 113 (CAT).

\*\*\* p < .001.

studies GPA ( $\underline{r} = .13$ ,  $\underline{p} < .05$ ). The reader should be aware that a high score on anxiety indicates a high level of anxiety; therefore, the relationship suggests that the more anxious the student, the higher his or her social studies grade. The more anxious students might be somewhat more concerned about their scholastic performance and therefore exert greater effort to make good grades, but why this phenomenon was observed only for social studies is largely a matter of conjecture.

In contrast to the Piers-Harris subscales, all of the SEI subscales were significantly and positively related to combined and specific subject grade point averages. Yet, the School-Academic subscale did show a noticeably stronger correlation with teacher-assigned grades than did the General Self, Social Self, and the Home-Parents subscales.

As Table 10 reveals, the Self-Concept of Ability Scale scores showed a very strong correlation with standardized achievement test scores. SCA - achievement test correlations ranged from .42 (MAT social studies) to .67 (CAT reading), and all were significant at the .001 level. Once again, the strongest correlations between the Piers-Harris subscales and academic achievement were those for the Intellectual and School Status subscale. Correlations ranged from .31 (MAT science) to .55 (CAT language); all were significant at the .001 level. Contrary to the second hypothesis, however, other Piers-Harris subscales were also related (albeit to a

lesser degree) to achievement test scores. The Physical Appearance and Attributes subscale, for example, showed a low but statistically significant positive relationship with all of the standardized achievement criteria.

The Popularity and Anxiety subscales were also related to MAT reading and mathematics scores, and there was a low but significant positive relationship between MAT science scores and Anxiety subscale scores. As was true of teacher-assigned grades, the Behavior subscale was also significantly correlated with standardized achievement test scores (with the exception of CAT reading). The lowest correlations between self-concept dimensions and standardized achievement measures were those for the Happiness and Satisfaction subscales, suggesting that adolescents' evaluations of their own well-being are relatively independent of their academic achievement.

For the SEI, there was a positive and significant relationship between the School-Academic subscale and standardized achievement criteria. However, correlations between SEI General Self subscale scores and all parts of the MAT, as well as the CAT reading test, surpassed those for the school subscale. (The correlations with CAT language were the same for both the School-Academic and General Self subscales.)

The SEI Social Self subscale was also significantly related to all of the standardized achievement criteria. The Home-Parents subscale, however, assumed a different pattern.

Whereas it was significantly related to all teacher-assigned grades, it bore a lesser relationship with standardized test scores. There were low but statistically significant ( $p < .05$ ) relationships only with MAT reading and mathematics and CAT language scores. One might surmise that parents encourage their children to make good grades and that they monitor academic progress in grade point averages which are shown on report cards. In general, school personnel provide more complete (and more easily understood) information to parents regarding their children's classroom performance than about their scores on standardized achievement tests. Also, most parents know that report cards are issued at designated intervals, and they are able to follow academic progress, as reflected in letter grades, more easily and on a more regular basis than is true of standardized test scores.

When considered as a whole, the data suggest that the relationship between self-concept and academic achievement is rather complex. That relationship does not appear to be restricted to the academic self-concept exclusively. While the scholastic aspects of the self did have the strongest and most consistent correlations with achievement criteria, other dimensions of the self-concept also were related--especially as measured by the Self-Esteem Inventory.

For the Piers-Harris CSCS, the non-academic aspects of the self-concept showed great variation in their correlations with achievement criteria. With the exception of



Behavior, the data based on the subscales of the Piers-Harris offered some support to the position that the academic self-concept is the dimension most nearly related to scholastic performance. The contradictory nature of the findings from the two instruments suggests that the subscales of one or both of the instruments might not accurately discriminate among the various dimensions of the self. If, as self-concept theory suggests, the self is indeed multifaceted, and if both instruments possess divergent validity, the findings for the two inventories would be expected to be comparable. Such was not the case in this study.

Analysis by sex. So that the academic self-concept and academic achievement relationship might be examined further, subjects were divided by sex, race, grade, and socioeconomic status to determine whether the correlations would be consistent across subgroups. Although the findings for the total group did show a strong relationship between the academic self-concept and academic achievement, they did not confirm the second hypothesis. However, when correlations were examined separately by subgroups, some trends emerged which would lend some support to Hypotheses II. As Table 11 indicates, the correlations between SCA scores and teacher-assigned grades were significantly related for both sexes, as were those for both the Piers-Harris Intellectual and School Status and the SEI School-Academic subscales.

Table 11

Correlations of Specific Self-Concept Scores With  
Teacher-Assigned Grades By Sex

	<u>Combined GPA</u>		<u>English GPA</u>		<u>Math GPA</u>		<u>Soc.Stud. GPA</u>		<u>Science GPA</u>	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
SCA <sup>a</sup>	.61***	.57***	.52***	.45***	.42***	.38***	.57***	.56***	.57***	.50***
<u>Piers-Harris CSCS</u> <sup>b</sup>										
Behavior	.22**	.30***	.05	.15***	.24**	.22***	.25**	.34***	.20**	.27***
Intellectual and School Status	.51***	.35***	.37***	.26***	.46***	.24***	.45***	.35***	.48***	.30***
Physical Appearance and Attributes	.21**	<.01	.20**	-.06	.21**	-.02	.16	.03	.18*	<.01
Anxiety	.15	.16*	<.01	.10	.17*	.08	.16*	.19**	.17*	.12
Popularity	.04	.13	-.03	.09	.13	.10	.04	.17**	<.01	.05
Happiness and Satisfaction	.17*	.13	.04	.10	.20*	.04	.19*	.14	.14	.14*
<u>Coopersmith SEI</u> <sup>c</sup>										
General Self	.27***	.25***	.12	.15***	.27***	.12	.26**	.33***	.27***	.20**
Social Self	.24**	.03	.20**	-.01	.20*	.03	.25**	.07	.19*	.02
Home-Parents	.14	.26***	.04	.17*	.18*	.17**	.14	.29***	.12	.23***
School-Academic	.42***	.33***	.29***	.25***	.34***	.25***	.37***	.32***	.43***	.27***

<sup>a</sup> n = 150 males and 208 females.

\* p < .05.

<sup>b</sup> n = 147 males and 207 females.

\*\* p < .01.

<sup>c</sup> n = 147 males and 207 females.

\*\*\* p < .001.

When examined by sex, correlations between grade point averages and other, non-academic, self-concept subscales were less consistent than were those between academic self-concept and grades. The Behavior subscale of the Piers-Harris, for example, was significantly related to all grade point averages (combined and specific-subject) for females, but for males, the relationship between behavior and English GPA was not statistically significant.

The Physical Appearance and Attributes subscale of the Piers-Harris showed a positive and significant relationship with all specific subject grade point averages except social studies for males. The correlations for the same criteria for females were not only nonsignificant but were also extremely low. The Piers-Harris Anxiety subscale also revealed sex differences. For females, there was a significant correlation between anxiety and both combined GPA ( $\underline{r} = .16, \underline{p} < .05$ ) and social studies GPA ( $\underline{r} = .19, \underline{p} < .01$ ). Anxiety scores were also significantly related to mathematics ( $\underline{r} = .17, \underline{p} < .05$ ), social studies ( $\underline{r} = .18, \underline{p} < .05$ ), and science ( $\underline{r} = .18, \underline{p} < .05$ ) grades for males.

The Piers-Harris Popularity subscale was significantly related to social studies grades for females ( $\underline{r} = .17, \underline{p} < .01$ ), and Happiness and Satisfaction - GPA correlations were significant for males on combined GPA ( $\underline{r} = .17, \underline{p} < .05$ ) and mathematics GPA ( $\underline{r} = .20, \underline{p} < .05$ ) and for females on science grades ( $\underline{r} = .14, \underline{p} < .05$ ).

As was true of the total sample correlations, the SEI General Self showed a definite positive relationship with teacher-assigned grades for both sexes. (Exceptions were English for males and mathematics for females. Again, one might ask whether sexist values on the part of students or teachers could be involved to the extent that males are believed to be "naturally" better mathematics students, and females are expected to exhibit greater proclivity for language skills.) The SEI Social Self-Peers scores were significantly related to both combined GPA and specific subject GPA for males, but such a relationship was not found for females. An almost reverse trend emerged when SEI Home-Parents scores were correlated with grades by sex. Scores for female subjects showed a significant positive relationship, with correlations ranging from .17 to .29, but for male subjects the student's relationship with his parents seemed to be unrelated to the grades received in school.

When the correlations between subscales and achievement on standardized tests were examined by sex (Tables 12 and 13), the same general pattern emerged as that found with teacher-assigned grades. Once again, the SCA - achievement correlations were quite strong across the achievement criteria, and the one subscale of the Piers-Harris CSCS which was consistently correlated with all objective achievement indicators for both sexes was Intellectual and School Status. Scores on the Piers-Harris Behavior subscale were significantly related to all of

Table 12  
Correlations of Specific Self-Concept Scores and  
MAT Scores by Sex

	Reading		Math		Science		Social Studies	
	Males	Females	Males	Females	Males	Females	Males	Females
<u>SCA</u> <sup>a</sup>	.51***	.53***	.52***	.51***	.47***	.50***	.52***	.56***
<u>Piers-Harris CSCS</u> <sup>b</sup>								
Behavior	.13	.23***	.18*	.25***	.08	.28	.09	.23**
Intellectual and School Status	.34***	.37***	.42***	.32***	.31***	.31***	.37***	.33***
Physical Appearance and Attributes	.14	.10	.25**	.11	.16	.05	.14	.09
Anxiety	.14	.14	.20*	.07	.12	.09	.10	.11
Popularity	.07	.16*	.17*	.12	.08	.09	.07	.11
Happiness and Satisfaction	.04	.07	.16	.04	-.01	.01	.02	.05
<u>Coopersmith SEI</u> <sup>c</sup>								
General Self	.30***	.38***	.39***	.34***	.26**	.35***	.27***	.33***
Social Self	.17*	.23*	.27**	.22**	.21*	.21**	.19*	.19**
Home-Parents	.05	.16*	.14	.13	.02	.14*	.02	.11
School-Academic	.30***	.29***	.34***	.25***	.25**	.24***	.31***	.28***

<sup>a</sup> n = 135 males and 181 females.

\*  $p < .05$ .

<sup>b</sup> n = 132 males and 181 females.

\*\*  $p < .01$ .

<sup>c</sup> n = 132 males and 181 females.

\*\*\*  $p < .001$ .

Table 13  
 Correlations of Specific Self-Concept Scores  
 and CAT Scores By Sex

	Reading		Language	
	Males	Females	Males	Females
<u>SCA</u>	.69***	.68***	.67***	.56***
<u>Piers-Harris CSCS<sup>b</sup></u>				
Behavior	.23	.08	.26	.16
Intellectual and School Status	.61***	.41***	.67***	.44***
Physical Appearance and Attributes	.25	.18	.28	.12
Anxiety	.08	.11	.08	.24*
Popularity	-.09	.13	-.11	.12
Happiness and Satisfac- tion	-.03	.02	.01	.01
<u>Coopersmith SEI<sup>c</sup></u>				
General Self	.43**	.29**	.36*	.30**
Social Self	.14	.28*	.16	.25*
Home - Parents	-.05	.27*	.10	.30**
School - Academic	.33*	.19	.34*	.26*

a<sub>n</sub> = 41 males and 71 females.

b<sub>n</sub> = 41 males and 71 females.

c<sub>n</sub> = 41 males and 72 females.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

the MAT scores for females, but the only significant behavior-achievement test score correlation for males was on MAT mathematics ( $r = .18$ ,  $p < .05$ ).

As was true of the Piers-Harris Intellectual and School Status subscale, the SEI School-Academic subscale showed a positive and significant relationship with the objective achievement criteria for both sexes. (An exception was CAT reading for females, with a nonsignificant correlation of .19). Somewhat surprisingly, however, in all cases but one (MAT social studies for males), the SEI General Self correlations with achievement test scores were as high as or higher than those for the SEI subscale concerned only with the academic self. The Social Self-Peers subscale was also related to all standardized test scores for females and for males on all of the MAT scores but not on the CAT. Although the correlations between Home-Parents scores and achievement test scores were generally low for both sexes, they were statistically significant for females on MAT reading and science and on both the reading and language tests of the CAT.

The analysis by sex provided contradictory information. When only the Piers-Harris correlations with standardized achievement test scores were considered, the data generally supported the hypothesis that one's academic self-concept is that dimension of the self-concept which is most nearly related to one's scholastic success. The Piers-Harris correlations with teacher-assigned grades showed a distinct trend for the academic self-concept scores to be consistently related

to achievement, but the correlations between Piers-Harris Behavior scores and grade point averages were almost as consistent, although of lesser magnitude. The latter finding suggests that grades assigned by teachers may be influenced by students' classroom decorum. With the exception of the Behavior subscale, the non-academic subscales of the Piers-Harris were not systematically related to academic achievement for either sex.

However, when data for the SEI alone were considered, there was relatively little support for the second hypothesis. The non-academic self-concept subscale scores, especially for the General Self, were significantly related to many of the achievement criteria. Once again, the apparent contradictions in the data obtained with the two instruments raises the question as to the validity of the various subscales of the self-concept inventories. The similarity of findings for the various SEI subscales suggests that the power to discriminate among the various aspects of self might be lower for that instrument than for the Piers-Harris.

Analysis by race. Correlations between the various self-concept dimensions and teacher-assigned grades are reported by race in Table 14. The alleged measures of academic self-concept were consistently related to grades in school for both races. SCA, Piers-Harris Intellectual and School Status and SEI School-Academic scores showed stronger correlations with achievement than did any other subscales. No other



Table 14

Correlations of Specific Self-Concept Scores and  
Teacher-Assigned Grades by Race

	<u>Combined GPA</u>		<u>English</u>		<u>Math</u>		<u>Soc. Stud.</u>		<u>Science</u>	
	White	Black	White	Black	White	Black	White	Black	White	Black
<sup>a</sup> SCA	.53***	.55***	.40***	.49***	.34***	.39***	.52***	.53***	.49***	.47***
<u>Piers-Harris CSCS</u> <sup>b</sup>										
Behavior	.31***	.13	.13*	.07	.26*	.14	.36***	.12	.28***	.12
Intellectual and School Status	.42***	.36**	.28***	.30*	.31***	.41***	.41***	.25**	.39***	.27*
Physical Appearance and Attributes	.07	-.02	.03	-.05	.04	.11	.08	-.04	.09	-.07
Anxiety	.10	.02	-.03	.05	.05	.11	.17**	-.07	.10	.008
Popularity	.10	-.09	.04	-.12	.10	-.12	.14**	-.14	.04	-.15
Happiness and Satisfaction	.15**	.11	.05	.14	.09	.14	.19***	.02	.15**	.09
<u>Coopersmith SEI</u> <sup>c</sup>										
General Self	.25***	.07	.09	.07	.16**	.14	.31***	.05	.24***	.02
Social Self	.16**	.04	.12*	-.07	.09	.23	.19***	.02	.12*	-.02
Home-Parents	.23***	.06	.13***	-.008	.19**	.12	.26***	.04	.20***	.07
School-Academic	.32***	.47***	.21***	.42***	.24***	.47***	.32***	.33***	.30***	.40***

<sup>a</sup><sub>n</sub> = 295 whites and 63 blacks. \* p < .05.

<sup>b</sup><sub>n</sub> = 293 whites and 61 blacks. \*\* p < .01.

<sup>c</sup><sub>n</sub> = 292 whites and 62 blacks. \*\*\* p < .001.

subscales were correlated with all dimensions of achievement for both races. For black students, no subscales other than those concerned with the academic self-concept were significantly correlated with grade point averages.

There was a marked difference in sample size for white and black subjects, and this factor, combined with the dispersion of scores, would in some instances affect statistical significance. Yet, the GPA and non-academic self-concept correlations for the black subjects in this study were generally so low (and often in a negative direction) as to indicate that there was very little relationship between the non-academic measures of self-concept and achievement in school for this subgroup.

As Tables 15 and 16 reveal, the relationships between academic self-concept and standardized achievement test scores were significant for both races on most of the objective achievement criteria. (Exceptions were SCA - CAT language for blacks and SEI School-Academic - CAT reading for subjects of both races. The number of subjects who had CAT scores, which were available for eleventh-graders only, was quite small; therefore, statistics relating to that test should be interpreted very cautiously.)

Only one of the Piers-Harris non-academic subscales was significantly correlated with standardized test scores for blacks. Behavior scores were related to both the reading ( $\underline{r} = .28, \underline{p} < .05$ ) and science ( $\underline{r} = .29, \underline{p} < .05$ ) tests of

Table 15

Correlations of Specific Self-Concept Scores and  
Achievement Test Scores (MAT) by Race

Instrument	Metropolitan Achievement Test							
	Reading		Math		Science		Social Studies	
	White	Black	White	Black	White	Black	White	Black
SCA <sup>a</sup>	.48***	.51***	.49***	.42****	.45***	.47***	.51***	.53***
<u>Piers-Harris CSCS<sup>b</sup></u>								
Behavior	.16**	.28*	.19**	.25	.12	.29*	.15*	.15
Intellectual and School Status	.31***	.45***	.35***	.31*	.26***	.41**	.31***	.36**
Physical Appearance and Attributes	.13*	.18	.19**	.18	.11	.22	.15*	.01
Anxiety	.12	.09	.10	.10	.09	.16	.08	.07
Popularity	.07	.19	.11	.18	.04	.21	.06	.06
Happiness and Satisfaction	.05	.17	.08	.22	-.02	.17	.03	.10
<u>Coopersmith SEI<sup>c</sup></u>								
General Self	.33***	.34**	.34***	.39**	.29***	.30*	.30***	.21
Social Self	.17**	.20	.23***	.22	.18**	.19	.18**	.10
Home-Parents	.09	.15	.12*	.07	.05	.15	.06	.03
School-Academic	.24***	.37**	.24***	.34**	.18**	.33**	.24***	.38**

<sup>a</sup><sub>n</sub> = 258 whites and 58 blacks.

\* p &lt; .05.

<sup>b</sup><sub>n</sub> = 256 whites and 58 blacks.

\*\* p &lt; .01.

<sup>c</sup><sub>n</sub> = 256 whites and 57 blacks.

\*\*\* p &lt; .001.

Table 16

Correlations of Specific Self-Concept Scores and  
Achievement Test Scores (CAT) by Race

Instrument	California Achievement Test			
	Reading		Language	
	White	Black	White	Black
<u>SCA</u> <sup>a</sup>	.65***	.61*	.58***	.29
<u>Piers-Harris CSCS</u> <sup>b</sup>				
Behavior	.13	.29	.20*	.37
Intellectual and School Status	.44***	.60*	.51***	.63*
Physical Appearance and Attributes	.24**	.47	.21*	.36
Anxiety	.06	.20	.10	.38
Popularity	.06	.17	.06	-.02
Happiness and Satisfaction	.04	.35	.05	.27
<u>Coopersmith SEI</u> <sup>c</sup>				
General Self	.34***	.74**	.28**	.79**
Social Self	.22*	.39	.24*	.29
Home-Parents	.17	.22	.20*	.49
School-Academic	.18	.53	.23*	.65*

<sup>a</sup>n = 101 whites and 12 blacks.

<sup>b</sup>n = 100 whites and 12 blacks.

<sup>c</sup>n = 101 whites and 12 blacks.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

the MAT. Neither SEI Social Self-Peers nor Home-Parents subscale scores were related to standardized achievement scores for blacks, but the General Self scores were. As was true of the larger sample and of the white student alone, the correlations between SEI General Self scores and achievement test scores were generally higher for blacks than were those for the School-Academic subscale and achievement scores.

Overall, the data suggest that scholastic success is more important in the general self-evaluation of white students than of their black counterparts. As was hypothesized for the total sample, only the academic aspects of the self-concept were significantly related to the scholastic attainments of black subjects, but that restricted relationship did not hold for the white subjects. For the latter group, success as an individual appeared to be inseparable from success as a student.

Analysis by grade level. Tables 17 through 22 show the correlations between the various dimensions of self-concept and academic achievement by grade level. The overall configuration of correlations was similar for the seventh and eleventh grades, but the results were quite different for the ninth grade.

As Tables 17 and 18 reveal, the academic self-concept, as measured by the SCA and both the Piers-Harris Intellectual and School Status and SEI School-Academic subscales, was significantly correlated with all of the subjective

Table 17

Correlations of Specific Self-Concept Scores and  
Teacher-Assigned Grades for Grade 7

Instrument	Combined GPA	English	Specific Math	Subject GPA Social Studies	Science
<u>SCA</u> <sup>a</sup>	.49***	.35***	.47***	.44***	.44***
<u>Piers-Harris CSCS</u> <sup>b</sup>					
Behavior	.34***	.17	.38***	.30***	.33***
Intellectual and School Status	.48***	.32***	.52***	.42***	.42***
Physical Appearance and Attributes	-.0002	-.06	.09	-.009	-.01
Anxiety	.16	.04	.17	.16	.17
Popularity	.25**	.12	.35***	.22*	.17
Happiness and Satisfaction	.22*	.14	.20*	.21*	.22*
<u>Coopersmith SEI</u> <sup>c</sup>					
General Self	.26**	.09	.30***	.28**	.23**
Social Self	.23**	.10	.30***	.24**	.16
Home-Parents	.31***	.17	.31***	.27**	.32***
School-Academic	.42***	.29**	.41***	.35***	.43***

<sup>a</sup>n = 117.           \* p < .05.

<sup>b</sup>n = 115.           \*\* p < .01.

<sup>c</sup>n = 116.           \*\*\* p < .001.

Table 18

Correlations of Specific Self-Concept Scores and  
Achievement Test Scores (MAT) for Grade 7

Instrument	Reading	Metropolitan Achievement Test		
		Math	Science	Social Studies
SCA <sup>a</sup>	.53***	.57***	.39***	.52***
<u>Piers-Harris CSCS</u> <sup>b</sup>				
Behavior	.22*	.28**	.20*	.19*
Intellectual and School Status	.42***	.50***	.35***	.39***
Physical Appearance and Attributes	.01	.15	-.02	-.005
Anxiety	.17	.19*	.12	.12
Popularity	.12	.25**	.05	.07
Happiness and Satisfaction	.10	.16	.05	.12
<u>Coopersmith SEI</u> <sup>c</sup>				
General Self	.29**	.38***	.24**	.24**
Social Self	.11	.26**	.10	.12
Home-Parents	.19*	.19*	.12	.10
School-Academic	.32***	.34***	.24**	.34***

Note. California Achievement Test scores were not available for grade 7 subjects.

<sup>a</sup><sub>n</sub> = 112.           \* p < .05.

<sup>b</sup><sub>n</sub> = 115.           \*\* p < .01.

<sup>c</sup><sub>n</sub> = 112.           \*\*\* p < .001.

(teacher-assigned grades) and objective (standardized test scores) criteria for students in the seventh grade. Other facets of the self-concept were also related to the academic achievement of seventh-graders, however. In fact, the SEI General Self correlation with MAT science scores was equivalent to that of the School-Academic subscale ( $\underline{r} = .24, \underline{p} < .01$ ), and the General Self - MAT mathematics correlation was actually higher than the School-Academic and MAT mathematics correlation ( $\underline{r} = .38, \underline{p} < .001$  vs.  $\underline{r} = .34, \underline{p} < .001$ .)

The Behavior subscale of the Piers-Harris CSCS was significantly correlated with all parts of the MAT and with all teacher-assigned grades except English for students in grade seven, but the correlations with the teacher-assigned grades were noticeably higher than those for the MAT. Again, it would appear that students' behavior influences, to some extent, the course grades they receive. Furthermore, it seems reasonable to assume that those students who exhibit "good" behavior in school (i.e., paying attention, preparing assignments, studying, etc.) would make higher grades than students who do not manifest socially acceptable conduct.

The Anxiety subscale showed a low positive correlation with MAT mathematics ( $\underline{r} = .19, \underline{p} < .05$ ), and Popularity scores were significantly related to combined GPA ( $\underline{r} = .25, \underline{p} < .01$ ) as well as to grade point averages in mathematics ( $\underline{r} = .35, \underline{p} < .001$ ) and social studies ( $\underline{r} = .22, \underline{p} < .05$ ), and MAT mathematics ( $\underline{r} = .25, \underline{p} < .01$ ) scores. Although the Happiness



and Satisfaction scores were not significantly related to standardized achievement scores, their correlations with combined GPA ( $\underline{r} = .22$ ) and GPA in mathematics ( $\underline{r} = .20$ ), social studies ( $\underline{r} = .21$ ), and science ( $\underline{r} = .22$ ) were significant at the .05 level.

The seventh-grade students' scores on the SEI non-academic subscales were all significantly correlated with combined GPA and with GPA in all subjects except English; the only other exception was the one correlation between Social Self-Peers and science GPA. With the exception of General Self and School-Academic subscale scores, the SEI correlations with standardized test scores were lower (and less often significant) than were the same correlations with teacher-assigned grades.

Insofar as a student's actual performance in class is concerned, at least as reflected in grade point averages, the various non-academic dimensions of self-concept appear to be important. For the seventh-grade subjects included in this sample, the student's behavior, social relationships with peers and family, and general feelings of self-worth were related to academic performance. The relationship with objective test results was less definite, but both behavior and general self scores were also significantly related to all parts of the MAT.

As previously noted, the relationship between global self-concept and academic achievement followed an unusual pattern

for ninth-grade students. The same may be said of the self-concept subscale scores as well. As Tables 19 and 20 reveal, the Self-Concept of Ability scores were significantly correlated with both teacher-assigned grades and standardized test scores. Scores on the SEI School-Academic subscale were also significantly related to all of the achievement criteria except MAT mathematics. The academic subscale of the Piers-Harris, which generally showed significant correlations with achievement criteria across subgroups, was significantly related only to MAT reading, science, and social studies scores; Intellectual and School Status - GPA correlations were not significant.

For the ninth-grade subjects, the non-academic aspects of self-concept would appear to have little bearing on teacher-assigned grades; PH Behavior scores were significantly correlated with social studies GPA ( $\underline{r} = .25, \underline{p} < .01$ ) and combined GPA ( $\underline{r} = .18, \underline{p} < .05$ ), and SEI General Self scores were significantly related to MAT science scores ( $\underline{r} = .22, \underline{p} < .05$ ). However, no other correlations between non-academic dimensions of self and academic achievement criteria were significant. The tendency for General Self scores to parallel or exceed those for the School-Academic subscale in magnitude of correlation with achievement criteria was absent in the data for ninth-graders.

Tables 19 and 20 also reveal a large number of negative, although nonsignificant, correlations between non-academic

Table 19  
 Correlations of Specific Self-Concept Scores  
 and Teacher-Assigned Grades  
 for Grade 9

	Specific Subject GPA				
	Combined GPA	English	Math	Social Studies	Science
<u>SCA</u> <sup>a</sup>	.46***	.38***	.31***	.43***	.37***
<u>Piers-Harris CSCS</u> <sup>b</sup>					
Behavior	.18*	.10	.11	.25**	.14
Intellectual and School Status	.16	.13	.06	.12	.17
Physical Appearance and Attributes	-.05	-.03	-.04	-.12	-.02
Anxiety	-.03	-.06	-.02	-.01	-.03
Popularity	-.11	-.12	.004	-.08	-.17
Happiness and Satisfaction	.05	.05	.02	.04	.04
<u>Coopersmith SEI</u> <sup>c</sup>					
General Self	.13	.13	.04	.16	.10
Social Self	-.05	.04	-.04	-.11	-.05
Home-Parents	.08	.08	.05	.10	.04
School-Academic	.28**	.22*	.23*	.22**	.26**

<sup>a</sup>n = 111.

<sup>b</sup>n = 112.

<sup>c</sup>n = 108.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Table 20  
 Correlations of Specific Self-Concept Scores  
 and Achievement Test Scores (MAT)  
 for Grade 9

Instrument	Metropolitan Achievement Test			
	Reading	Math	Science	Social Studies
SCA <sup>a</sup>	.50***	.44***	.51***	.57***
<u>Piers-Harris CSCS<sup>b</sup></u>				
Behavior	-.02	-.01	.01	-.01
Intellectual and School Status	.19*	.17	.24**	.23*
Physical Appearance and Attributes	.01	-.03	.08	.01
Anxiety	.03	-.04	.10	-.04
Popularity	.02	-.07	.05	-.04
Happiness and Satisfaction	-.07	-.08	-.09	-.12
<u>Coopersmith SEI<sup>c</sup></u>				
General Self	.15	.13	.18	.11
Social Self	.18	.11	.22*	.13
Home-Parents	.01	.01	-.01	-.06
School-Academic	.23*	.19	.27**	.22*

Note. California Achievement Test scores were not available for grade 9.

<sup>a</sup>  
 $\underline{n} = 103.$

<sup>b</sup>  
 $\underline{n} = 104.$

<sup>c</sup>  
 $\underline{n} = 100.$

\*  $p < .05.$   
 \*\*  $p < .01.$   
 \*\*\*  $p < .001.$

self-concept scores and achievement criteria. On the Piers-Harris CSCS, for example, all correlations of Physical Appearance and Attributes, Anxiety, and Popularity with combined and specific subject GPAs were negative, with the exception of Popularity - mathematics GPA. Piers-Harris Happiness and Satisfaction scores were also negatively (but not significantly) correlated with all MAT scores. On the Self-Esteem Inventory, all Social Self-Peers correlations with subjective achievement criteria, except English GPA, were negative as well. The findings indicated that the ninth-grader who was less happy, less popular, less socially inclined, but also less anxious, tended to perform at higher academic levels.

As was true of the seventh-grade, data for the eleventh grade (Tables 21 and 22) revealed that non-academic aspects of the self-concept were related to academic achievement. The strongest correlations, once again, were between the SCA and the various achievement criteria. For the eleventh-grade subjects, for example, SCA - MAT score correlations ranged from .70 to .73 ( $p < .001$ ). Piers-Harris Intellectual and School Status correlations were significantly correlated with all achievement criteria, as were those for the School-Academic subscale of the SEI. Yet, when standardized test scores were considered, SEI General Self correlations exceeded those for School-Academic except for CAT language, in which case the correlations were the same ( $r = .30$ ,  $p < .001$ ).

Table 21

Correlations of Specific Self-Concept Scores  
and Teacher-Assigned Grades  
for Grade 11

	Specific Subject GPA				
	Combined GPA	English	Math	Social Studies	Science
<u>SCA<sup>a</sup></u>	.66***	.58***	.35***	.67***	.64***
<u>Piers-Harris CSCS<sup>b</sup></u>					
Behavior	.31***	.13	.23**	.38***	.29***
Intellectual and School Status	.56***	.42***	.38***	.57***	.51***
Physical Appearance and Attributes	.20*	.13	.10	.25**	.20*
Anxiety	.13	.03	.04	.22**	.12
Popularity	.08	.06	-.01	.13	.07
Happiness and Satisfaction	.12	.01	.06	.19*	.11
<u>Coopersmith SEI<sup>c</sup></u>					
General Self	.29***	.15	.17	.34***	.30***
Social Self	.24**	.19*	.11	.29***	.22**
Home-Parents	.22**	.12	.17	.27**	.18*
School-Academic	.38***	.29***	.24**	.42***	.33***

$a_n = 126.$

$b_n = 123.$

$c_n = 126.$

\*  $p < .05.$

\*\*  $p < .01.$

\*\*\*  $p < .001.$

Table 22

Correlations of Specific Self-Concept Scores and  
Achievement Test Scores for Grade 11

	<u>Metropolitan Achievement Test</u>				<u>Calif. Achieve. Test</u>	
	Reading	Math	Science	Social Studies	Reading	Language
<u>SCA<sup>a</sup></u>						
<u>Piers-Harris CSCS<sup>b</sup></u>	.70***	.73***	.73***	.72***	.67***	.59***
Behavior	.24*	.23*	.11	.17	.14	.21
Intellectual and School Status	.54***	.50***	.39***	.50***		.56***
Physical Appearance and Attributes	.20*	.27**	.17	.22*	.21*	.19*
Anxiety	.21*	.20*	.16	.22	.08	.13
Popularity	.09	.14	.03	.12	.03	.03
Happiness and Satisfaction	.10	.17	<.001	.06	.004	.01
<u>Coopersmith SEI<sup>c</sup></u>						
General Self	.46***	.42***	.35***	.41***	.33***	.30***
Social Self	.18	.23*	.17	.17	.22**	.23**
Home-Parents	.22*	.27*	.19	.21*	.16	.22*
School-Academic	.38***	.39***	.26***	.35***	.25**	.30***

<sup>a</sup>  $n = 101$  (MAT) and 113 (CAT).

\*  $p < .05$ .

<sup>b</sup>  $n = 98$  (MAT) and 113 (CAT).

\*\*  $p < .01$ .

<sup>c</sup>  $n = 101$  (MAT) and 113 (CAT).

\*\*\*  $p < .001$ .

For the eleventh-grade students, all of the non-academic self-concept measures except Popularity were significantly correlated with social studies GPA. In addition, Piers-Harris Behavior scores were significantly correlated with combined GPA ( $\underline{r} = .31$ ,  $\underline{p} < .001$ ), as well as with GPA in mathematics ( $\underline{r} = .23$ ,  $\underline{p} < .01$ ) and science ( $\underline{r} = .29$ ,  $\underline{p} < .001$ ). Behavior scores were also significantly ( $\underline{p} < .01$ ) correlated with MAT reading and mathematics scores. As was true of the seventh-grade sample, data for the eleventh-grade subjects revealed that students' perceptions of their behavior (and presumably their actual behavior) did have an effect on their academic achievement. Conversely, experiencing academic success could well have a positive influence on students' behavior in school.

Correlations between Physical Appearance and Attributes scores and combined GPA ( $\underline{r} = .20$ ,  $\underline{p} < .05$ ), social studies GPA ( $\underline{r} = .25$ ,  $\underline{p} < .01$ ), science GPA ( $\underline{r} = .20$ ,  $\underline{p} < .05$ ), and all of the standardized test scores except MAT science were significant. In addition to the significant correlations between SEI General Self and the various achievement criteria, SEI Social Self-Peers scores were significantly related to all of the teacher-assigned grades except mathematics and to MAT mathematics ( $\underline{r} = .23$ ,  $\underline{p} < .05$ ) and CAT reading ( $\underline{r} = .22$ ,  $\underline{p} < .01$ ) and language, ( $\underline{r} = .23$ ,  $\underline{p} < .01$ ) scores. In contrast to the ninth-grade subjects, whose SEI Home-Parents scores were not related to achievement, the eleventh-graders



appeared to be influenced in scholastic performance by their feelings about family relationships. Scores on the Home-Parents subscale were significantly related to all subjective achievement criteria except English and mathematic GPA and to all objective measures except MAT science and CAT reading.

In summary, the correlations by grade level showed that for subjects in the seventh and eleventh grades, non-academic aspects of the self-concept were significantly related to academic achievement. For students in grade nine, that relationship was not evident in this study. Also, it should be noted that the non-academic dimensions of self-concept which were significantly correlated with achievement were not consistent across grade levels. For example, the prominent correlations of Popularity and Happiness and Satisfaction with achievement which were present for seventh-graders were not in evidence for the eleventh-grade subjects. By contrast, the students in grade 11 were the only subjects whose Physical Appearance and Attributes scores were significantly related to scholastic performance. Of all of the dimensions of self-concept, the academic self-concept was most consistently correlated with the various achievement criteria.

Analysis by social class. Correlations of self-concept subscale scores and both objective and subjective achievement criteria are given by social class in Tables 23 through 32. Examination of the correlations for Social Class I ( Tables 23

and 24) revealed that no subscale scores were consistently correlated with academic achievement criteria. The conduct of the Social Class I student seemed to be important insofar as teacher-assigned grades were concerned, however. The Piers-Harris Behavior scale correlations with grade point averages in mathematics (.31) and science (.30) were significant at the .05 level. There was also a significant negative relationship between Anxiety and English GPA ( $\underline{r} = -.32$ ,  $\underline{p} < .05$ ), indicating that the less anxious students in Social Class I tended to make higher grades in English. The SEI Social Self-Peers correlation with social studies GPA was also statistically significant ( $\underline{r} = .33$ ,  $\underline{p} < .05$ ).

As Table 24 reveals, no subscale of the Self-Esteem Inventory was significantly correlated with standardized test scores for Social Class I. The SCA was significantly related to only one achievement score, MAT social studies ( $\underline{r} = .34$ ,  $\underline{p} < .05$ ), and the Piers-Harris Intellectual and School Status subscale was significantly related only to the CAT language test ( $\underline{r} = .45$ ,  $\underline{p} < .05$ ). The Anxiety, Popularity, and Happiness subscales were also significantly and negatively correlated with science scores on the MAT ( $\underline{r} = -.32$ ,  $\underline{p} < .05$ ;  $\underline{r} = -.42$ ,  $\underline{p} < .01$ ; and  $\underline{r} = -.35$ ,  $\underline{p} < .05$ , respectively). There was also a significant negative correlation between popularity and MAT mathematics scores for subjects in the top social class. The data indicated that the less anxious tended

Table 23  
 Correlations of Specific Self-Concept Scores  
 and Teacher-Assigned Grades  
 for Social Class I

	Specific Subject GPA				
	Combined GPA	English	Math	Social Studies	Science
SCA <sup>a</sup>	.24	.17	.24	.21	.17
<u>Piers-Harris' CSCS<sup>b</sup></u>					
Behavior	.24	-.02	.31*	.30*	.17
Intellectual and School Status	.06	-.11	.07	.20	.02
Physical Appearance and Attributes	-.09	-.25	.007	.03	-.08
Anxiety	-.15	-.32*	.05	-.03	-.19
Popularity	-.13	-.37	.12	.06	-.24
Happiness and Satisfaction	.11	-.08	.25	.08	.10
<u>Coopersmith SEI<sup>c</sup></u>					
General Self	.03	-.17	.25	.03	-.07
Social Self	.29	.11	.23	.33*	.24
Home-Parents	.06	-.14	.26	.11	-.07
School-Academic	.05	.11	.02	.15	-.11

<sup>a</sup>n = 43.

<sup>b</sup>n = 42.

<sup>c</sup>n = 40.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Table 24

Correlations of Specific Self-Concept Scores and  
Achievement Test Scores for Social Class I

	<u>Metropolitan Achievement Test<sup>a</sup></u>				<u>Calif. Achieve. Test<sup>b</sup></u>	
	Reading	Math	Science	Social Studies	Reading	Language
<u>SCA</u>	.19	.27	.30	.34*	.22	.28
<u>Piers-Harris CSCS</u>						
Behavior	-.10	.07	-.24	.01	.09	.22
Intellectual and School Status	-.02	.005	.08	.18	-.03	.45*
Physical Appearance and Attributes	-.14	-.11	-.24	-.13	.09	.24
Anxiety	-.21	-.21	-.32*	-.20	-.27	-.05
Popularity	-.31	-.33*	-.42**	-.30	-.09	.12
Happiness and Satisfaction	-.12	.02	-.35*	-.09	.21	.40
<u>Coopersmith SEI</u>						
General Self	-.12	-.14	-.17	-.11	-.07	.36
Social Self	.10	.17	.11	.16	.16	.27
Home-Parents	-.13	-.08	-.10	.002	.10	.38
School-Academic	-.12	-.008	-.15	.08	.03	.18

<sup>a</sup><sub>n</sub> = 37.<sup>b</sup><sub>n</sub> = 21.\*  $p < .05$ .\*\*  $p < .01$ .

to make higher achievement test scores, and that the less popular and the less happy students in Social Class I tended to achieve at higher levels on standardized tests.

Considered for Social Class I alone, the correlations between self-concept subscale scores and the various achievement criteria did not follow any discernible pattern. Not only were the non-academic aspects of the self-concept unrelated to academic achievement, but the academic dimensions were also noticeably lacking in correlation.

Within Social Class II, however, both the SCA and the Piers-Harris Intellectual and School Status subscales were significantly related to all grade point averages. Ranging from .37 (science) to .56 (social studies), the SEI School-Academic and GPA Correlations were also significant, with the exception of that with the mathematics grade. As Table 25 reveals, many of the non-academic subscale correlations with GPA in a specific subject or with combined GPA were significant, but no subscales were as consistent across subject areas as were the Self-Concept of Ability Scale and the Piers-Harris Intellectual and School Status and SEI School-Academic subscales. For students in Social Class II, the SCA and all self-concept subscales except Piers-Harris Physical Appearance and SEI Home-Parents were significantly related to teacher-assigned grades in social studies.

The correlations for self-concept dimensions and standardized achievement criteria were similar to those for

Table 25

Correlations of Specific Self-Concept Scores  
and Teacher-Assigned Grades  
for Social Class II

	Specific Subject GPA				
	Combined GPA	English	Math	Social Studies	Science
<u>SCA<sup>a</sup></u>	.56***	.38**	.46***	.47***	.57***
<u>Piers-Harris CSCS<sup>b</sup></u>					
Behavior	.30*	.20	.22	.39**	.18
Intellectual and School Status	.43**	.30*	.32*	.49***	.32*
Physical Appearance and Attributes	.16	.08	.08	.26	.13
Anxiety	.20	.23	.01	.29*	.20
Popularity	.24	.37**	.007	.36**	.12
Happiness and Satisfaction	.29*	.21	.12	.38**	.28
<u>Coopersmith SEI<sup>c</sup></u>					
General Self	.33*	.24	.22	.38**	.29
Social Self	.29	.32*	.08	.44**	.15
Home-Parents	.18	.15	.15	.16	.16
School-Academic	.44**	.41**	.17	.56***	.37**

<sup>a</sup>n = 44.

<sup>b</sup>n = 46.

<sup>c</sup>n = 43.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

teacher-assigned grades, but the SCA-achievement test correlations were noticeably higher than those for grade point averages, suggesting that students' estimates of their own academic performance more nearly approximate the objective evaluations of their performance than the subjective evaluations recorded by their teachers.

With correlations ranging from .59 (MAT social studies) to .72 (CAT reading and CAT language), the SCA - achievement test correlations for Social Class II were the highest obtained in any subgroup. The Intellectual and School Status subscale was also significantly correlated with all standardized test scores except MAT science. While SEI School-Academic and MAT correlations, ranging from .46 (science) to .56 (reading, mathematics, and social studies), were significant at or beyond the .01 level, the SEI - CAT correlations of .41 (reading) and .34 (language) were not statistically significant. The SEI General Self correlations with achievement test scores were also significant, except with CAT language, and were generally consistent across the various tests (Table 26).

In contrast to the subjects in Social Class I, those in the second social class who viewed themselves as more popular tended to have better MAT scores in mathematics ( $\underline{r} = .53$ ,  $\underline{p} < .001$ ) and science ( $\underline{r} = .31$ ,  $\underline{p} < .05$ ). The SEI Social Self-Peers subscale was also related to achievement in mathematics ( $\underline{r} = .43$ ,  $\underline{p} < .001$ ) and social studies ( $\underline{r} = .32$ ,  $\underline{p} < .05$ ).

Table 26

Correlations of Specific Self-Concept Scores and  
Achievement Test Scores for Social Class II

	Metropolitan Achievement Test <sup>a</sup>				Calif. Achieve. Test <sup>b</sup>	
	Reading	Math	Science	Social Studies	Reading	Language
<u>SCA</u>	.62***	.65***	.54***	.59***	.72***	.72***
<u>Piers-Harris CSCS</u>						
Behavior	.10	.18	.05	.17	.18	.30
Intellectual and School Status	.38*	.41**	.27	.37*	.51*	.57**
Physical Appearance and Attributes	.29	.50	.37*	.35*	.09	.17
Anxiety	.15	.26	.29	.31	.12	.09
Popularity	.25	.53***	.29	.31*	.002	-.03
Happiness and Satisfaction	-.009	.09	.06	.10	-.11	-.05
<u>Coopersmith SEI</u>						
General Self	.35*	.44**	.37*	.39*	.51*	.39
Social Self	.25	.43**	.29	.32*	-.06	.13
Home-Parents	.07	.09	.03	.07	.48*	.24
School-Academic	.56***	.56***	.46**	.56***	.41	.34

<sup>a</sup><sub>n</sub> = 39.<sup>b</sup><sub>n</sub> = 21.

\* p < .05.  
 \*\* p < .01.  
 \*\*\* p < .001.



Although SEI Home-Parents scores were not significantly related to any of the subjective achievement criteria or to any part of the MAT, they were significantly related to CAT reading scores ( $\underline{r} = .48, \underline{p} < .05$ ).

As a group, subjects in Social Class II apparently were able to estimate fairly well their own academic performance, as indicated by their academic self-concept scores. There was a tendency for the more anxious student in this study to have better grades, but popularity and social relations were also related to grade point average in English and social studies and to performance on mathematics and social studies achievement tests. For students in the upper middle class, evaluation of the general self appeared to be very closely related to academic performance.

For Social Class III subjects, as Tables 27 and 28 indicate, the Self-Concept of Ability Scale and the Piers-Harris Intellectual and School Status subscale were positively and significantly correlated with all achievement criteria, both subjective and objective. SEI School-Academic scores bore a significant relationship with only two of the standardized tests--MAT reading ( $\underline{r} = .26, \underline{p} < .01$ ) and MAT mathematics ( $\underline{r} = .23, \underline{p} < .05$ ). The SEI School-Academic correlations with teacher-assigned grades were much higher, ranging from .32 (mathematics GPA) to .45 (combined GPA); all were significant at or beyond the .001 level of confidence. The last trend might be a result of the middle class value system

Table 27  
 Correlations of Specific Self-Concept Scores  
 and Teacher-Assigned Grades  
 for Social Class III

	Specific Subject GPA				
	Combined GPA	English	Math	Social Studies	Science
<u>SCA<sup>a</sup></u>	.57***	.51***	.24**	.62***	.54***
<u>Piers-Harris CSCS<sup>b</sup></u>					
Behavior	.42***	.32***	.17	.47***	.41***
Intellectual and School Status	.54***	.47***	.30***	.50***	.53***
Physical Appearance and Attributes	.04	.12	-.10	.06	.06
Anxiety	.19*	.11	.07	.26**	.15
Popularity	.18	.17	.08	.17	.15
Happiness and Satisfaction	.14	.16	-.001	.18	.11
<u>Coopersmith SEI<sup>c</sup></u>					
General Self	.32***	.20*	.08	.42***	.32***
Social Self	.08	.08	.01	.08	.09
Home-Parents	.35***	.26**	.21*	.40***	.28**
School-Academic	.45***	.33***	.32***	.40***	.43***

<sup>a</sup>n = 118.

<sup>b</sup>n = 116.

<sup>c</sup>n = 117.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Table 28

Correlations of Specific Self-Concept Scores and  
Achievement Test Scores for Social Class III

	Metropolitan Achievement Test <sup>a</sup>			Social Studies	Calif. Achieve. Test <sup>b</sup>	
	Reading	Math	Science		Reading	Language
SCA	.53***	.53***	.47***	.54***	.69***	.45**
<u>Piers-Harris CSCS</u>						
Behavior	.18	.19	.18	.12	.22	.34*
Intellectual and School Status	.32***	.40***	.26**	.33***	.52***	.48***
Physical Appearance and Attributes	.13	.23*	.17	.16	.29	.09
Anxiety	.17	.10	.13	.06	.11	.15
Popularity	.20*	.19	.15	.16	.11	.04
Happiness and Satisfaction	.04	.07	.05	-.02	.10	.06
<u>Coopersmith SEI</u>						
General Self	.32***	.35***	.25**	.22*	.46**	.30*
Social Self	.12	.19	.13	.17	.24	.15
Home-Parents	.06	.13	.003	-.01	.17	.34
School-Academic	.26**	.23*	.15	.18	.21	.28

<sup>a</sup><sub>n</sub> = 102 (SCA), 100 (PH), and 101 (SEI).

<sup>b</sup><sub>n</sub> = 43.

\*  $p < .05$ .  
 \*\*  $p < .01$ .  
 \*\*\*  $p < .001$ .

which stresses the need to achieve in school. Parents in Social Class III are more likely to encourage their children to make good grades. A high score on Home-Parents indicates that a student views his or her family relationships positively. In some instances, making good grades may represent an effort on the student's part to please his or her parents. Or, conversely, such students may have more harmonious relationships with their parents when they are making good grades; poor academic performance could well be a source of friction in middle class homes.

While Piers-Harris Behavior scores were significantly correlated with only one of the standardized achievement criteria (CAT language), they were significantly related to all of the subjective achievement indicators except GPA in mathematics. This trend may once again reflect the difficulty which teachers face in eliminating subjective biases as they assign grades. Anxiety scores were significantly related to both combined GPA ( $\underline{r} = .19, \underline{p} < .05$ ) and to social studies GPA ( $\underline{r} = .26, \underline{p} < .01$ ).

SEI General Self scores showed a strong and statistically significant relationship with all of the standardized test scores for Social Class III subjects, and they were also significantly related to all grade point averages except in mathematics. As was true of students in Social Class II, those in Social Class III seemed to evaluate themselves as persons in accordance with their performance as students.

In contrast to those in the higher social classes, middle class subjects' behavior was related to their grade point average, suggesting that the better behaved student achieves at higher academic levels (or is rewarded by his teachers with higher grades). Despite the relationship of the non-academic aspects of self, for subjects in the middle social class, the academic aspects were the ones which were most consistently and significantly related to grade point average.

Although the Social Class IV sample was comparable in size to that for Social Class III, the correlational patterns of the two classes were quite different. (See Tables 29 and 30.) Typically, the SCA and Piers-Harris Intellectual and School Status correlations with both standardized test scores and teacher-assigned grades were generally significant, but the SEI School-Academic correlations with achievement were significant only for combined GPA ( $\underline{r} = .19, \underline{p} < .05$ ) and science GPA ( $\underline{r} = .23, \underline{p} < .01$ ). None of the SEI School-Academic and achievement test correlations were significant. On the other hand, SEI General Self scores were significantly correlated with all of the standardized achievement criteria except CAT reading. Once again, Piers-Harris Behavior was related to GPA in social studies ( $\underline{r} = .26, \underline{p} < .01$ ), science ( $\underline{r} = .22, \underline{p} < .05$ ), and combined GPA ( $\underline{r} = .21, \underline{p} < .05$ ). The significant correlations between the SEI Home-Parents subscale and academic achievement which characterized Social Class III were missing in Social Class IV.

Table 29  
 Correlations of Specific Self-Concept Scores  
 and Teacher-Assigned Grades  
 for Social Class IV

	Combined English GPA	Math	Social Studies	Science
<u>SCA<sup>a</sup></u>	.46***	.33***	.36***	.42***
<u>Piers-Harris CSCS<sup>b</sup></u>				.44***
Behavior	.21*	.03	.17	.26**
Intellectual and School Status	.29**	.17	.24**	.25**
Physical Appearance and Attributes	.04	-.03	.06	-.01
Anxiety	-.06	-.14	-.14	.02
Popularity	.007	.06	.03	.01
Happiness and Satisfaction	.11	.04	.004	.16
<u>Coopersmith SEI<sup>c</sup></u>				.12
General Self	.10	-.007	.06	.16
Social Self	.13	.09	.08	.16
Home-Parents	.15	.07	.05	.21
School-Academic	.19*	.05	.17	.17

<sup>a</sup>n = 109.

<sup>b</sup>n = 101.

<sup>c</sup>n = 110.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Table 30

Correlations of Specific Self-Concept Scores and  
Achievement Test Scores for Social Class IV

	Metropolitan Achievement Test <sup>a</sup>				Calif. Achieve. Test <sup>b</sup>	
	Reading	Math	Science	Social Studies	Reading	Language
<u>SCA</u>	.28**	.30**	.27**	.35***	.54*	.51*
<u>Piers-Harris CSCS</u>						
Behavior	.16	.18	.15	.14	-.02	.09
Intellectual and School Status	.28**	.27**	.25**	.26**	.44	.48*
Physical Appearance and Attributes	.05	.04	.007	.05	.29	.33
Anxiety	-.03	.02	-.02	-.03	.33	.42
Popularity	.003	.03	-.01	-.04	.24	.29
Happiness and Satisfaction	.03	.11	.03	.007	.13	.18
<u>Coopersmith SEI</u>						
General Self	.22*	.28**	.20*	.26**	.40	.51*
Social Self	.20*	.18	.19	.14	.39	.44*
Home-Parents	.14	.16	.11	.10	.08	.27
School-Academic	.12	.14	.14	.18	.13	.20

<sup>a</sup> $\underline{n}$  = 99 (SCA), 100 (PH), and 98 (SEI).

<sup>b</sup> $\underline{n}$  = 20 (SCA), 19 (PH), and 20 (SEI).

\*  $p < .05$ .  
 \*\*  $p < .01$ .  
 \*\*\*  $p < .001$ .

Examination of the data for Social Class IV revealed that the only consistently correlated subscales were those for the SCA and the Piers-Harris Intellectual and School Status subscale, lending some support to Hypothesis II. Yet, the absence of such a trend for the SEI School-Academic subscale once again raises the question as to the ability of the SEI subscales to discriminate among the various aspects of the self. The higher correlations for the SEI General Self indicated (at least for that instrument) that Class IV subjects' feelings about the total self were more significantly related to scholastic performance than were perceptions of academic ability. Yet, for Class IV subjects, non-academic aspects of the self-concept, as measured by the Piers-Harris and the SEI (with the exception of General Self) appeared to be unrelated to academic performance.

It was somewhat difficult to find definite trends in the correlations between the various self-concept dimensions and teacher-assigned grades for Social Class V subjects. (See Table 31.) The SCA correlations with grade point averages were all statistically significant. Piers-Harris Intellectual and School Status and SEI School-Academic scores were significantly related to combined GPA ( $\underline{r} = .46$  and  $.44$ ,  $\underline{p} < .01$ ) and mathematics GPA ( $\underline{r} = .66$  and  $.60$ ,  $\underline{p} < .001$ ). All of the subscales except SEI General Self and Home-Parents were significantly related to grade point average in mathematics, however.



Table 31

Correlations of Specific Self-Concept Scores  
and Teacher-Assigned Grades  
for Social Class V

	Combined English GPA	Math	Social Studies	Science
SCA <sup>a</sup>	.51***	.38***	.48***	.46**
<u>Piers-Harris CSCS<sup>b</sup></u>				
Behavior	.18	-.07	.52***	.02
Intellectual and School Status	.46**	.26	.66***	.29
Physical Appearance and Attributes	.08	-.07	.38**	-.005
Anxiety	.05	-.09	.43**	-.17
Popularity	-.04	-.18	.37*	-.14
Happiness and Satisfaction	.05	-.13	.32*	-.10
<u>Coopersmith SEI<sup>c</sup></u>				
General Self	-.01	-.14	.25	-.12
Social Self	.02	-.12	.36*	-.08
Home-Parents	.05	-.12	.31	-.15
School-Academic	.44**	.27	.60***	.22

<sup>a</sup> $\underline{n} = 42.$

<sup>b</sup> $\underline{n} = 41.$

<sup>c</sup> $\underline{n} = 41.$

\*  $p < .05.$

\*\*  $p < .01.$

\*\*\*  $p < .001.$

For the subjects in Social Class V, the SCA - achievement correlations were not significant across the different tests, as Table 32 indicates. Significant correlations were found only for MAT reading ( $\underline{r} = .44, \underline{p} < .01$ ), mathematics ( $\underline{r} = .38, \underline{p} < .05$ ), and social studies ( $\underline{r} = .35, \underline{p} < .05$ ). Piers-Harris Intellectual and School Status scores were significantly related to all of the MAT scores, but not to the CAT. (The number of students in Social Class V who had CAT scores was only 8, so the results would be of little statistical consequence.) MAT reading scores were related to Piers-Harris Behavior ( $\underline{r} = .49, \underline{p} < .01$ ), Popularity ( $\underline{r} = .33, \underline{p} < .05$ ), and SEI General Self ( $\underline{r} = .44, \underline{p} < .01$ ), as well as to the Piers-Harris and SEI academic subscales. Piers-Harris Behavior scores were also significantly correlated with MAT science scores ( $\underline{r} = .38, \underline{p} < .05$ ), as were the SEI General Self scores ( $\underline{r} = .35, \underline{p} < .05$ ). The Home-Parents subscale was not related to either objective or subjective standards of achievement for the Social Class V subjects included in this study.

For subjects in Social Class V, no one measure of self-concept was consistently correlated with all achievement criteria. Yet, students' estimates of their academic ability, as indicated by SCA scores, were significantly correlated with all grade point averages, as well as all MAT scores except science. The data revealed that subjects in the lowest social class were comparable to those in classes II, III, and

Table 32

Correlations of Specific Self-Concept Scores and  
Achievement Test Scores for Social Class V

Instrument	Metropolitan Achievement Test <sup>a</sup>				Calif. Achieve. Test <sup>b</sup>	
	Reading	Math	Science	Social Studies	Reading	Language
SCA	.44**	.38*	.28	.35*	.16	.23
<u>Piers-Harris CSCS</u>						
Behavior	.49**	.31	.38*	.25	-.09	-.55
Intellectual and School Status	.59***	.38*	.43**	.34*	.67	.51
Physical Appearance and Attributes	.23	.20	.18	-.008	.37	.34
Anxiety	.30	.13	.22	.13	-.21	-.19
Popularity	.33*	.18	.27	.06	-.01	-.11
Happiness and Satisfaction	.28	.05	.19	.11	.06	-.03
<u>Coopersmith SEI</u>						
General Self	.44**	.29	.35*	.17	.17	-.30
Social Self	.24	.26	.22	.03	.31	.23
Home-Parents	.21	-.0003	.14	-.009	-.13	.10
School-Academic	.37*	.23	.26	.25	.18	-.28

<sup>a</sup> $\underline{n}$  = 39 (SCA), 38 (PH), and 38 (SEI).

<sup>b</sup> $\underline{n}$  = 8.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

IV in their ability to assess their academic performance in relation to that of their peers. Unlike the data for their counterparts in the two classes immediately above them, the statistics for Class V subjects did not reflect strong family influence on academic achievement. The evidence indicated that the more positive the lower class student's perception of home and family, the poorer his or her academic performance was apt to be. For the most part, data for subjects in the lowest socioeconomic class suggested that success in school was not a significant factor in students' self-evaluations.

In summary, the data for the total sample, when considered collectively, did not support the hypothesis that only the academic self-concept is significantly related to academic achievement, but there was some evidence that within particular subgroups that tendency does occur. When correlations between the various dimensions of the self-concept, academic and non-academic, were examined independently by the subgroups included in this study, there were differences in the relationship between self-concept and achievement.

When the scores of blacks were considered alone, for example, the hypothesis gained support; for the black subjects in this study, only the academic dimensions of self-concept were significantly related to scholastic performance. Subjects in the ninth grade, as a separate group, also manifested the same trend. The correlations by sex and social

class were mixed, but even in most of these groups, the strongest and most significant correlations were between the academic self-concept and academic achievement.

The one measure of self-concept which was significantly correlated with achievement for both the total sample and for every subgroup (except Social Class I) was the Self-Concept of Ability. As a measure of academic self-concept, it was strongly related to actual performance in school. Both the Piers-Harris and the SEI subscales which attempt to assess academic self-concept showed a noticeably stronger relationship with academic achievement criteria than did the non-academic subscales. Despite these trends, however, the evidence suggests that other, non-academic, aspects of the self-concept are related to some extent to academic achievement. The pattern of those relationships is very hard to predict, though, and no really definite, consistent trends emerged in this study.

#### Intellective Versus Non-intellective Predictors Of Achievement

The third research question considered in this study asked whether intellective variables (intelligence test scores) and non-intellective variables (self-concept scores) are equally valid predictors of academic achievement. Hypothesis III stated that intellective variables are more accurate predictors of academic achievement.

Because the correlations between the scores for the various non-academic self-concept measures and achievement were considered in relation to the second hypothesis, those correlations will not be repeated here. However, for the reader's convenience, Tables 33 and 34 show the correlations of global self-concept and academic self-concept with academic achievement, as indicated by teacher-assigned grades and standardized achievement test scores for the total sample. While all of the correlations were sufficiently strong to be considered statistically significant, the most impressive correlations were those for the Self-Concept of Ability Scale and the various achievement criteria. With most correlations in the .50s, the SCA would seem to be a somewhat better predictor than would either the Piers-Harris or SEI academic self-concept or global self-concept scores. With the exception of the SEI - standardized achievement correlations, the academic self-concept scales followed the SCA in magnitude of correlations, with the global self-concept having generally lower correlations.

Table 35 shows the correlations between intelligence test scores and academic achievement. The Cognitive Abilities Test yields three IQ scores (verbal, quantitative, and nonverbal), so correlations are given for all three dimensions of intelligence. All correlations were significant at or beyond the .001 level of confidence, and they were consistently of greater magnitude than were the Piers-Harris

Table 33

Correlations of Global Self-Concept  
and Academic Self-Concept Scores  
with Teacher-Assigned Grades  
(Total Sample)<sup>a</sup>

	Combined GPA	English	Math	Social Studies	Science
Piers-Harris Total	.26	.14 (<.01)	.22	.26	.23
SEI Total	.28	.15 (<.01)	.22	.30	.26
SCA	.56	.45	.38	.55	.52
PH Intellectual and School Status	.43	.31	.35	.40	.39
SEI School-Academic	.37	.27	.29	.34	.34

Note. All correlations are significant at .001 level unless indicated otherwise.

<sup>a</sup>n = 353 (PH Total and Intellectual and School), 354 (SEI Total and SEI School), and 358 (SCA).

Table 34

Correlations of Global Self-Concept and Academic  
Self-Concept Scores With Achievement Test  
Scores (Total Sample)

	<u>Metropolitan Achievement Test<sup>a</sup></u>				<u>Calif. Achieve. Test<sup>b</sup></u>	
	Reading	Math	Science	Social Studies	Reading	Language
Piers-Harris Total	.23	.25	.21	.20	.26 (<.01)	.30
SEI Total	.31	.33	.26	.26	.31	.31
SCA	.52	.51	.42	.54	.67	.59
PH Intellectual and School Status	.36	.37	.31	.35	.50	.55
SEI School-Academic	.29	.29	.24	.29	.25 (<.01)	.30

Note. All correlations are significant at or beyond the .001 level unless indicated otherwise.

<sup>a</sup>n = 312 (PH Total and PH Intellectual and School), 313 (SEI Total and SEI School), and 316 (SCA).

<sup>b</sup>n = 112 (PH Total and PH Intellectual and School), 113 (SEI Total and SEI School), and 113 (SCA).



Table 35

Correlations of IQ Scores and Achievement Criteria  
(Total Sample)

	Cognitive Abilities Test		
	Verbal	Quantitative	Nonverbal
<u>Teacher-Assigned Grades<sup>a</sup></u>			
Combined GPA	.66	.64	.55
Specific Subject GPA			
English	.54	.52	.42
Mathematics	.47	.46	.42
Social Studies	.61	.62	.52
Science	.61	.58	.51
<u>Metropolitan Achievement</u>			
Test <sup>b</sup>			
Reading	.77	.72	.67
Mathematics	.67	.82	.73
Science	.71	.69	.63
Social Studies	.73	.73	.65
<u>California Achievement</u>			
Test <sup>c</sup>			
Reading	.83	.71	.70
Language	.73	.72	.59

Note. All correlations are significant at .001 level.

$a_n = 338.$

$b_n = 318.$

$c_n = 108$  (eleventh grade only.)

or SEI self-concept correlations with academic achievement criteria.

Insofar as teacher-assigned grades were concerned, the verbal IQ generally showed a higher correlation with both combined GPA and specific subject GPA than did either the quantitative or nonverbal intelligence scores. Because verbal ability is basic to understanding any academic subject, as well as to performing at a high level on tests, it is not surprising that verbal IQ scores were also more strongly related to the various standardized tests than were the quantitative and nonverbal dimensions of IQ. (An exception, and reasonably so, was the correlation of .82 between quantitative IQ and MAT mathematics test scores.) With IQ - combined GPA correlations ranging from .55 (nonverbal IQ) to .66 (verbal IQ) and with IQ and achievement test correlations from .59 (nonverbal IQ - CAT language) to .83 (verbal IQ - CAT reading), the intellectual variables would seem to be better predictors of academic achievement than would the non-intellectual ones.

Although the IQ - GPA correlations were high, they were not so high as those for IQ scores and achievement test scores. Several factors may be involved. There is a possibility of teacher-bias in the assignment of grades. Some students may be "underachievers" to the point that their mental ability level is not reflected in their grade point averages. Perhaps a more important consideration is that the

Cognitive Abilities Test and the Metropolitan and California achievement tests are standardized instruments which are administered under rather formal conditions. Test sophistication, as well as attitudes toward standardized tests would probably have similar bearings on both types of tests. In addition, there is some debate as to whether intelligence tests may truly be considered scholastic aptitude tests or whether they are, in reality, a kind of achievement work.

Despite such debate, however, the data strongly support the hypothesis that intellectual variables are better predictors of academic achievement than are non-intellectual ones. Granted, students' overall self-concepts were related to their scholastic performance, but that relationship was not nearly so strong, consistent, or significant as that between measured mental ability and academic achievement. The analysis of self-concept data not only for the total sample, but more noticeably for the various race, sex, grade, and socioeconomic subgroups, revealed far greater variations in the correlational patterns with academic achievement criteria than were evident in the IQ - achievement data. The differences in the magnitude of correlations of the two types of instruments provide even further evidence on behalf of the intellectual variables.

Analysis by sex. Table 36 shows the correlations between IQ scores and the various achievement criteria by sex. All of the correlations were significant for both sexes,

Table 36  
Correlations of IQ Scores and Achievement Criteria  
By Sex

	<u>Cognitive Abilities Test</u>					
	Verbal		Quantitative		Nonverbal	
	Male	Female	Male	Female	Male	Female
<u>Teacher-Assigned Grades</u> <sup>a</sup>						
Combined GPA	.63	.70	.65	.68	.55	.61
English GPA	.54	.56	.59	.51	.46	.43
Mathematics GPA	.40	.52	.46	.50	.39	.49
Social Studies GPA	.59	.64	.59	.69	.50	.57
Science GPA	.62	.61	.60	.60	.52	.55
<u>Metropolitan Achievement Test</u> <sup>b</sup>						
Reading	.75	.79	.69	.75	.64	.70
Mathematics	.67	.67	.79	.84	.70	.76
Science	.67	.75	.62	.75	.58	.69
Social Studies	.71	.76	.69	.77	.60	.69
<u>California Achievement Test</u> <sup>c</sup>						
Reading	.91	.78	.75	.68	.72	.69
Language	.85	.64	.85	.63	.75	.49

Note. All correlations are significant at or beyond the .001 level of confidence unless indicated otherwise.

<sup>a</sup>n = 141 males and 197 females.

\* p < .05.

<sup>b</sup>n = 136 males and 174 females.

\*\* p < .01.

<sup>c</sup>n = 40 males and 68 females.

\*\*\* p < .001.

but on combined GPA, specific subject GPA, and all MAT scores except mathematics, the correlations were higher for females than for males. The opposite was true for CAT reading and language scores. Correlations by sex generally followed the pattern of the sample as a whole. As compared with the non-intellective variables, the IQ scores exhibited much more consistent correlational patterns for both males and females. Not only were the correlations statistically significant, but there were very few differences by sex.

Analysis by race. Correlations by race (Table 37) provided little additional information. While the difference in sample size complicates the comparison of the magnitude of correlations, the trends were similar to those for the total sample. Intelligence test score correlations with grade point averages and with the CAT were somewhat higher for blacks than for whites, whereas IQ - MAT scores were generally lower for blacks than for whites. Unlike the self-concept instruments, which produced significant race differences in correlations with achievement, the IQ scores were generally comparable for blacks and whites.

Analysis by grade level. Tables 38 and 39 show the IQ - achievement correlations for each of the grade levels. The correlations for all of the grade levels were comparable for standardized test scores, but there were differences in the relationship between intelligence test scores and

Table 37  
Correlations of IQ Scores and Achievement Criteria  
By Race

	<u>Cognitive Abilities Test</u>					
	Verbal		Quantitative		Nonverbal	
	White	Black	White	Black	White	Black
<u>Teacher-Assigned Grades<sup>a</sup></u>						
Combined GPA	.56	.76	.57	.66	.49	.53
Specific Subject GPA						
English	.46	.59	.44	.53	.35	.36 (<.01)
Mathematics	.41	.58	.42	.47	.37	.51
Social Studies	.54	.62	.55	.65	.45	.49
Science	.49	.74	.50	.57	.45	.41
<u>Metropolitan Achievement Test<sup>b</sup></u>						
Reading	.72	.67	.67	.57	.62	.55
Mathematics	.63	.47	.79	.76	.69	.70
Science	.64	.61	.64	.54	.57	.53
Social Studies	.68	.62	.69	.64	.59	.56
<u>California Achievement Test<sup>c</sup></u>						
Reading	.77	.89	.61	.85	.61	.76
Language	.64	.88	.63	.83 (<.01)	.48	.80 (<.01)

Note. All correlations are significant at or beyond the .001 level unless indicated otherwise.

<sup>a</sup>n = 279 whites and 59 blacks.

<sup>b</sup>n = 250 whites and 55 blacks.

<sup>c</sup>n = 97 whites and 11 blacks (eleventh grade only).

Table 38

Correlations of IQ Scores and Teacher-Assigned Grades  
by Grade Level

	Combined English GPA	Math	Social Studies	Science	
<u>Cognitive Abilities Test<sup>a</sup></u>					
<u>Verbal</u>					
Grade 7	.66	.51	.55	.65	.58
Grade 9	.54	.53	.38	.43	.45
Grade 11	.72	.61	.46	.67	.74
<u>Quantitative</u>					
Grade 7	.66	.53	.53	.67	.54
Grade 9	.47	.49	.26 (.01)	.43	.38
Grade 11	.76	.60	.57	.68	.77
<u>Nonverbal</u>					
Grade 7	.58	.42	.52	.56	.49
Grade 9	.47	.45	.33	.37	.38
Grade 11	.62	.45	.44	.55	.66

Note. All correlations are significant at or beyond the .001 level unless indicated otherwise.

<sup>a</sup><sub>n</sub> = 117 (grade 7), 103 (grade 9), and 118 (grade 11).

Table 39  
Correlations of IQ Scores and Achievement Test Scores  
by Grade Level

	<u>Metropolitan Achievement Test</u>				<u>Calif. Achieve. Test</u>	
	Reading	Math	Science	Social Studies	Reading	Language
<u>Cognitive Abilities Test</u>						
<u>Verbal</u>						
Grade 7 <sup>a</sup>	.81	.74	.79	.80	----	----
Grade 9 <sup>b</sup>	.88	.72	.77	.77	----	----
Grade 11 <sup>c</sup>	.89	.79	.81	.84	.83	.73
<u>Quantitative</u>						
Grade 7	.67	.86	.66	.74	----	----
Grade 9	.71	.81	.67	.70	----	----
Grade 11	.75	.85	.72	.73	.71	.72
<u>Nonverbal</u>						
Grade 7	.63	.74	.58	.63	----	----
Grade 9	.63	.71	.61	.65	----	----
Grade 11	.74	.79	.70	.64	.70	.59

Note. All correlations are significant at or beyond the .001 level.

<sup>a</sup>n = 109 (MAT only).

<sup>b</sup>n = 99 (MAT only).

<sup>c</sup>n = 118 (MAT) and 97 (CAT).



teacher-assigned grades. Subjects in the seventh and eleventh grades had similar correlations between measured mental ability and grade point averages. With the exception of the correlations of English GPA with verbal and nonverbal IQ, however, the correlations between IQ and teacher-assigned grades were noticeably lower (although still statistically significant) for ninth-graders than were those for seventh- and eleventh-grade subjects. It would appear that some influence was operating with the ninth-graders and their grade point averages which did not enter into standardized achievement testing. One possible explanation is that the students were, for whatever reason, simply not working up to their apparent ability levels or that subjective factors were influencing grade point averages.

Data for the three different grade levels provide further support for the hypothesis that the intellectual variables surpass the non-intellectual ones in the prediction of academic performance. While there were, as previously indicated, departures from the overall trend for the ninth-graders' IQ scores and teacher-assigned grades, the IQ - standardized test correlations were comparably consistent for all grade levels.

Analysis by social class. As Tables 40 and 41 indicate, there were social class trends which departed from those of the total sample. Although IQ scores and combined GPA were significantly correlated for all social classes, there were

Table 40

Correlations of IQ Scores and Teacher-Assigned Grades  
by Social Class

	Teacher-Assigned Grades				
	Combined GPA	English	Math	Social Studies	Science
<u>Cognitive Abilities Test<sup>a</sup></u>					
<u>Verbal</u>					
Social Class I	.32*	.21 (ns)	.27 (ns)	.21 (ns)	.34*
II	.58	.49	.45**	.50	.62
III	.54	.41	.39	.57	.44
IV	.68	.56	.52	.61	.62
V	.72	.59	.51	.63	.64
<u>Quantitative</u>					
Social Class I	.57	.43**	.44**	.45**	.53
II	.49	.36*	.40**	.43**	.53
III	.57	.42	.47	.58	.44
IV	.57	.42	.41	.57	.53
V	.70	.64	.40**	.69	.55
<u>Nonverbal</u>					
Social Class I	.55	.32*	.44**	.44**	.56
II	.31*	.23 (ns)	.20 (ns)	.27 (ns)	.41**
III	.49	.34	.44	.46	.40
IV	.52	.37	.44	.48	.46
V	.35*	.30 (ns)	.26 (ns)	.42 (ns)	.20 (ns)

Note. All correlations are significant at or beyond .001 level unless indicated otherwise.

<sup>a</sup><sub>n</sub> = 42, 44, 110, 103, and 39 for Social Classes I-V, respectively.

\*  $p < .05$ .

\*\*  $p < .01$ .

Table 41  
Correlations of IQ Scores and Achievement Test Scores  
by Social Class

	Metropolitan Achievement Test <sup>a</sup>				Calif. Achieve. Test <sup>b</sup>	
	Reading	Math	Science	Social Studies	Reading	Language
<u>Cognitive Abilities Test</u>						
<u>Verbal</u>						
Social Class I	.51	.44**	.34*	.55	.87	.69
II	.72	.50	.59	.70	.81	.69
III	.75	.64	.62	.65	.64	.51
IV	.76	.65	.79	.73	.90	.79
V	.53	.45**	.38*	.45**	.79**	.42 (ns)
<u>Quantitative</u>						
Social Class I	.63	.77	.54	.76	.70	.44*
II	.68	.79	.64	.66	.76	.79
III	.64	.74	.59	.64	.48	.54
IV	.65	.82	.64	.69	.72	.67**
V	.53	.72	.50**	.59	.36 (ns)	.76*
<u>Nonverbal</u>						
Social Class I	.69	.83	.59	.73	.71	.63**
II	.55	.69	.50	.49	.60**	.57**
III	.56	.58	.50	.49	.51	.23 (ns)
IV	.59	.69	.58	.63	.68**	.57**
V	.53	.72	.50**	.59	.36 (ns)	.76*

Note. Correlations are significant at the .001 level unless indicated otherwise.

<sup>a</sup>n = 37, 39, 97, 94, and 38 for Social Classes I-V, respectively.

<sup>b</sup>n = 21, 20, 42, 18, and 7 for Social Classes I-V, respectively.

\*  $p < .05$ .

\*\*  $p < .01$ .

some specific subject departures within socioeconomic classes. For example, in Social Class I, the correlations between verbal IQ and GPA in English, mathematics, and social studies GPA were not significant. The same was true of the nonverbal IQ and English, mathematics, and science GPA for classes II and V. Other departures were noted for CAT scores for Social Class V, but the number of subjects involved was so small that inferences would be of little value. Generally, however, the analysis by social class was also supportive of the hypothesis that intellectual variables are more reliable predictors of academic performance than are non-intellectual variables.

Examination of the simple correlations of the intellectual variables with the various achievement criteria, then, showed that they were not only stronger for the total sample but that they also were more consistent across the various subgroups than were those between the non-intellectual variables and achievement criteria. Therefore, the correlational data compiled in this study support the hypothesis that intelligence test scores are better predictors of academic achievement than are either global self-concept or academic self-concept scores. Of the non-intellectual variables, however, the Self-Concept of Ability Scale proved to be by far the best predictor both for the total sample and for race, sex, grade, and socioeconomic subgroups.

Stepwise multiple regression analysis of prediction of academic achievement. So that the relative value of intellectual variables as predictors of academic achievement might be examined even further, the data were subjected to stepwise multiple regression analysis. This computer process, which is a part of the Statistical Package for the Social Sciences, enters selected variables into a prediction equation in the order of their relative contribution to the prediction of a given set of scores. Summaries of the results of the use of stepwise multiple regression analysis in the prediction of combined grade point average and the various achievement test scores are given in Tables 42 through 48.

Based on the hypothesis that IQ scores are better predictors of academic achievement than are self-concept scores, the three IQ measures were programmed so as to be entered into the regression equation in the first three steps, followed by the three indicators of academic self-concept (Self-Concept of Ability Scale, Piers-Harris Intellectual and School Status, and SEI School-Academic scores) and finally, the global self-concept scores on the Piers-Harris CSCS and the Coopersmith SEI. The summary tables indicate, however, that the relative contributions of each of the measures did not adhere strictly to that order.

Prediction of combined GPA. Table 42 shows the summary of stepwise multiple regression analysis of the prediction of combined GPA by using the various intellectual and

Table 42

Stepwise Multiple Regression Analysis of Prediction  
of Combined GPA from IQ, Global Self-Concept,  
and Academic Self-Concept Scores

Independent Variable	Multiple R	R <sup>2</sup>	Increment in R <sup>2</sup>	df	F	P	Beta Weight
1-Verbal IQ	.655	.429	.429	1/330	24.72	.01	.300
2-Quantitative IQ	.694	.482	.053	2/329	12.234	.01	.239
3-PH Intellectual and School Status	.721	.520	.038	3/328	12.943	.01	.250
4-Nonverbal IQ	.721	.520	.001	4/327	.674	ns	.051
5-SCA	.730	.532	.012	5/321	6.439	.01	.137
6-SEI School-Academic	.731	.535	.003	6/325	5.570	.01	.132
7-Piers-Harris Total	.741	.549	.014	7/324	3.501	.01	-.155
8-SEI Total	.742	.550	.001	8/323	.934	ns	-.071

non-intellective variables. In the prediction of the combined GPA (average based on grades in English, mathematics, science, and social studies), verbal and quantitative IQ scores together accounted for 48% of the variance in scores; the multiple correlation of grade point average with verbal and quantitative IQ was .69. Adding the Piers-Harris Intellectual and School Status scores to the prediction equation increased the multiple correlation to .72 and resulted in an increase of 3.8% in the amount of variance accounted for. Only nonverbal IQ scores and SEI total scores made nonsignificant contributions to the equation. Verbal IQ appeared to carry the greatest weight and to have the greatest power of prediction of combined GPA, but the Piers-Harris Intellectual and School Status subscale also made an important contribution to the multiple regression, providing additional support for the position that academic self-concept is significantly related to academic performance.

Prediction of MAT scores. In the prediction of MAT reading scores from intelligence test scores and both academic self-concept scores, none of the non-intellective variables made more than a negligible contribution. (See Table 43.) The three measures of IQ provided a multiple correlation of .806 and accounted for 65% of the variance of MAT reading scores. Entering all of the academic self-concept and global self-concept scores resulted in a multiple correlation of .816 and raised the amount of variance accounted for

Table 43

Stepwise Multiple Regression Analysis of Prediction  
of MAT Reading Scores from IQ, Global Self-Concept,  
and Academic Self-Concept Scores

Independent Variable	Multiple R	R <sup>2</sup>	Increment in R <sup>2</sup>	df	F	P	Beta Weight
1- Verbal IQ	.77	.597	.597	1/303	68.97	.01	.452
2- Quantitative IQ	.802	.644	.047	2/302	11.7	.01	.210
3- Nonverbal IQ	.806	.650	.006	3/301	6.0	.01	.138
4- PH Intellectual and School Status	.810	.656	.006	4/300	5.29	.01	.144
5- SCA	.811	.658	.001	5/299	1.17	ns	.053
6- Piers-Harris Total	.812	.660	.002	6/298	5.79	.01	-.180
7- SEI School-Academic	.812	.660	<.001	7/297	.54	ns	-.037
8- SEI Total	.816	.665	.005	8/296	4.84	.01	.146



by only 1.5%. Therefore, it would seem that the one best predictor of performance on an objective reading test is the verbal IQ. Other dimensions of intelligence and the various self-concept indicators were of little value in predicting reading achievement.

It would seem logical that quantitative IQ scores would be effective in predicting scores on a standardized mathematics test. The correlation of quantitative IQ and MAT mathematics scores was .815, as Table 44 indicates. Nonverbal and verbal IQ scores increased the multiple correlation to .832 ( $\underline{r}^2 = .69$ ); the addition of the various self-concept measures increased the multiple correlation to .842 raising the amount of variance accounted for to 70.9%, with a combined increment in  $\underline{r}^2$  of less than 2%. Again, the dimension of IQ most closely related to quantitative achievement proved to be the best predictor. Neither the other indicators of intelligence nor self-concept scores added appreciably to the prediction of MAT mathematics score.

The intellectual variables accounted for the major portion of variance in the prediction of achievement scores in science also. (See Table 45.) Verbal IQ alone had a correlation of .708 with MAT science scores; adding quantitative IQ made a small contribution, bringing the multiple correlation to .749 ( $\underline{r}^2 = .56$ ), and nonverbal IQ brought the resulting multiple correlation to .752. The total increment to the prediction equation which was provided by the

Table 44

Stepwise Multiple Regression Analysis of Prediction  
of MAT Mathematics Scores from IQ, Global  
Self-Concept and Academic  
Self-Concept Scores

Independent Variable	Multiple R	R <sup>2</sup>	Increment in R <sup>2</sup>	df	F	P	Beta Weight
1 - Quantitative IQ	.815	.664	.664	1/302	88.52	.01	.540
2 - Nonverbal IQ	.830	.689	.025	2/301	19.98	.01	.236
3 - Verbal IQ	.832	.692	.003	3/300	.74	ns	.044
4 - PH Intellectual and School Status	.838	.702	.009	4/299	7.65	.01	.162
5 - SCA	.838	.702	<.001	5/298	.34	ns	.027
6 - SEI School-Academic	.838	.702	<.001	6/297	1.09	ns	-.049
7 - SEI Total	.839	.704	.002	7/296	5.88	.01	-.162
8 - Piers-Harris Total	.842	.709	.005	8/295	5.37	.01	-.162

Table 45

Stepwise Multiple Regression Analysis of Prediction  
of MAT Science Scores from IQ, Global Self-Concept,  
and Academic Self-Concept Scores

Independent Variable	Multiple R	R <sup>2</sup>	Increment in R <sup>2</sup>	df	F	P	Beta Weight
1 - Verbal IQ	.708	.502	.502	1/303	37.62	.01	.377
2 - Quantitative IQ	.749	.560	.056	2/302	13.73	.01	.257
3 - Nonverbal IQ	.752	.565	.005	3/301	3.70	.05	.123
4 - SCA	.755	.570	.005	4/300	2.39	ns	.085
5 - PH Intellectual and School Status	.755	.570	.001	5/299	.76	ns	.062
6 - SEI School-Academic	.756	.571	.001	6/298	1.11	ns	-.060
7 - SEI Total	.756	.572	.001	7/297	1.20	ns	.082
8 - Piers-Harris Total	.757	.573	.001	8/296	.80	ns	-.075

non-intellective variables was less than 1%, indicating once again, that IQ scores are better predictors of academic achievement than are self-concept scores.

As Table 46 reveals, a similar pattern emerged in the prediction of performance on MAT social studies. The multiple correlation of IQ scores, global self-concept scores, and academic self-concept scores was .796, accounting for 63.4% of the variance in scores. However, the intellective variables alone accounted for 61.6% of that amount (multiple  $\underline{r} = .785$ ), lending still further support to the position that IQ scores surpass self-concept scores in power of prediction of objective test scores.

Prediction of CAT scores. Although verbal IQ accounted for the greatest amount of variance in the prediction of CAT reading scores ( $\underline{r} = .83$ ), and the addition of nonverbal and quantitative IQ resulted in a multiple correlation of .85 ( $\underline{r}^2 = .725$ ), the non-intellective variables did make a noticeable contribution. (See Table 47.) The addition of SCA scores alone increased the multiple correlation to .886 ( $\underline{r}^2 = .786$ ), and Piers-Harris Intellectual and School Status scores provided a further increment to .894. Neither the SEI total nor SEI School-Academic scores contributed substantially to the equation, but the Piers-Harris total did result in an  $\underline{r}^2$  increment of 1.6%. The addition of all of the non-intellective variables increased the multiple correlation from .851 (intellective variables only) to .925; the

Table 46

Stepwise Multiple Regression Analysis of Prediction  
of MAT Social Studies Scores from IQ, Global  
Self-Concept, and Academic Self-Concept  
Scores

Independent Variable	Multiple R	R <sup>2</sup>	Increment in R <sup>2</sup>	df	F	P	Beta Weight
1 - Quantitative IQ	.731	.535	.535	1/303	25.87	.01	.327
2 - Verbal IQ	.784	.614	.080	2/302	36.44	.01	.345
3 - Nonverbal IQ	.785	.616	.002	3/301	2.41	ns	.092
4 - SCA	.792	.627	.011	4/300	4.51	.01	.108
5 - PH Intellectual and School Status	.792	.628	.001	5/299	3.59	.01	.124
6 - SEI School-Academic	.792	.628	<.001	6/298	.34	ns	.030
7 - Piers-Harris Total	.796	.634	.006	7/297	3.12	.01	-.138
8 - SEI Total	.796	.634	<.001	8/296	.01	ns	.008

Table 47

Stepwise Multiple Regression Analysis of Prediction  
of CAT Reading Scores from IQ, Global Self-Concept,  
and Academic Self-Concept Scores

Independent Variable	Multiple R	R <sup>2</sup>	Increment in R <sup>2</sup>	df	F	P	Beta Weight
1 - Verbal IQ	.834	.696	.696	1/106	67.59	.01	.508
2 - Nonverbal IQ	.849	.721	.025	2/105	10.93	.01	.212
3 - Quantitative IQ	.851	.725	.004	3/104	.08	ns	-.020
4 - SCA	.886	.786	.061	4/103	23.27	.01	.266
5 - PH Intellectual and School Status	.894	.790	.013	5/102	36.13	.01	.428
6 - SEI School-Academic	.911	.829	.030	6/101	19.20	.01	-.250
7 - Piers-Harris Total	.919	.845	.016	7/100	18.18	.01	-.362
8 - SEI Total	.925	.856	.011	8/99	7.38	.01	.205

variance accounted for increased from 72.5% to 85.6%. The reader will recall that CAT scores were available only for eleventh-grade subjects and that the number of students having CAT scores was small. Nevertheless, the data for the CAT raise the question as to whether the non-intellective variables may make substantial contributions to the prediction of the achievement of the older adolescent.

Verbal IQ alone accounted for 53.8% of the variance in predicting CAT language scores, as Table 48 shows. Verbal, quantitative, and nonverbal IQ had a multiple correlation of .778 ( $\underline{r}^2 = .606$ ) with CAT language scores. The addition of Piers-Harris Intellectual and School Status scores, however, increased the multiple correlation to .832 ( $\underline{r}^2 = .692$ ). Adding all other self-concept scores further increased the correlation to .856, accounting for 73.1% of the variance of scores. Once again, the intellective variables accounted for the greatest amount of variance, but one indicator of the academic self-concept made a rather large contribution to the prediction equation, lending further support to the hypothesis that the academic self-concept is the one facet of the self which is most closely related to academic achievement.

In summary, the stepwise multiple regression analyses for all parts of the MAT provided further credence to the theory that intelligence test scores are more reliable predictors of academic achievement than are global self-concept

Table 48

Stepwise Multiple Regression Analysis of Prediction  
of CAT Language Scores from IQ, Global  
Self-Concept, and Academic  
Self-Concept Scores

Independent Variable	Multiple R	R <sup>2</sup>	Increment in R <sup>2</sup>	df	F	P	Beta Weight
1 - Verbal IQ	.734	.538	.538	1/106	18.51	.01	.363
2 - Quantitative IQ	.777	.604	.066	2/105	11.47	.01	.322
3 - Nonverbal IQ	.778	.606	.002	3/104	.01	ns	-.010
4 - PH Intellectual and School Status	.832	.692	.086	4/103	34.24	.01	.568
5 - SEI School - Academic	.840	.705	.013	5/102	2.91	.05	-.133
6 - SCA	.841	.707	.002	6/101	.58	ns	.057
7 - Piers-Harris Total	.854	.729	.022	7/100	7.84	.01	.325
8 - SEI Total	.855	.731	.002	8/99	.87	ns	.096



or academic self-concept scores. Scores on the three parts of the Cognitive Abilities Test were far more consistent in their relative predictability than were scores on any of the self-concept instruments. Regression data for the CAT, however, revealed that the non-intellective variables can make appreciable contributions to the prediction of academic achievement. Verbal and nonverbal IQ scores accounted for the greatest amount of variance, but the SCA accounted for a 6.1% increase in  $\underline{r}^2$  for CAT reading scores, and the Piers-Harris Intellectual and School Status subscale added 8.6% to the prediction formula for CAT language scores. Evidence derived from the CAT therefore suggests that the non-intellective variables might well complement the intellective ones, at least for older adolescents. Yet, when data for all achievement criteria are considered collectively, the scales are definitely weighted on the side of the intellective variables.

A word of caution is necessary in relation to the multiple regression tables, however. Determining the relative value of independent variables is made more difficult by the intercorrelation of one or more of those variables. As Table 49 reveals, there were significant correlations between IQ scores and both global self-concept and academic self-concept scores, as well as some of the non-academic aspects of self-concept. (The high correlations between the SCA and IQ scores indicated that students' perceptions of

Table 49  
 Correlations of Self-Concept Scores and  
 Intelligence Test Scores

	Cognitive Abilities Test		
	Verbal	Quantitative	Nonverbal
<u>SCA</u>	.53	.56	.44
<u>Piers-Harris CSCS</u>			
Total	.21	.24	.19
Behavior	.18	.20	.19
Intellectual and School Status	.33	.33	.24
Physical Appearance and Attributes	.09 (ns)	.12*	.06 (ns)
Anxiety	.11*	.16**	.16**
Popularity	.08 (ns)	.10 (ns)	.07 (ns)
Happiness and Satisfaction	.06	.12*	.10 (ns)
<u>Coopersmith SEI</u>			
Total	.27	.29	.25
General Self	.28	.31	.28
Social Self	.15**	.19	.14**
Home-Parents	.15	.18	.14**
School-Academic	.29	.29	.23

Note. Correlations are significant at .001 level unless indicated otherwise.

\*  $p < .05$ .  
 \*\*  $p < .01$ .

their ability as students corresponded remarkably well to their measured intellectual ability. That is, the students in this study appeared to have formed realistic perceptions of their ability to perform as students in comparison with that of their classmates.) Table 50 also shows that scores on the self-concept instruments themselves were intercorrelated, further complicating the issue.

As each variable was entered into the various stepwise multiple regression analyses, the partial correlation was computed for each variable which had not yet been entered into the equation. The partial correlation showed the relationship between the independent (predictor) variable and the dependent variable (academic achievement) after the effects of variables already entered had been partialled out. Because the intellectual variables were entered in the first three steps of the multiple regression analyses in every instance except one (combined GPA), it was possible to extract from the data the relationship between academic achievement and the various measures of global and academic self-concept after the effects of IQ scores had been removed.

Examination of Tables 51 through 57 reveals that the self-concept instruments were related to academic achievement criteria even when measured intelligence was controlled. The Self-Concept of Ability Scale, for example, was significantly correlated with combined GPA as well as with scores on all sections of the MAT and CAT. The Piers-Harris Intellectual

Table 50  
Intercorrelations of Self-Concept Instruments<sup>a</sup>

Instrument	<u>Coopersmith Self-Esteem Inventory</u>					<u>Self-Concept of Ability Scale</u>	
	Total	General Self	Social Self	Home-Parents	School-Academic		
<u>Piers-Harris CSCS</u>							
Total	.81	.75	.62	.56	.59	.46	
Behavior	.66	.58	.40	.63	.41	.32	
Intellectual and School Status	.63	.57	.51	.39	.58	.59	
Physical Appearance and Attributes	.48	.45	.56	.20	.33	.33	
Anxiety	.72	.69	.43	.48	.57	.32	
Popularity	.58	.53	.67	.32	.37	.28	
Happiness and Satisfaction	.65	.59	.54	.51	.40	.25	
<u>Self-Concept of Ability Scale</u>	.44	.41	.31	.26	.49	---	

Note. All correlations are significant at or beyond the .001 level.

<sup>a</sup>n = 365 (PH-SCA and SEI-SCA) and 361 (PH-SEI).

Table 51

Partial Correlations of Self-Concept Measures  
 With Combined GPA With Verbal  
 and Quantitative IQ Effects  
 Controlled

Independent Variable	Partial r	F(df 2, 329)	F
SCA	.27	25.20	.01
SEI Total	.10	3.44	.05
SEI School-Academic	.23	17.52	.01
Piers-Harris Total	.13	5.66	.01
PH Intellectual and School Status	.27	26.30	.01

Table 52

Partial Correlations of Self-Concept Measures  
 With MAT Reading Scores With  
 IQ Effects Controlled

Independent Variable	Partial r	F (df 3, 301)	F
SCA	.12	4.62	.05
SEI Total	.12	4.45	.01
SEI School-Academic	.08	2.14	ns
Piers-Harris Total	.07	1.34	ns
PH Intellectual and School Status	.14	6.01	.01

Table 53

Partial Correlations of Self-Concept Measures  
 With MAT Mathematics Scores  
 With IQ Effects Controlled

Independent Variable	Partial r	F(df 3, 300)	P
SCA	.12	4.05	.01
SEI Total	.15	7.06	.01
SEI School-Academic	.09	2.58	ns
Piers-Harris Total	.10	3.33	.05
PH Intellectual and School Status	.18	9.84	.01

Table 54

Partial Correlations of Self-Concept Measures  
With MAT Science Scores With  
IQ Effects Controlled

Independent Variable	Partial r	F(df 3, 301)	P
SCA	.11	3.67	.05
SEI Total	.06	1.09	ns
SEI School	.02	.12	ns
Piers-Harris Total	.05	.66	ns
PH Intellectual and School Status	.07	1.82	ns



Table 55

Partial Correlations of Self-Concept Measures  
With MAT Social Studies Scores  
With IQ Effects Controlled

Independent Variable	Partial r	F(df 3, 301)	P
SCA	.17	8.89	.01
SEI Total	.03	.31	ns
SEI School-Academic	.09	2.41	ns
Piers-Harris Total	.02	.18	.01
PH Intellectual and School Status	.12	4.43	.01

Table 56

Partial Correlations of Self-Concept Measures  
With CAT Reading Scores With  
IQ Effects Controlled

Independent Variable	Partial r	F(df 3, 104)	P
SCA	.47	29.16	.01
SEI Total	.13	1.69	ns
SEI School-Academic	-.01	.01	ns
Piers-Harris Total	.14	2.05	ns
PH Intellectual and School Status	.42	22.61	.01

Table 57

Partial Correlations of Self-Concept Measures  
With CAT Language Scores With  
IQ Effects Controlled

Independent Variable	Partial r	F(df 3, 104)	P
SCA	.26	7.66	.01
SEI Total	.14	1.96	ns
SEI School-Academic	.09	.90	ns
Piers-Harris Total	.19	4.05	.01
PH Intellectual and School Status	.47	28.90	.01

and School Status subscale also had a significant partial correlation with all achievement criteria except MAT science. The global self-concept scores and the SEI School-Academic scores followed a less consistent pattern of correlation with grade point average and achievement test scores. Generally, the SCA and Piers-Harris Intellectual and School Status subscales, which are both indicators of academic self-concept, would appear to be related to academic achievement in ways which cannot be explained by intelligence alone. Data from the partial correlations suggest once again, however, that the academic self-concept is that aspect of the self-concept which is most closely related to academic achievement.

When considered as a whole, the data related to the third research question did support the hypothesis that intellectual variables are more effective predictors of academic achievement than are non-intellectual variables. The statistical analyses further revealed that students who had high intelligence test scores tended to make better grades, and although the relationship was not nearly so strong as that for IQ and academic achievement, those students who had higher levels of measured mental ability also tended to have higher academic self-concept and (to a lesser degree) global self-concept scores. The data suggested, therefore, that on the basis of their own experiences in school, the students in this study had formulated opinions about their level of academic ability which were closely related to their actual

ability levels as indicated by intelligence test scores. One might argue that the significant correlations between students' opinions and their IQ scores were the result of some self-fulfilling prophecy, but a stronger counter-argument would hold that realistic perceptions of one's capacities are essential if the individual is to function effectively in society. Because of the intercorrelation of IQ scores and self-concept scores, it would appear to be impossible to assess precisely the contribution of the non-intellective variables in the prediction of scholastic performance.

Race, Sex, Grade Level (Age), and Socioeconomic Differences in Self-Concept

The final research question asked whether there are differences in self-concept which are related to subjects' sex, race, grade level, or socioeconomic status. Although the literature contains some evidence that such differences exist, there seems to be more support recently for the position that differences in self-concept do not occur systematically across samples. Therefore, the null hypothesis that there would be no differences between the mean self-concept scores of the various subgroups was posed.

Mean scores for the total sample are reported in Table 58. Coopersmith (1975) states that means of the SEI are generally within the range of 70 to 80 and that standard deviations are approximately 11 to 13. Self-Esteem Inventory norms show mean scores of subjects from 9 to 15 years of age to be 70.1

Table 58  
 Mean Self-Concept Scores For Total Sample

	Mean Score	SD
<u>SCA</u> <sup>a</sup>	29.80	4.32
<u>Piers-Harris CSCS</u> <sup>b</sup>		
Total	60.74	11.17
Behavior	16.06	3.06
Intellectual and School Status	12.93	3.38
Physical Appearance and Attributes	8.99	3.06
Anxiety	9.80	3.24
Popularity	9.09	2.43
Happiness and Satisfaction	8.59	1.68
<u>Coopersmith SEI</u> <sup>c</sup>		
Total	72.13	15.51
General Self	18.87	4.19
Social Self	6.51	1.50
Home-Parents	6.0	2.12
School-Academic	4.71	1.88

a<sub>n</sub> = 371.

b<sub>n</sub> = 367.

c<sub>n</sub> = 368.

for females and 72.2 for males; the mean norm scores for young adults (16 to 23) is 76.1. The total sample mean score of 72.13 obtained in the present study would be comparable to Coopersmith's norm results, but the standard deviation (15.51) was slightly higher than the norm, indicating the presence of more extreme scores in this study.

The mean total score for the Piers-Harris (60.74, SD 11.17) exceeded the norm (M = 51.84, SD 13.87) which the authors of the scale reported from the scores of 1183 public school students in grades 4 to 12 (Piers, 1969). Yet, the present mean scores did fall within the 46 to 60 raw score range, which the authors consider to be average. Brookover, Paterson, and Thomas (1964) reported mean SCA scores of 27.35 for males and 28.25 for females. The total mean score of 29.8 was only slightly higher for subjects in the present study. The similarity of means and standard deviations obtained in this study suggests that the population was generally comparable to the groups on which normative data for the three self-concept instruments was based.

Sex differences. Table 59 shows the results of the analysis of variance of scores by sex. There were no significant differences in the global self-concept scores of males and females as indicated by total scores on the Piers-Harris CSCS or the Coopersmith SEI. Scores on the Self-Concept of Ability Scale were also very similar for male and female subjects. Within the Piers-Harris and the SEI subscales, however,

Table 59  
Mean Self-Concept Scores by Sex

	Male	Female	Total Sample	F <sup>a</sup>	P
<u>SCA</u> <sup>b</sup>	30.11	29.56	29.80	1.49	ns
<u>Piers-Harris CSCS</u> <sup>c</sup>					
Total	61.19	60.41	60.74	0.44	ns
Behavior	15.51	16.46	16.06	8.86	<.01
Intellectual and School Status	12.71	13.08	12.93	1.04	ns
Physical Appearance and Attributes	9.43	8.66	8.98	5.70	<.05
Anxiety	10.70	9.15	9.80	21.68	<.001
Popularity	9.07	9.10	9.09	0.01	ns
Happiness and Satisfaction	8.66	8.54	8.59	0.51	ns
<u>Coopersmith SEI</u> <sup>d</sup>					
Total	71.69	72.45	72.13	0.22	ns
General Self	19.01	18.77	18.87	0.27	ns
Social Self	6.34	6.64	6.51	3.83	.05
Home-Parents	5.90	6.07	6.00	0.53	ns
School-Academic	4.61	4.78	4.71	0.74	ns

<sup>a</sup>df = 1, 369 (SCA); 1, 365 (Piers-Harris); and 1, 366 (SEI).

<sup>b</sup><sub>n</sub> = 157 males and 412 females.

<sup>c</sup><sub>n</sub> = 154 males and 213 females.

<sup>d</sup><sub>n</sub> = 155 males and 213 females.



there were sex differences. The mean score of 16.46 for females on the Piers-Harris Behavior subscale was significantly different ( $p < .01$ ) from that for males ( $M = 15.51$ ). Females also scored significantly higher than males on the SEI Social Self-Peers subscale ( $M = 6.64$  vs.  $6.34$ ). Both subscales allegedly concern the subjects' liking for and ability to get along with others; therefore, it would seem logical that Behavior and Social Self scores would follow similar trends if they do assess the same traits. Generally, girls of school age are somewhat more conforming socially, and their behavior and social scores might be expected to be somewhat higher than those for males.

Males scored significantly higher ( $p < .001$ ) on the Piers-Harris Anxiety subscale ( $M = 10.70$ ) than did females ( $M = 9.15$ ), indicating that the males in the sample were more anxious than the females. Male scores on Piers-Harris Physical Appearance and Attributes ( $M = 9.43$ ) were also significantly higher ( $p < .05$ ) than for females ( $M = 8.66$ ), implying that the males were generally more satisfied with their physical selves than were the females.

Race differences. Table 60 reveals that there were race differences in all academic self-concept scores. Mean scores of black students were significantly lower than those for whites on the SCA (28.03 vs. 30.17,  $p < .001$ ), Piers-Harris Intellectual and School Status (11.92 vs. 13.13,  $p < .01$ ), and SEI School-Academic (4.30 vs. 4.80,  $p < .05$ ). Although the global

Table 60  
Mean Self-Concept Scores by Race

	White	Black	Total Sample	F <sup>a</sup>	P
<u>SCA</u> <sup>b</sup>	30.17	28.03	29.80	13.59	.001
<u>Piers-Harris CSCS</u> <sup>b</sup>					
Total	61.09	59.05	60.74	1.75	ns
Behavior	16.11	15.83	16.06	0.45	ns
Intellectual and School Status	13.13	11.92	12.93	6.83	<.01
Physical Appearance and Attributes	9.03	8.75	8.98	0.46	ns
Anxiety	9.85	9.59	9.80	0.33	ns
Popularity	9.13	8.87	9.09	0.59	ns
Happiness and Satisfaction	8.58	8.65	8.59	0.10	ns
<u>Coopersmith SEI</u> <sup>c</sup>					
Total	72.93	68.32	72.13	4.70	.05
General Self	19.04	18.06	18.87	2.91	ns
Social Self	6.58	6.18	6.51	3.72	.05
Home-Parents	6.03	5.81	6.00	0.59	ns
School-Academic	4.80	4.30	4.71	3.80	.05

<sup>a</sup>df = 1, 369 (SCA); 1, 365 (Piers-Harris); and 1, 366 (SEI).

<sup>b</sup>n = 306 whites and 65 blacks.

<sup>c</sup>n = 304 whites and 63 blacks.

<sup>d</sup>n = 304 whites and 64 blacks.

self-concept scores of whites were higher than those for blacks on both the Piers-Harris ( $\underline{M}$  = 61.09 vs. 59.05) and the SEI ( $\underline{M}$  = 72.93 vs. 68.32), only the latter difference was statistically significant ( $\underline{p}$  < .05).

There was also a significant race difference in SEI Social Self, with the mean score for whites (6.58) being higher than that for blacks (6.18) at the .05 level of significance. Another difference which was not statistically significant, but was interesting nevertheless was that the one self-concept subscale on which blacks scored higher than whites was Piers-Harris Happiness and Satisfaction (8.65 vs. 8.58). Also, the mean score on the Piers-Harris Anxiety subscale was lower for blacks than for whites, indicating a tendency (but not a statistically significant one) for blacks to be less anxious than whites.

Grade level (age) differences. When self-concept scores were compared by grade level, there were no significant differences in global self-concept. (See Table 61.) Although most of the total and subscale scores followed an upward trend from grade 7 to 9 and from 9 to 11, only 3 of the subscale means showed significant grade level differences. The Piers-Harris Popularity mean for grade 11 was significantly higher (9.48 ,  $\underline{p}$  < .01) than that for grade 7 (8.59) or grade 9 (9.21). The same pattern was obvious in SEI General Self scores for the seventh, ninth, and eleventh grades (17.99,

Table 61  
Mean Self-Concept Scores by Grade Level

	Grade			Total Sample	F <sup>a</sup>	P
	7	9	11			
SCA <sup>b</sup>	29.81	29.83	29.75	29.80	0.01	ns
<u>Piers-Harris CSCS<sup>c</sup></u>						
Total	59.36	61.50	61.44	60.74	1.48	ns
Behavior	15.77	15.88	16.53	16.06	2.22	ns
Intellectual and School Status	12.65	13.44	12.72	12.93	2.04	ns
Physical Appearance and Attributes	8.50	9.37	9.12	8.98	2.69	ns
Anxiety	9.69	9.69	10.02	9.80	0.44	ns
Popularity	8.59	9.21	9.48	9.09	4.52	.01
Happiness and Satisfaction	8.49	8.55	8.73	8.59	0.71	ns
<u>Coopersmith SEI<sup>d</sup></u>						
Total	69.72	72.49	74.25	72.13	2.79	ns
General Self	17.99	18.87	19.77	18.87	5.86	<.01
Social Self	6.22	6.54	6.79	6.51	4.69	<.01
Home-Parents	6.12	5.72	6.13	6.00	1.43	ns
School-Academic	4.66	4.70	4.78	4.71	0.13	ns

<sup>a</sup>df = 2, 368 (SCA); 2, 364 (Piers-Harris); and 2, 365 (SEI).

<sup>b</sup>n = 129 (grade 7), 116 (grade 9), and 126 (grade 11).

<sup>c</sup>n = 127 (grade 7), 117 (grade 9), and 123 (grade 11).

<sup>d</sup>n = 128 (grade 7), 114 (grade 9), and 126 (grade 11).

18.87, and 19.77, respectively,  $p < .01$ ) and SEI Social Self scores (6.22, 6.54, 6.79,  $p < .01$ ). These findings suggest that the older adolescent might not only feel better about himself or herself, but might also feel more accepted by others than the younger adolescent would.

Socioeconomic differences. Even though there appeared to be no sex or grade level differences in global self-concept, there were socioeconomic differences, as Table 62 indicates. There was a general downward trend in all of the self-concept mean scores from Social Class I to Social Class V. Global self-concept differences were evident on both the Piers-Harris, with mean scores ranging from 64.57 for Social Class I to 58.36 for Social Class V, and the Coopersmith SEI, with mean scores from 78.05 for Social Class I to 68.18 for Social Class V, indicating that subjects in the lower classes tended to view themselves more negatively than did those of higher socioeconomic status.

Not only were there social class differences in global self-concept; there were differences in the academic self-concept as well. Self-Concept of Ability mean scores followed a definite downward trend from Social Class I ( $M = 32.62$ ) to Social Class V ( $M = 27.36$ ). A similar pattern appeared in Piers-Harris Intellectual and School Status mean scores, with a range from 14.21 to 11.64 ( $p < .001$ ). SEI School-Academic scores also were significantly different, with mean scores ranging from 5.17 for Social Class I to 4.05 for Social Class V

Table 62

## Mean Self-Concept Scores by Social Class

Instrument	Social Class					Total Sample	F <sup>a</sup>	P
	I	II	III	IV	V			
<u>SCA</u> <sup>b</sup>	32.62	31.02	30.31	28.62	27.36	29.78	12.91	<.001
<u>Piers-Harris CSCS</u> <sup>c</sup>								
Total	64.57	60.23	62.49	58.74	58.36	60.77	3.43	<.01
Behavior	17.00	15.19	16.58	15.82	15.61	16.09	3.23	.01
Intellectual and School Status	14.21	13.04	13.42	12.42	11.64	12.94	4.52	.001
Physical Appearance and Attributes	9.69	9.02	9.13	8.62	8.82	8.99	1.05	ns
Anxiety	10.60	9.94	9.95	9.49	9.27	9.80	12.5	ns
Popularity	8.93	9.26	9.43	8.72	8.80	9.05	1.56	ns
Happiness and Satisfaction	8.86	8.51	8.68	8.51	8.41	8.59	0.55	ns
<u>Coopersmith SEI</u> <sup>d</sup>								
Total	78.05	73.09	74.15	69.31	68.18	72.21	3.75	<.01
General Self	20.49	19.11	19.37	18.42	17.23	18.91	4.12	<.01
Social Self	6.83	6.59	6.67	6.22	6.34	6.50	2.00	ns
Home-Parents	6.39	6.02	6.25	5.71	5.86	6.02	1.36	ns
School-Academic	5.17	4.91	4.97	4.47	4.05	4.72	3.21	.01

<sup>a</sup>df = 4, 356 (SAC); 4, 352 (Piers-Harris); and 4, 353 (SEI).

<sup>b</sup>n = 42, 47, 116, 111, and 45 for Social Classes I-V, respectively.

<sup>c</sup>n = 42, 47, 114, 110, and 44 for Social Classes I-V, respectively.

<sup>d</sup>n = 41, 46, 115, 112, and 44 for Social Classes I-V, respectively.

( $p < .01$ ). The lower mean scores on all measures of the academic self-concept indicated that subjects near the bottom of the social scale viewed themselves as less capable scholastically than their upper class counterparts.

SEI General Self mean scores and Piers-Harris Behavior mean scores were also significantly different ( $p < .01$ ) by social class. Although mean scores tended to drop as the social class declined, there were many instances in which subjects in Social Class III had mean scores which were higher than those for students in Social Class II. The same trend appeared to a limited extent in classes IV and V. The reversal of the trend might reflect a true difference in the subjects' feelings about themselves, but it could also be a function of the instrument used to classify students by social class. Some occupations are difficult to classify; there is much potential overlap between Social Class II and III and between Social Class IV and V.

The one subscale on which scores deviated from the general downward trend by social class was Piers-Harris Popularity. Although the differences between mean scores were not statistically significant, Social Class III subjects showed the highest mean score, followed by Social Class IV subjects, suggesting that middle and lower-middle class students placed greater emphasis on social acceptance by their peers or at least were more likely to perceive themselves as being well-liked by others. Another interesting although statistically

nonsignificant, trend was for Piers-Harris Anxiety scores to be highest for Social Class I (10.60) and lowest for Social Class V (9.27), indicating a tendency for those subjects at the highest socioeconomic level to be the most anxious and for those in the least favored social circumstances to be least anxious. The social class differences in anxiety raise the question as to whether those in the most favored socioeconomic situations may be subjected to greater pressures, such as the need to equal or exceed parental accomplishments. The lower class student, having much less impressive standards to uphold, may feel more satisfied with himself or herself and find that "success" as measured by Social Class V standards is much more easily attained than that which is considered noteworthy in the higher socioeconomic classes.

From the data compiled in this study, it would appear that there are no differences in global self-concept or academic self-concept which are attributable to sex or grade level. When examined by race, however, the data revealed a tendency for blacks to perceive themselves somewhat less positively than did whites, especially in terms of academic potential. Also, the data indicated that students in the lower social classes not only viewed themselves more negatively academically, but that they also had lower levels of overall self-esteem and perceived their behavior less positively than did those in the upper social classes. Therefore, Hypothesis



IV can be accepted only in part. The data did not support the null hypothesis as it relates to race and socioeconomic differences.

CHAPTER V  
SUMMARY, DISCUSSION, AND IMPLICATIONS  
FOR FURTHER RESEARCH

Summary

This study was a multivariate examination of some of the factors which influence and/or predict academic achievement. Of particular interest was the self-concept, not only as it relates to achievement, but also as it might vary from one sex, race, grade level, or socioeconomic group to another. Because research related to the self-concept has been beset with methodological problems, the present study was designed so as to try to circumvent some of those difficulties. From the numerous self-concept instruments which are available, three of the most reputable and most thoroughly researched were administered to the subjects in this study.

Also, the use of three instruments provided more than one indication of students' self-concepts. Both the Piers-Harris Children's Self Concept Scale and the Coopersmith Self-Esteem Inventory yield global self-concept scores as well as a number of subscale scores. Thus, the use of these instruments made it possible to examine not only the relationship between overall self-concept and academic achievement, but also the relationship between the various dimensions of the self-concept and scholastic performance. The Piers-Harris

provided the following subscale scores: Behavior, Intellectual and School Status, Physical Appearance and Attributes, Anxiety, Popularity, and Happiness and Satisfaction. Self-Esteem Inventory subscale scores included General Self, Social Self-Peers, Home-Parents, and School-Academic. The third instrument, the Self-Concept of Ability Scale, was restricted only to the academic self-concept. Thus, the instruments selected for use in this study made it possible to examine the self-concept as a multidimensional construct as generally presented in the literature and as specifically discussed by Shavelson, Hubner, and Stanton (1976).

In order to assess the self-concept and academic achievement relationship as thoroughly as possible within the limits of the study, the examiner used both objective and subjective indicators of scholastic performance. Although some studies have used as the academic achievement criterion the grade received in just one course, the possibility of teacher-bias or subjective influences in grading would seem to be a confounding variable. Therefore, the present study utilized both teacher-assigned grades and standardized achievement test scores in the four major subject areas (English, mathematics, science, and social studies) which were included in the work of Brookover, Thomas, and Paterson (1964). In the hope of increasing the generalization value of results, the examiner also selected a group of students to represent each of three stages of adolescence: early, middle, and late.

The Self-Concept of Ability Scale, the Piers-Harris Children's Self Concept Scale, and the Coopersmith Self-Esteem Inventory were administered to a sample of 374 subjects representing a cross section of the student population in the seventh, ninth, and eleventh grades in a Piedmont North Carolina city school system. At the time of the self-concept assessment, students were asked to indicate on a separate form the educational and occupational level of the head of the household in which they were residing. That information made it possible to classify each subject according to social class, using Hollingshead's Two Factor Index of Social Position.

From school records, students' English, mathematics, science, and social studies grades were obtained, and a composite grade point average based on those four grades was calculated for each student. Verbal, quantitative, and non-verbal IQ scores were recorded, as well as Metropolitan Achievement Test scores (reading, mathematics, science, and social studies). Reading and language scores on the California Achievement Test were noted for students in the eleventh grade. The race, sex, and age of each student were also indicated.

The self-concept and academic achievement data were subjected to computer analysis, using the Statistical Package for the Social Sciences. For the total sample, basic

statistical calculations (mean, standard deviation, range, etc.) were obtained, and then the data were subjected to analysis of variance techniques to determine whether there were significant differences in self-concept which might be attributable to subjects' sex, race, grade level (age), or socioeconomic status.

In order to examine the relationships between the various aspects of the self-concept and the achievement variables, Pearson correlations were computed not only for the total sample, but for each of the sex, race, grade level, and social class subgroups as well. Multiple regression analysis was also used to determine the relative value of intellectual (IQ scores) and non-intellectual (self-concept scores) variables in predicting students' academic achievement.

Based on the self-concept, academic achievement, and demographic data compiled in this study, the following hypotheses were tested:

- I. Global self-concept is not related to academic achievement.
- II. Of the various dimensions of the self-concept, only the academic self-concept (self-concept of ability) is significantly related to academic achievement.
- III. Intellectual variables are more accurate predictors of academic achievement than are non-intellectual variables.
- IV. There are no significant variations in self-concept which are attributable to the sex, race, age, or socioeconomic status of the subject.

Hypothesis I - Global self-concept and academic achievement. The data generated by this study, when considered for the total sample, did not support the null hypothesis that global self-concept is not related to academic achievement. Correlations of the total scores on the Piers-Harris Children's Self Concept Scale and on the Coopersmith Self-Esteem Inventory with both subjective and objective indicators of achievement were statistically significant. However, when global self-concept and academic achievement correlations were examined by sex, race, grade level, and social class, there were some subgroup differences in the relationship between overall self-concept and scholastic performance. The latter finding suggests, therefore, that correlational trends which appear in data based on samples which are dominated by white, middle class subjects do not necessarily hold true for all populations.

When self-concept and achievement correlations were analyzed by sex, for example, the data revealed that while the correlations were generally comparable for both sexes, there was one noticeable departure. Neither the Piers-Harris nor the SEI total scores were significantly related to English GPA for males, raising the possibility of teacher-bias in the assignment of grades or suggesting that grades received in English are somehow less vital to males' overall feelings of self-esteem than are grades in other disciplines.

One might ask whether the adolescent male views English as a "feminine" subject in which females are expected to surpass males in achievement.

The analysis by race revealed that the self-concept levels of the black students in this study were not significantly related to the grades they received in school. Although the global self-concept of blacks, as measured by the Piers-Harris, was related to only two of the objective criteria (MAT reading and social studies), SEI total scores were significantly correlated with all standardized test scores except MAT social studies. All self-concept and achievement criteria correlations were positive and significant for the white subjects, but the relationship did not hold for the blacks in the study. The global self-concept indicators provided somewhat conflicting information, however. Data based on the Piers-Harris alone would tend to support Hypothesis I for black subjects, but the SEI statistics indicated that the self-concept was positively and significantly related to standardized achievement test scores for subjects of both races.

When the correlations were examined by grade level, the data for grades seven and eleven (early and late adolescence) generally confirmed that the global self-concept was positively and significantly related to academic achievement. However, students in grade 9 (middle adolescence) apparently were able to differentiate between success as a person and success

as a student to a greater extent than were those students who were younger or older than they. For the ninth-graders, global self-concept was not significantly related to academic achievement. Therefore, the data for grade nine would tend to support the first hypothesis.

The analysis by social class also disclosed discrepancies in the assumption that self-concept and scholastic success are closely related for all subjects. The data revealed that for subjects in Social Class I and Social Class V, Hypothesis I would generally hold true. Such students' feelings of personal adequacy would appear to function independently of their success as scholars. The findings for the middle classes were mixed, but the data generally supported the position that for students in the upper-middle and middle classes, self-concept scores are related to performance in school. That is, students who have the higher self-concept scores tend to perform at higher academic levels. The latter phenomenon is probably a function of middle class families' emphasis on achievement in education as a means of upward social mobility.

In summary, then, the data compiled in this study collectively refuted the first hypothesis, but subgroup departures raised the question as to whether the strength of the relationship between self-concept and academic achievement might be largely dependent upon the demographic characteristics of the sample being studied. To assume that success



in school is a significant value for all students would appear to be an oversimplification of a very complex issue.

Hypothesis II - Academic self-concept and achievement.

When considered for the total sample, the data did not support the second hypothesis, which maintained that only the academic aspects of the self-concept are related to students' performance in school. Non-academic aspects of the self-concept were found to be related to achievement, but the strongest and most consistent correlations related to Hypothesis II were those between the academic self-concept and the various achievement criteria. If, as much of the literature suggests, the self-concept does consist of academic and non-academic dimensions, it would seem logical that the measures of the self-concept of academic ability would be closely related to success as a student.

Correlations between Self-Concept of Ability Scale scores and both teacher-assigned grades and standardized test scores were quite strong, and the academic subscales of both the Piers-Harris CSCS and the Coopersmith SEI were significantly related to all academic achievement scores. That is, subjects who perceived themselves as having high academic ability in relation to their peers also tended to make higher grades and to have higher standardized test scores. However, scores on the Behavior subscale of the Piers-Harris and most of the SEI non-academic subscales also showed relatively low positive correlations with teacher-assigned grades. While

the Piers-Harris non-academic scores generally had either very low or nonsignificant correlations with standardized test scores, all of the SEI subscales except Home-Parents were significantly related to all parts of the Metropolitan Achievement Test and the California Achievement Test. The data suggest that students' behavior is positively related to their achievement in school, but the stronger behavior - GPA correlations indicate that teachers may allow students' classroom conduct to influence their grades. Also, one might ask whether a student's good decorum and attentiveness in class result in higher academic achievement or whether success in school results in more socially acceptable behavior. While the data do not answer the question of cause and effect, they do suggest that the relationship between conduct and scholastic performance is significant.

In relation to the second hypothesis, the Piers-Harris appeared to function more effectively than the Self-Esteem Inventory in discriminating among the various dimensions of the self-concept. The similarity of statistics for the SEI subscales raises the question as to whether the latter instrument actually assesses distinct facets of the self-concept. While the SEI purportedly measures the level of "self-esteem" of the subject, the presence of the subscales implies that discrete parts of the self are being evaluated.

Once again, the correlations were examined by sex, race, grade level, and social class to determine whether Hypothesis

II might be accepted for any of the subgroups. There were sex differences in the relationships between non-academic aspects of the self-concept and academic achievement, but no consistent pattern emerged. As predicted, the academic self-concept was significantly and positively related to the various achievement criteria for both sexes. The correlations between Behavior subscale scores and teacher-assigned grades were also significant for both sexes, with the one exception of social studies GPA for males. Therefore, it would seem that students who have positive self-concepts and who perceive themselves as better behaved tend to make better grades. (Girls' Behavior scores were also significantly and positively related to their MAT scores, but that relationship did not hold for the males.) Also, males' Social Self scores were positively related to their grades in English, mathematics, and social studies, once again reiterating the influence of conduct on teacher-assigned grades. Those males in the study who perceived themselves as being well-accepted by others tended to have higher grade point averages.

Another sex difference revealed that females who had positive perceptions of their family life generally made better grades in the four major subject areas than did those females with more negative feelings about their home and parents. For the males, however, relationships with parents were not significantly related to GPA except in mathematics, perhaps indicating greater parental control and influence over

adolescent females than over adolescent males. For the males, however, scores on the Physical Appearance and Attributes subscale of the Piers-Harris were positively correlated with GPA in English, mathematics, and science.

Achievement, as indicated by the grades received for classroom performance, was more closely related to males' level of satisfaction with their physical selves and social relations, but for females, positive family relationships appeared to be a more significant factor. Of the various facets of the self-concept, however, only the measures of self-concept of ability as a student were significantly and positively related to all achievement criteria for both sexes. Therefore, positive feelings about one's ability to perform academic tasks would appear to be the one factor which is most closely related to the academic achievement levels attained by both sexes.

When self-concept and achievement correlations were compared by race, there were distinct differences. Data for the black subjects offered some support for Hypothesis II in that only the academic aspects of self-concept were significantly related to GPA in all four subject areas, as well as to all MAT scores except social studies. The data suggest that for both races success in school is related primarily to students' perceptions of their scholastic potential. General Self scores were significantly related to all standardized achievement test scores, with the exception of MAT social

studies for blacks. However, when teacher-assigned grades were examined, General Self scores were related to grades received for the white students only, suggesting the possibility of subjective influences in the assignment of grades to black students. Behavior subscale scores were also related to GPA in all subjects, and SEI Social Self scores were related to GPA in English, social studies, and science for whites, but for black students, neither general decorum nor social relations appear to be related to the grades they receive.

One other noticeable race difference involved the Home-Parents subscale of the SEI. For whites, perceptions of family relationships do seem to be positively related to academic performance. Those white students who scored higher on the Home-Parents subscale tended to have higher grade point averages in all four subject areas, but that trend did not appear in the correlations for black students. The data imply that success in school is more likely to be stressed by white parents and that white children are more apt to seek to excel in school as a means of maintaining parental approval.

The analysis by race, then, revealed that the one facet of the self-concept which was most closely related to academic achievement was the academic self-concept. For both races, students who had positive academic self-concepts tended to attain higher levels of academic achievement. For whites, however, perceptions not only of the self-concept of

ability, but of the general self and social and family relations as well, were positively related to grades received in school. One might ask once again whether the more positive feelings about the self and the degree of acceptance by others are the result of higher academic achievement for whites, or whether the achievement stems from greater confidence resulting from a favorable self-image.

There were also grade level differences in the relationship between the various dimensions of the self-concept and academic achievement. Again, the correlations between academic self-concept and the objective and subjective indicators of achievement were generally stronger and more consistent across grade levels than were those for the non-academic aspects of self-concept. (The nonsignificant correlation between Intellectual and School Status scores and teacher-assigned grades which was observed for ninth-graders was an exception.)

For the seventh-grade students (early adolescents), Behavior subscale scores were significantly and positively related to MAT scores and to grades received in all subject areas except English. Popularity, Happiness and Satisfaction, General Self, and Home-Parents subscale scores were also generally related to seventh-graders' teacher-assigned marks. The data suggest, therefore, that young adolescents who perceive themselves as academically capable and popular with their peers and who are generally satisfied both with

themselves and their families tend to make better grades. For the seventh-grader, it would not seem possible to restrict the relationship between self-concept and scholastic success only to the self-concept of ability. Other dimensions of the self-concept were related to academic achievement, and the seventh-grader's sense of overall worth appeared to be related to success as a student.

Data for the ninth-grade subjects tended to support Hypothesis II, however. Self-Concept of Ability Scale scores were significantly related to all subjective and objective achievement criteria, as were SEI School-Academic subscale scores (with the one exception of MAT mathematics). Intellectual and School Status scores were also related to all MAT scores except mathematics, but no other subscales were systematically related to the academic achievement of ninth-graders. While the middle adolescent who viewed his or her academic ability positively was likely to make better grades than one with a negative academic self-concept, the data for students in grade nine indicated the presence of an inverse relationship between many of the non-academic aspects of self and scholastic performance. The literature on adolescence suggests that the primary identifications of adolescents are with their peers, and one might ask whether the ninth-graders, with an age range from 14 to 16, were manifesting this tendency. With newly acquired physical powers and increasing social independence, does the middle

adolescent demonstrate his or her "maturity" by behaving as if school is not a significant value in his or her life? The data suggest that some such factor might have influenced the findings for the students in grade nine.

For the eleventh-grade subjects, all of the academic self-concept measures were significantly related to all of the subjective and objective achievement criteria. Reflecting a trend observed for seventh-graders, the eleventh-grade students' Behavior scores were related to grades received in all subject areas except English, and Social Self scores were related to GPA in every course except mathematics. That is, students who viewed themselves as well-behaved and socially-accepted tended to receive higher grades in school. Older adolescents who were satisfied with their physical attributes also appeared to make higher grades in social studies and science. For the students in grade 11, home and family relationships were also positively related to scholastic success.

When considered by grade level, the data for grade nine was most supportive of the second hypothesis. Subjects in grades seven and eleven were comparable in that other dimensions of the self were significantly related to achievement, but the non-academic aspects which were related were not consistent even for grades seven and eleven. For both the younger and the older adolescent, however, behavior and family relationships were significantly related to achievement in school, although not so closely related as the academic



self-concept. The absence of the influence of conduct and feelings about the home and parents in the data for ninth-graders raises the possibility that the middle adolescent may be at the zenith of his or her nonconforming behavior and rebellion against authority. Having emerged from the emotional upheavals of puberty, the eleventh-grade student may once again recognize and be influenced by parental values.

There were also social class variations in the correlations of academic and non-academic self-concept with achievement. For Social Class I, it was not possible to detect any particular trend. No aspect of the self-concept (academic or non-academic) was consistently correlated with achievement. Subjects in Social Class V also departed from the overall group pattern; for that group, the Self-Concept of Ability Scale was the only instrument or subscale that was significantly related to all teacher-assigned grades, and it was also significantly related to all parts of the MAT except science. For Social Classes II, III, and IV, academic self-concept scores were generally related to academic achievement.

Other non-academic aspects of self-concept were related to scholastic performance, but the correlations were not consistent across achievement criteria. However, the data did provide evidence that middle-class subjects who have positive perceptions of themselves in general, their behavior, and their relationships with parents and family are more likely to be successful students. Although the correlations were

not statistically significant, data for the lowest social class indicated that Social Class V students who viewed their home life positively tended to exhibit lower levels of academic achievement than did those students in the same social class who had negative perceptions of their families. Again, one of the problems of correlational research appears. Do lower-class students, recognizing that scholastic success is not a significant value of their parents, make lower grades as a means of maintaining harmonious family relations? Do they seek success in a job or find some other way to win their parents' approval? Does making good grades create friction between the lower class student and his or her family? The data cannot answer the cause and effect questions; they simply indicate that the above factors are related to some extent.

The findings for the highest and lowest social classes not only refuted Hypothesis II, but they also indicated that no dimensions of the self-concept, academic or non-academic, were systematically related to academic achievement. While perceptions of academic ability did appear to be related to the scholastic performance of students in the middle classes, other dimensions of the self were also involved for those students. The social class differences emphasize the hazards of generalizing to all segments of the population results which have been obtained largely with middle-class subjects and suggest that the relationship between

self-concept and achievement which characterizes middle-class subjects does not necessarily hold true for other groups.

In light of the mixed findings, conclusions related to Hypothesis II must be drawn cautiously. The evidence compiled in this study indicates that the relationship between the various dimensions of the self-concept and academic achievement extends beyond mere perception of the self as a student. Yet, because the statistics for the subscales were not consistent across achievement criteria for all, or even most, of the subgroups, just what the relative contributions of the non-academic self-perceptions might be for the general population remains an unanswered question.

Hypothesis III - Intellectualive versus non-intellective predictors of academic achievement. The data provided support for the third hypothesis, which stated that intellectualive variables are more accurate predictors of achievement than are non-intellective ones. Simple correlations between IQ scores (verbal, quantitative, and nonverbal) and achievement criteria were generally much higher than those between global self-concept or academic self-concept scores and achievement criteria. Analysis by subgroups revealed that the relationships generally held, regardless of the race, sex, grade level, or socioeconomic status of the subjects. The correlations between intelligence test scores and both GPA and standardized test scores were markedly more consistent

across subgroups than were those between the various self-concept measures and achievement.

While the simple correlations between global self-concept and the various achievement criteria were significant for the total sample, the self-concept data revealed some rather capricious departures in the sub-group analyses. The stronger and more stable correlations between IQ scores and academic achievement criteria demonstrated that the intellectual variables were much more reliable predictors of scholastic performance.

Further support for Hypothesis III was provided by the results of stepwise multiple regression analysis, which revealed that the intellectual variables accounted for the greatest amount of variance in predicting combined grade point average and scores on the MAT and CAT. In each analysis, IQ scores accounted for the most significant correlations with the achievement criteria. The data suggest that self-concept scores, especially as related to the academic self-concept, do make significant contributions to the prediction of academic achievement, however. Therefore, it would seem that the non-intellectual variables might well serve as complements to the intellectual ones, particularly insofar as the performance of individual students is concerned.

Also, the partial correlations between self-concept measures and the various achievement assessments revealed that self-concept was related to achievement when the effects of

measured intelligence were controlled. The data suggest, therefore, that self-concept, as a construct distinct from intelligence, does bear a significant relationship with the performance of academic tasks. That is, students who have positive self-concepts and high IQ scores can be expected to reach higher levels of performance than can those with poor self-concepts and/or low IQ scores.

Hypothesis IV - Race, sex, grade level, and socioeconomic differences in self-concept. Although it was hypothesized that there would be no differences in self-concept scores which were attributable to the sex, race, grade level, or socioeconomic status of the subject, the data confirmed the fourth hypothesis only in part. As predicted, there were no significant sex differences in global self-concept mean scores, but some of the more specific dimensions of the self-concept did reflect sex differences. For example, females' mean scores on the Behavior and Social Self subscales were significantly higher than were those for males, suggesting greater conformity to accepted standards of conduct on the part of female adolescents. Male subjects, by comparison, revealed significantly higher levels of anxiety, but they also tended to express greater satisfaction with their physical appearance than did their female classmates. One might ask whether the higher scores for males on Physical Appearance and Attributes resulted entirely from greater male satisfaction with their physical qualities or whether the

females might be somewhat more critical of themselves in a society which still places great emphasis on feminine beauty. Considering the age of the females involved and the constant quest of adolescents for popularity, especially with the opposite sex, it is entirely possible that the latter factor also was involved in the difference in scores.

There were also race differences in self-concept scores. Black students' global self-concepts, as indicated by the SEI, were significantly less positive than those of the white students, and blacks also had lower global self-concept scores on the Piers-Harris, but the difference was not statistically significant. The mean scores of black subjects on all indicators of academic self-concept (SCA, Intellectual and School Status, and School-Academic) were significantly lower than those of whites, suggesting that black students' perceptions of their potential for academic success were generally less positive than those of their white counterparts. Mean Social Self scores were also significantly lower for black students. When examined by race, then, the data revealed that black students tended to view themselves as less capable academically and less socially adept--or at least less socially accepted--and to have lower levels of overall self-esteem than white students.

While there was a general upward trend in mean self-concept scores from grade seven to nine, and from grade nine to eleven, there were no significant grade level differences in

global or academic self-concept. Mean scores on the SEI General Self and Social Self and the Piers-Harris Popularity subscales were significantly higher for the eleventh-grade subjects, however, suggesting that older adolescents might be more "at home" with themselves following the physical and emotional developments wrought by puberty and that they have acquired greater skill in getting along with other--perhaps an adjunct of a more settled hormonal state.

For the subjects included in this study, there were social class differences in both global and academic self-concept, with Social Class I subjects having the highest mean scores and Social Class V subjects having the lowest. There were also significant social class differences in Behavior and General Self subscale scores, with those in the top social classes tending to view themselves more positively than those of more limited socioeconomic means. The data revealed that adolescents in the lower social classes perceived themselves as exhibiting poorer standards of conduct and having less academic potential and that they also had significantly lower levels of self-esteem than was characteristic of those of higher social status.

In summary, the data compiled in this study tended to confirm that there are no sex or grade level differences in global self-concept or academic self-concept, although there were some variations in subscale scores. There were, however, race and socioeconomic differences not only in non-academic

aspects of the self-concept, but also in overall self-concept and self-concept of ability. Therefore, the fourth Hypothesis could be only partially accepted.

### Discussion

Much of the material which has been written about the self-concept in relation to academic achievement has ascribed great importance to the role of the student's feelings about himself or herself. As indicated in Chapter I, Lecky (1945) felt that efforts at remediation would be futile without improvement in feelings about the self. The implication of such writings is that if educators can find ways to enhance the self-concepts of students, improvements in scholastic performance will almost automatically occur. Yet, in numerous studies, the correlations between self-concept and academic achievement, while usually positive, have been rather low, especially when compared to correlations between intelligence test scores and achievement test scores or grade point average.

The review of the literature cited in Chapter II revealed that of the non-intellective variables used to predict achievement, the Self-Concept of Ability Scale (which attempts to assess academic self-concept only) has generally yielded higher coefficients of correlation with various achievement criteria than have global self-concept instruments.



The results of the present study also revealed positive correlations between global self-concept and achievement scores. When compared with the correlations derived for the measures of academic self-concept, however, those for the global self-concept were usually lower, indicating that students' academic performance was more closely related to their self-concept of academic ability. For the total sample, as well as for most of the subgroups (sex, race, grade, level, and social class), scores on the Self-Concept of Ability Scale showed the strongest and most consistent correlations of the non-intellective variables.

The results of the analysis of self-concept and achievement correlations by sex, race, grade level, and social class bring to attention the need for caution in the generalization of self-concept research. Because the self-concept has been found to be related to academic achievement for heterogeneous samples, it has often been assumed that such a relationship occurs universally. Yet, the evidence in this study suggests that the relationship does not hold across subgroups.

The research of Boshier and Hamid (1968), Iglinsky and Wiant (1973), Williams (1973), Marx and Winne (1975), and Dean (1977) indicated that the relationship between self-concept and academic achievement is either nonsignificant or even negative, as indicated in the work of Marx and Winne. There is some evidence that when the sample is homogeneous

(e.g., all gifted students as in the Dean sample) that the role of self-concept is less likely to be significantly correlated with scholastic performance. Breaking the total sample down into sex, race, grade level, and social class subgroups made it possible to examine the data in this study for groups of subjects which were homogeneous in at least one characteristic.

The data for black subjects, for example, indicated that global self-concept was not significantly related to grade point averages in the major subject areas, and the same trend was observed for ninth-grade subjects and for subjects in Social Class I. The self-concept and achievement relationship was also rather erratic for those students who were classified as being in either Social Class IV or Social Class V. To assume, therefore, on the basis of the data for the total sample, that all adolescents' feelings of personal adequacy are significantly related to their classroom and standardized test performance would be presumptuous. The present research suggests that for blacks, middle adolescents, and students in the highest and lowest social classes, success in school is not significantly related to feelings of overall self-worth. For such students, mastery of academic tasks would not necessarily enhance the self-concept, nor would improved self-images lead automatically to improved scholastic performance.

Although the data did not confirm that only the academic self-concept is significantly related to achievement, the results did indicate that the aspect of the self-concept which was most consistently related to the various achievement criteria was the academic self-concept. Yet, for students in Social Class I, even the academic self-concept was not significantly related to achievement. One possible explanation is that students in the top socioeconomic level generally had more positive self-concepts (as the data indicated), but within that group, there were variations in academic performance.

For the students included in this study, there were subgroup differences in intelligence test scores. White subjects, for example, has significantly higher mean scores on the verbal portion of the Cognitive Abilities Test ( $\underline{M} = 105.55$ ) than did the black subjects ( $\underline{M} = 88.05$ ),  $\underline{p} < .001$ ). There were no significant sex differences in verbal IQ scores, but there were grade level differences, with mean scores of 102.49, 99.62 and 105.01 for subjects in grades 7, 9, and 11, respectively ( $\underline{p} < .001$ ). There were also socioeconomic differences in IQ scores, with a definite downward trend from Social Class I to Social Class V. Verbal intelligence test means for the different socioeconomic levels were as follows: Social Class I, 112.49; Social Class II, 108.36; Social Class III, 106.08; Social Class IV, 98.26; and Social Class V, 87.34 ( $\underline{p} < .001$ ). Although the IQ differences quoted here refer just

to the verbal IQ, similar differences were found for both the quantitative and nonverbal aspects of intelligence test scores.

If the academic self-concept is considered to be the student's realistic appraisal of his or her "own ability to learn the accepted types of academic behavior" (Brookover, Thomas, & Paterson, 1964, p. 271), then it would seem reasonable to assume that academic self-concept scores would parallel the general trends of IQ scores. That line of reasoning would appear to hold for the self-concept scores of males and females. There were no significant sex differences in mean verbal IQ scores (102.17 for males vs. 102.73 for females), and there were no significant sex differences in academic self-concept scores. There were race and socioeconomic differences in IQ scores, and the self-concept of ability scores for blacks and for students in the lower social classes reflected comparable differences. At least for the subjects included in this study, students' estimates of their ability to succeed in school were generally consistent with their measured intelligence test scores.

While school personnel usually do not discuss specific IQ scores with students, there are countless ways in which students receive feedback from others regarding their apparent academic ability. Placement in classes for the gifted and talented, referral for remedial work, grades received on report cards, and the level of regard for one's ability shown

by teachers, parents, and peers serve as constant indicators of others' perceptions of the student's ability to perform academic tasks. Also, fairly early in their academic careers, students develop both the personal perception and cognitive ability to make rather reasonable comparisons of their scholastic performance with that of their peers. It is a rare student who, when asked to name the "smartest" persons in the class, could not do so with some accuracy. Particularly during adolescence, students are constantly comparing themselves with others, and it seems reasonable to assume that such evaluations would carry over to the academic self-concept, thereby accounting at least in part for the strong correlations between self-concept of ability scores and academic achievement criteria. The data suggest that the subjects in this study had generally developed realistic perceptions of their academic ability levels.

Insofar as the relative value of intellectual and non-intellectual variables in predicting academic achievement is concerned, the data revealed that IQ scores were considerably more accurate than mere self-concept scores. This finding is consistent with that of Jones and Strowig (1968) and Rubin, Dorle, and Sandidge (1977). Also, as was true in the Williams and Cole study, the data showed significant correlations between IQ scores and self-concept scores. Despite the evidence that self-concept is related to academic achievement even when IQ is controlled, the data supported the position that,

for the instruments used in this study, scores on intelligence tests are more strongly related to academic achievement criteria than are self-concept scores.

Such findings provide additional support for the continued use of intelligence test scores as general indicators of students' aptitudes for performing academic tasks such as reading, writing, and calculating. They do not, however, imply that IQ tests are infallible or that they should be used to label or categorize students. They simply emphasize that IQ - achievement correlations are stronger and more consistent across subgroups than are self-concept and achievement correlations. The lack of consistency of self-concept scores for the various subgroups suggests that non-intellective variables would be of limited value in predicting academic achievement. Such instruments would seem to be better suited to providing supplementary information about individual students' feelings about themselves. Self-concept inventory scores, when combined with personal observation and daily contact, would be very helpful to school personnel in understanding particular students and in working more effectively with them. Therefore, it might be reasonable to include some type of regular assessment of self-concept in system-wide testing, not primarily for placement or prediction of performance, but for greater understanding of individual students.

Despite such value, however, there are some psychometric problems related to self-concept instruments. For example, total scores on the Piers-Harris Children's Self Concept Scale and the Coopersmith Self-Esteem Inventory were significantly correlated ( $r = .81, p < .001$ ); therefore, one might expect that the correlations between subscale scores would be similar. The results derived from the two instruments showed much variation, however, even on the subscale designed to assess the academic self-concept. The Piers-Harris and the SEI appear to be among the most reputable and the most thoroughly researched of the self-concept instruments. Yet, the disparities in the correlational patterns seriously limit their use in predicting academic achievement. The incongruities in correlational patterns and the apparent lack of divergent validity may help to explain, at least in part, the conflicting results which have plagued self-concept research in general.

Relatively little research has been conducted on the subscales of the self-concept inventories to this point, but the results in the present study indicate the need for caution in generalizing results based on the subscales. The Piers-Harris CSCS appeared to discriminate more consistently among the various dimensions of the self-concept for the different subgroups; there was considerable overlapping of the SEI correlations, and the General Self scores often exceeded the School-Academic scores in magnitude of

correlation with achievement criteria. Furthermore, because the academic self-concept provides a part of the total score which represents the global self-concept on both the Piers-Harris and the SEI, one might ask whether the low positive correlations between global self-concept and academic achievement are largely a function of the relationship between the academic self-concept and achievement.

Stenner and Katzenmeyer (1976) advocated the use of nonverbal IQ scores and self-concept scores in the prediction of academic achievement. Three dimensions of IQ (verbal, quantitative, and nonverbal) were considered in this study, as well as both global self-concept and academic self-concept scores. Yet, the results of the multiple regression analysis indicated that nonverbal IQ and global self-concept scores accounted for relatively small amounts of variance in achievement scores. Self-concept and nonverbal IQ scores can provide some supplementary information, but there would seem to be little justification for their use to the exclusion of verbal or quantitative IQ scores. If only one non-intellective variable were to be used to predict academic achievement, the data suggest that the Self-Concept of Ability Scale would be preferable to either of the global self-concept instruments used in this study. The 8-item SCA appears to be a quick, effective means of assessing the academic self-concept, and the evidence indicates that this instrument can be used as a relatively reliable predictor of academic achievement.



As indicated in Chapter II, the research literature on sex, race, age (grade level), and socioeconomic differences in self-concept contains conflicting reports. Consistent with the summary provided by Maccoby and Jacklin (1974), the present data revealed no significant sex differences in global self-concept, although there were some differences in subscale scores. In contrast to the subjects studied by Trowbridge, Trowbridge, and Trowbridge (1972) and Powers et al. (1971), the blacks in this study had a significantly lower mean global self-concept score on the SEI and on all measures of academic self-concept than did their white counterparts. Trowbridge et al. found that students in the lower socioeconomic levels had higher mean self-concept scores than those in more favorable circumstances, but that relationship did not hold true for the subjects in this study. On the contrary, students in the lower socioeconomic levels had significantly lower mean self-concept scores than those in the higher social classes.

The present findings are also contradictory to those of Morse (1964) which suggested that students' self-concepts become gradually less positive as they advance through the grades in school. There were grade level differences, but it was the older subject who was more likely to have a positive self-concept. The increase in mean self-concept scores that appeared with increase in grade level in this study might be related to the various changes that occur during

adolescence. The seventh-grade student (mean age = 12.19, SD .50) is more likely to be in the throes of social uncertainty and uneven physical and emotional development. The typical ninth-grader (mean age = 14.06, SD .50) has greater physical and social maturity than the seventh-grader but less than the eleventh-grader. By the time the student has reached the eleventh grade (mean age = 16.06, SD .34), he or she has generally reached physical maturity, has achieved that outward symbol of maturity--at least to his or her peers--the driver's license, is an "upperclassman," and may be employed. It is not surprising that, regardless of their academic performance, the older students have greater confidence and more positive feelings about themselves.

While the data compiled in this study support the use of intelligence test scores in the prediction of academic performance, the study in no way negates the value of affective education or the need for educators to be aware of the necessity of fostering students' favorable feelings about themselves. While it is rather naive to assume that a positive self-concept will automatically result in improved academic performance, it is probably true that students within any given ability range will perform better if they have positive self-concepts. Likewise, they will probably be more compatible family members, more pleasant social companions, and possibly better athletes. Feeling good about themselves,

subjects can be free to utilize more effectively whatever potentials they possess.

If, however, we accept the premise that there are differences in academic ability and that individuals do vary in their capacities to paint, to sing, to write, or to perform trigonometric functions, then it seems reasonable to assume also that there will be differences in the academic self-concept or one's personal assessment of his or her general ability to perform academic tasks. Simply aiding a student to have a more positive global self-concept is hardly likely to transform a student with below average IQ scores into an advanced physics student. Rather, the challenge to educators, and most especially to classroom teachers, would be to provide as many realistic opportunities for academic success as possible. Through the mastery of successively more difficult tasks, students can be expected to gain greater confidence in their ability and to have improved academic self-concepts.

The literature on self-concept theory offers little hope for making drastic changes in students' global self-concepts. Ideas which are basic to the self are learned very early and are resistant to change (Lecky, 1945 and Combs & Snygg, 1959). Yet, success in small academic tasks could, over a period of time, instill somewhat more positive feelings about academic ability.

### Implications for Further Research

The data compiled in this study suggest that there is a need for further analysis of the relationship between self-concept and achievement by sex, race, socioeconomic status, and grade level. In their efforts to secure a heterogeneous population sample, researchers may overlook variations in relationships within subgroups. When the largest number of subjects in a study are white members of the middle class, it is not surprising that the findings of the total sample reflect the trends for that particular segment of the population and that trends which characterize the subgroups within the sample become obscured.

There is a need for additional study of the variations not only in correlations between self-concept and achievement but also of the differences in self-concept which might be related to race, age, or social class. In particular, the subgroup variations in academic self-concept need to be examined more closely to determine whether apparent race differences are actually a function of socioeconomic status.

The present study also revealed a need for further refinement of instruments used to assess self-concept. It would be interesting to see the results which would be obtained if the various self-concept studies were replicated in every detail except for the substitution of an alternate self-concept instrument. The data in this study, for example, suggest that the conclusions might have been considerably

different if either the SEI or the Piers-Harris had been used to the exclusion of other instruments. To illustrate, the Piers-Harris, with a few exceptions, tended to support the hypothesis that the academic self-concept is the dimension of the self which is most clearly related to scholastic performance. Yet, data based on the SEI revealed that almost all aspects of the self-concept were related to academic achievement for some subgroups. The data emphasize once again the psychometric vulnerability of self-concept instruments as they now exist.

There is a definite need for improvement of the self-concept subscales if they are to be used. In other studies, the Piers-Harris has been subjected to factor analysis (Piers, 1977), and in this study, the subscale scores were generally more consistent across subgroups and achievement criteria than were those for the SEI. Furthermore, if the subscales are to be used at all extensively in research, the test designers need to develop improved scoring techniques. The present system is time-consuming and tedious, to say the least, and will probably continue to inhibit the amount of research which is compiled on the non-academic dimensions of the self-concept.

In summary, the data suggest that there are significant relationships between self-concept, especially the academic self-concept, and achievement. This finding has been reported repeatedly in the literature. Yet, until adequate

instruments are developed or until present inventories are refined to the point that they show both divergent and convergent validity, questions will remain as to the credence due to self-concept research. Despite such questions, the relationship between feelings about the self and performance in school should be thoroughly examined. Within that relationship may lie some important clues as to how individual students may best be helped to develop whatever potentials they possess.

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