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The Tennessee Self-Concept Scale as an indicator of community college student retention and need for remediation

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THE TENNESSEE SELF-CONCEPT SCALE AS AN INDICATOR OF COMMUNITY COLLEGE STUDENT RETENTION AND NEED FOR REMEDIATION

by

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The purpose of this research was to assess the relationships between (a) students' level of self-concept and placement into at least one remedial course and (b) student's level of self-concept and retention into the third quarter of enrollment at Randolph Community College (RCC), Asheboro, North Carolina. One hundred and three first time freshmen at the College comprised the population.

The level of self-concept was determined by students' scores on the Tennessee Self-Concept Scale. Remedial placement was determined by RCC's placement testing system, which is based on results of the College Board's Assessment and Placement Services for Community Colleges. Chi square tests of association revealed that level of self-concept was not significantly related to placement into at least one remedial course but that level of self-concept was significantly related to retention at the College ($p = 0.016$). Of students with children, 79% of those with adequate self-concept persisted while only 37.5% of those without adequate self-concept persisted. A clear trend of students' final status was also noted with 31% of persisters, 55% of voluntary leavers, and 69% of academic leavers having inadequate self-concept.

The results of this research support the need for an orientation course that would focus on students' self-concept but do not support placement into that course based on results of academic placement tests.

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the Graduate School at The University of North Carolina at Greensboro.

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CHAPTER I

THE TENNESSEE SELF-CONCEPT SCALE AS AN INDICATOR OF COMMUNITY COLLEGE STUDENT RETENTION AND NEED FOR REMEDIATION

Research into student retention in postsecondary education necessarily involves identification of the high-risk student (Japely, Kennedy, & Walleri, 1987, p. 117). Identification of the high-risk student entails identification of predictors of student success or failure. Open-admissions community colleges have inherited models of academic prediction from the more traditional sectors of higher education. These models are inadequate in the face of the complexity of the community college's diverse clientele (Tinto, 1982). The contemporary community college with an open-admissions policy must look beyond the demographic and cognitive variables descriptive of high risk students in other sectors of higher education (ibid.). A growing body of researchers in higher education are investigating affective variables such as self-concept as a means of identifying high-risk students (Crook, Healy, & O'Shea, 1984; Jones, 1978; Higbee & Dwinell, 1992; House, 1992).

Cohen and Brawer (1982) have noted that community colleges have made "notable changes" in the American system of higher education by "expanding access" (p.19). These authors note that well into the middle of this century, few students attended college and that those students who did were from the middle and upper classes. Following World War II, the community colleges welcomed students " who were not being served by traditional higher education" (p. 21). Cohen and Brawer characterize these community college students as students

who are unable to afford the tuition of the traditional colleges, who cannot attend college full-time, whose ethnic background formerly barred admission to traditional colleges, who have had "inadequate preparation in the lower schools," who have had to interrupt their schooling, who need job training or retraining, or who, for a variety of reasons, cannot attend the traditional colleges (p. 21).

For the purposes of this discussion, the label "traditional colleges" refers to those institutions closer to the older model of higher education as a closed community of scholars. The "traditional" students at those colleges have traditionally been the seventeen to twenty-two year old students from the higher socioeconomic echelons (ibid.). Conversely, the "nontraditional students" are those who only recently have had access in large numbers to higher education. As a whole they range widely in age, with a mean age in the mid to late twenties (p. 31). Cohen and Brawer characterize these students as lower in "ability" (p.36) and seriously more likely to drop out of college than their peers at traditional colleges (pp. 53-57). They are, consequently, the most "at risk" of all students in the American system of higher education and constitute the main body of high-risk students in the system (Tinto, 1987, pp. 24-32).

Astin (1985) describes the American system of higher education as a hierarchy. Colleges at the base of this hierarchy seek to emulate those at the top (p. 11). However, conditions at the top of the hierarchy are far different from conditions at the bottom. The colleges at the top (the Ivy League, Stanford, MIT, and so forth) command tremendous human and fiscal resources. These traditional colleges attract students who score well on academic aptitude tests and who make top grades in high school. For all the democratization of higher education following World War II, these elite colleges remain the bastions of the

upper socioeconomic echelons, and the community colleges at the bottom remain the preserve of the lower (p. 10).

In Astin's view, then, the American system of higher education has not become more democratic in the last half of this century. The community colleges have merely added a bottom layer to the hierarchical pyramid to serve those students whom the traditional colleges deem too much at risk to admit. With ample fiscal resources, the more elite colleges can afford to ignore this population. Without adequate resources, the community colleges must not only continue to serve these students, they must focus attention and existing resources on retaining them.

With funding based largely on enrollment, community colleges are under tremendous pressure to identify and retain their high-risk students. Statistics show that nearly half of community college students are high-risk. The 1992 freshman to sophomore year dropout rate for two-year public institutions was 47.9%, compared to 27.4% for two-year private, and 31.9% for four-year public, institutions. The rates for doctoral granting institutions were 23.8% at public and 16.5% at private institutions (American College Testing Program, 1992). At the bottom of Astin's hierarchy, then, retention is a matter of institutional survival (Noel, 1985; Wattenbauger, 1985).

In committing resources to attend to the retention problems of high risk students, the community colleges need to target those students who are most likely to drop out. The 1992 freshman to sophomore drop-out rates clearly show that high-risk students are not confined to the nontraditional sector of higher education. While about half of community college students do drop out, about half do not. Even at the more exclusive doctoral granting institutions, about one

fifth of students drop out. As Jones and Watson (1990) have pointed out, not all nontraditional students are high risk, and some traditional students are high risk.

E. W. Gordon (1992) has coined the term "defiers of negative prediction." These defiers of negative prediction are those students whom the community colleges were built to serve and who are served by the elite colleges as "special admissions." Gordon argues that the normal predictors of academic success constitute "status variables" and that colleges must look toward "function variables" in their efforts to serve and retain students who have been traditionally under-represented in higher education (ibid.). These "function variables" are affective variables that would explain how some nontraditional students are able to overcome multiple barriers to success and how some traditional students fail in spite of ample academic aptitude and few socio-cultural impediments. The cognitive and socio-cultural status variables largely describe factors that the student brings to the campus. Concentration on these variables have led some researchers to conclude that colleges can do little to affect students' chances of success (Bean & Metzger, 1985).

Jones and Watson (1990), however, define "high risk" as "a theoretical concept based on an implicit degree of negative risk associated with the educational experience" (p.1). The student's experience on a campus is his/her relationship to the campus environment. This perspective on retention problems draws attention both to those factors that the student brings to campus and to how those factors interact with the campus experience. Such a perspective supports Gordon's contention that colleges need to attend to affective variables. Affective variables more closely measure how the student will react to his/her environment.

Research on high-risk students in community colleges must first take into account the difference between the community college student and the student at the selective college. Second, it must take into account the difference between the non-residential, open-admissions community college as an environment and the residential, selective college as an environment. High risk is descriptive of the student's relationship to the student's environment. Exploring affective variables takes into account the differences within various categories of students and the differences in how those students will react to the campus environment.

For the community college student, however, the campus environment is only a small part of his/her total environment (Tinto, 1987, p. 108). Harvard, for example, can admit a promising student from the inner city, but in so doing, Harvard moves that student from the inner city to Cambridge, Massachusetts. When the local community college admits the inner city student, that student returns daily to his/her family and community. It is not surprising, then, that for such commuter students, off-campus factors have as much or more influence on academic success as do on-campus factors (Pascarella, Duly, Iverson, 1983, p. 93).

The difference between research on community college students and research on more traditional college students is analogous to the difference between physics experiments performed in laboratories and those performed in open fields. The closed community of the traditional college is like a laboratory. In the laboratory the physicist may wish to predict the trajectory and landing point of a ball. Measuring all the relevant details about the ball and the force with which it is thrown, the physicist in the laboratory can fairly accurately predict what will happen. The open community of the community college is like an open field.

which it is thrown, the physicist in the laboratory can fairly accurately predict what will happen. The open community of the community college is like an open field. In an open field, the ball's trajectory is heavily influenced by the wind and other weather conditions. The physicist may even lose the ball to the clutches of a stray dog. The problem for conducting research on community college students is to identify factors that would keep the ball moving in a predictable fashion in spite of extraneous interference.

In that the variable self-concept describes how a person responds to his/her overall environment (Wylie, 1961, p. 6), it has shown promise both as a predictor of academic success and as a basis for design of interventions in both public school and postsecondary arenas (Purkey, 1979; T.S. Jones, 1978; Finn, 1989; Crook, Healy, & O'Shea, 1984). Shavelson & Bolus (1982) define self-concept:

> Self-concept, broadly defined, is a person's perceptions of him- or herself. These perceptions are formed through one's experience with and interpretations of one's environment and are influenced especially by reinforcements, evaluations of significant others, and one's attributions for one's own behavior. (p. 3)

Shavelson & Bolus define self-concept as a general facet composed of various specific facets in a hierarchical relationship. This model of self-concept (see Figure 2.1, p. 20, below) views general self-concept as composed of various categorical facets such as academic self-concept and physical self-concept. The categorical facets are, in turn, composed of more specific facets such as the subject's self-concept of his/her ability in English or mathematics. Thus, a student may develop part of his/her academic self-concept based on experience

the student to either lack of work or lack of ability. The experience in math class, however, works with experience in English and in other classes to form the student's academic self-concept. The academic self-concept works with other areas of the student's experience to form the student's perception of him/herself as a whole. This holistic perception is the general self-concept.

Shavelson and Bolus use the Tennessee Self-Concept Scale (TSCS) to measure the general facet of self-concept (1982). This instrument was developed and devised for an adult population (Fitts & Roid, 1989, p. 3) and is relatively easy to administer. While the validity of the TSCS's subscores are frequently questioned (Hoffman & Gellen, 1983; Marsh & Richards, 1988; Bolton, 1976; Bentler, 1972), the Total Positive Score for the scale is generally accepted as a measure of the general facet of a multifaceted construct of self-concept (Suinn, 1972; Hoffman & Gellen, 1983; Shavelson & Bolus, 1982). The TSCS shows promise as an instrument useful in measuring the general self-concept of community college students. Consequently, the scale may be useful in studying the relationship between self-concept and community college students' success.

Significance

The North Carolina Community College System is concerned about the adequacy of its retention efforts and remedial programs. In 1989 this system published Gaining the Competitive Edge, the report of the system's Commission on the Future. This report calls for improvements in current assessment of, and programs for, "underskilled adults" in the state's public community colleges (pp. 20-25). Analysis of these factors most obviously begins with identification of characteristics of high-risk students.

Readily obtainable data on students at a North Carolina Community College campus are restricted to status variables: demographic data, high-school records, and placement test scores. Most community colleges in the North Carolina system use some form of achievement or placement test to measure the student's need for remedial instruction (North Carolina Association for Developmental Studies, 1990, pp. 1-2). In efforts to improve retention, about one third of these colleges are instituting orientation courses. With limited data to define a high-risk group, many colleges are relying heavily on placement test scores to determine need for orientation courses. In some colleges, more extended or intensive orientation courses are offered to the students who are placed into the remedial programs.

The two most popular orientation programs being used or serving as models are John Gardner's "Freshman Year Experience" and Dave Ellis's "Becoming a Master Student." Gardner's texts cover study skills as well as such topics as relationships, personal value systems, stress management, and life skills (1989). Ellis's program is based on Maslow's theory of self-actualization and contains topics such as creativity, relationships, and health in addition to the usual "academic skills" topics (1991). These programs are, thus, based on the assumption that students need remediation in affective as well as cognitive areas.

Briefly, then, the situation in the North Carolina Community College System is that (1) the colleges have limited resources and wish to improve retention to increase their resources since funding is based on enrollment, (2) the colleges already have remedial placement systems that evaluate need for, and provide instruction in, academic skills, (3) a need is felt, but not proven, that one way to

improve retention is to add Gardner/Ellis-style orientation courses, and (4) the new dimension that these orientation courses will add to the remedial programs is attention to affective areas. If these North Carolina community colleges are determining need for orientation based solely on academic test scores or high school records, they are functionally equating low academic test scores with problems in the affective domain. The question arises, then, as to whether achievement test scores, in and of themselves, are adequate to identify high risk groups who need special interventions like these orientation courses.

Several other questions then arise as North Carolina's community colleges meet the challenges of the Commission on the Future's recommendations to study retention and improve remediation. First, is whether the current academic assessment systems should be expanded to include assessment in the affective domain. Second, is whether achievement test scores are adequate indicators of affective domain barriers to success in the community college setting. One such barrier may be impaired self-concept, and impaired self-concept may not be directly related to a low score on the college's placement test. Third, then, is whether resources should be spent on orientation classes for students who do not need them: If a student's self-concept is adequate, he/she may not need an additional orientation class even if the student's score on the college's placement test is low.

The body of research on self-concept and college achievement is not nearly as extensive as research on college attrition or research on self-concept and public school achievement. Crook, Healy, and O'Shea (1984) found that self-concept as measured by the Tennessee Self-Concept Scale (TSCS) was a factor in student achievement among university students. Again using the TSCS,

Jones (1978) found that self-concept was positively associated with academic achievement at three North Carolina technical (community) colleges. Importantly, Ferguson and Bitner (1984) found no significant differences between TSCS results for remedial and non-remedial students.

Randolph Community College (RCC) is a medium size, rural college (FTE: 1300) in the North Carolina system. The college has an academic remediation program. Placement into this program is based on the College Board's battery of tests, Assessment and Placement Services for Community Colleges. This battery of tests was developed specifically for the community college population. Students who score below standard scores of 49 on the math, reading, and English sections of this test are required to take remedial classes. Students may be exempt from testing and remedial classes if they have transfer credits in math or English or SAT Verbal scores above 400 and SAT math scores above 450. The college would like to offer an orientation course for students who need it. The Dean of Instruction feels that an Ellis/Gardner-style orientation course would improve retention at the college.

The college does not have resources to offer this course to all students and, thus, needs to target high-risk students who would need this course in addition to the academic remediation courses. The dean has suggested placement into the course based on academic placement test results. The director of the remedial department has countered that the students placed into the academic remedial courses may not necessarily be those students who need the course and that placing students into the course based solely on academic test results may not target many students who would need the orientation course. The director of the remedial department has further questioned whether offering

the orientation course is not wasting resources on a problem that may not exist. If students are not dropping out because of lower self-concept, for example, then offering a program designed to improve self-concept would be wasteful.

This project addressed the issue of self-concept and college retention at Randolph Community College. If, in conjunction with demographic data and placement test scores, the TSCS proved useful in identification of high risk students, Randolph Community College might better manage the resources it uses to increase retention by more accurately targeting those students who need the course.

Conceptual Basis

The conceptual basis for this study was:

1. Self-concept as it relates to academic achievement and the disadvantaged (economic, social, and academic high risk populations).
2. Retention of nontraditional students in postsecondary education.

Purpose

The central questions asked in this study was: (a) does self-concept as measured by the Tennessee Self-Concept Scale relate to students' placement into remedial courses at Randolph Community College? and (b) does self-concept as measured by the Tennesse Self-Concept Scale relate to retention at RCC?

The Problem

The problem was to improve retention efforts at RCC by determining whether RCC needs to add a remedial course which focuses on students' self-concept, and if so, whether placement into that course should be based

solely on academic placement test scores.

Hypotheses

The following hypotheses were tested at the p=.05 level of significance:

There is no significant difference between the incidence of students whose TSCS composite scores indicate inadequate self-concept within the group of students whose placement test scores show need for at least one remedial class and the incidence of students whose TSCS scores indicate inadequate self-concept within the group of students whose placement test scores or other criteria for exemption (SAT scores, transfer credit) show no need for remedial classes.

There is no significant difference in the incidence of students whose TSCS composite scores show inadequate self-concept among each group identified as academic leavers, voluntary withdrawals, or persisters.

Definitions

For this study, the following definitions were used:

1. Persistence (Retention): Students who (a) enrolled at RCC for the first time in the fall quarter and (b)remained continuously enrolled through the second (winter) and third (spring) quarters at RCC.
2. Academic leaver: Students who (a) enrolled at RCC for the first time in the fall quarter and (b)did not remain continuously enrolled at RCC for the second and third quarters and (c) held a final GPA below 2.0 (C average)
3. Voluntary withdrawal: Students who (a) enrolled at RCC for the first time in the fall quarter and (b)did not remain continuously enrolled through the second and third quarters and (c) had a final GPA above 2.0 (C average).

Delimitations

Because of logistical problems inherent in community college student tracking and because of the limited scope of this study, retention was defined only as third quarter enrollment following first and second quarter enrollment. Third quarter enrollment suggested that the student has adjusted to the initial difficulties of integration into the life of the college, which is the purpose of orientation classes.

This study excluded college transfer students, vocational (one-year degree) students, and Associate Degree Nursing (ADN) students. *

The Tennessee Self-Concept Scale was used to measure self-concept.

Limitations

The value of the conclusions reached in this study will be limited to Randolph Community College or colleges with similar student populations and instructional environments. Perhaps the usefulness to other campuses will be limited to serving as a model for local research.

*The college transfer students at RCC are enrolled as University of North Carolina at Greensboro Extension students. Vocational students receive no entrance assessment, and the ADN students enter the college through a separate and selective placement system.

CHAPTER II

REVIEW OF THE LITERATURE

This research project tackled two constructs — community college retention and self-concept. These constructs are so important that they demand immediate attention, and, yet, issues in their definition and problems in their measurement may still be a generation away from resolution (Hansford & Hattie, 1982; Byrne, 1986). Historically, then, this project stands in the infancy of specialized research on high-risk community college students and on the variables which may predict their success.

The central issue of this particular study was how community college students relate to their environments. The subjects of this study were community college students who were pursuing technical, associate degrees at a public, open-admissions, nonresidential community college. The measure of academic success was their retention into the third quarter at that college. The independent variable was the general facet of self-concept, rather than the more specific facet of academic self-concept (for an explanation of the general facet of self-concept, see pp.18-20, below). While a tremendous amount of research has been done on retention and on self-concept and academic success, virtually no research has linked self-concept to retention in the community college sector of higher education.

As noted earlier, the community college student exists in an environment quite different from that of the traditional-age student attending a more traditional, and residential college. Further, his/her course of study is quite different. The

purpose of technical education is occupational training with lesser attention paid to such writing, math, and general instruction as is relevant to the degree (Cohen & Brawer, 1982, pp. 191-222, 311-341). The Southern Association of Colleges and Schools (SACS), for example, requires only fifteen semester hours of general education course work for an associate degree (Criteria for Accreditation, 1984, p.14). At Randolph Community College, where this study's subjects are pursuing degrees, the mean number of quarter hours credit required for a degree is 120.8, and the mean number of general education credit hours required for the degree is 27, or about 22% of each curriculum (Randolph Community College, 1992). Although higher than SACS requirements, this low ratio of general education courses to vocationally oriented courses calls into question the relative place of classically defined variables, including academic self-concept, in studies of the "academic success" of these students.

Any sort of academic environment assumes a relationship between the learner and what is learned. This assumed relationship logically dictates what the institution demands of the student and, consequently, what personal resources, such as various facets of self-concept, the student must muster to succeed. Work on such paradigms in the community colleges is quite recent (Nonliberal Arts Curriculum Study, 1992; Erikson, 1992). A grasp of the difference between the educational environment in a more elitist, traditional program and the educational environment in a technical program is critical to approaching the literature on college retention.

In the technical programs, the math and English courses are deemed "general education," not "liberal arts." As noted above, even at technical colleges, these general education courses hold a small place. In the more elitist

liberal arts education of four-year colleges, the curriculum is designed to preserve the past (the canon) as the college defines it. The student is expected to assimilate that knowledge and accommodate him-/herself to it (Erikson, 1992, p. 17). In contrast, community colleges adhere to a general education paradigm which "emphasizes experimentation and problem-solving as it focuses on the immediate needs of the students and their future" (ibid.). The technical educational programs of the community colleges are not designed to produce scholars. They are designed to meet the student's need for future employment.

For the technical college, then, the variable retention is a more apropos measure of institutional and student success than variables such as grade point average. Opposed to junior college students aspiring to transfer, high school students aspiring to be admitted to a selective college, or senior college students aspiring to attend graduate or professional school, these technical students are pursuing terminal degrees for job placement. Completion of the degree, regardless of GPA, is the successful completion of the so-called "academic" program.

Lastly, in contrast to classically defined measures of academic achievement, retention is a behavior, not a measure of inferred aptitude. In his breakthrough study, Tinto (1975) recognized this critical point. Tinto defines attrition as a behavioral reaction to lack of student-institutional "fit." Tinto's theory, however, limits the student's environment to the campus. While this limitation may be quite logical for students at residential colleges, it is less logical for students at nonresidential community colleges.

Over the past thirty years, research into self-concept and retention has, naturally, become more sophisticated. Improved statistical techniques, better

defined populations and variables, and the development of conceptual models have allowed researchers to better deal with student diversity in higher education. The following review of this literature covered: (1) the larger conceptual models of both self-concept and retention, (2) research on self-concept and academic achievement, and (3) research on self-concept and retention.

Models of Self-Concept and Retention

Self-Concept

Brief historical overview.

The idea of self-concept, or self-esteem, has a long history in scholarly discourse. The seminal works on what we currently refer to as self-concept are generally traced to William James at the beginning of this century (Wylie, 1961, p. 1; Wells & Maxwell, 1976, pp. 14 - 35; Coopersmith, 1967, pp. 1 -5; Jones, 1978, pp. 3-7). From James, the development of work on self-concept in psychology and psychotherapy and in the social and behavioral sciences continued through the mid-1960's when the application of the construct to problems in education became popular.

The sixties, or more accurately, the Vietnam Era (1965-1975), saw a rise in concern for personal development. Theories such as Maslow's Hierarchy (1968) and Block's Mastery Learning (1971) challenged developers of curricula to focus on the learner. In the public school arena, Bloom (1971) , Purkey (1970), and Coopersmith (1967) were laying methodological groundwork for incorporating affective variables into the curriculum. The opening of postsecondary educational opportunity with the Higher Education Acts of 1965 and 1972 challenged old ideas of variables predictive of collegiate academic success

(Brubacher & Rudy, 1976, pp. 235-237). In the new arena of community college and adult education, Cross (1976) and Roeche (1976, 1972, 1968a) advocated transfer of the work of Bloom, Purkey, and Coopersmith on self-concept and education from the public school arena to remedial teaching in postsecondary education.

A tremendous amount of research was done in the sixties and seventies on self-concept and education. Without a consensus as to just what the construct self-concept was, researchers were free to define and measure self-concept in a variety of ways. As a consequence, evaluation and comparison of studies became difficult: What one researcher called "self-concept" would relate to one result, but what another researcher called "self-concept" would relate to the opposite result (Byrne, 1984). To reduce confusion, major syntheses of work were undertaken to validate and delineate the construct self-concept (Wells & Maxwell, 1976; Fitts, 1972; Marx & Winne, 1978; Shavelson, Burstein & Keesling, 1977; Shavelson, Hubner, & Stanton, 1976). These studies established a general view of self-concept and offered theoretical models for investigation and discussion.

Self-concept: The construct.

During the latter half of this century, the words self-esteem and self-concept came to be used interchangeably (Pascarella & Terenzini, 1991, p. 171). By the early 1980's, Byrne (1984) was able to describe four distinct models of self-concept in use in the literature: the nomothetic position, the hierarchical model, the taxonomic model, and the compensatory model (p. 430). Each of these models presents a different nomological network of factors contained within the

construct self-concept and a different interpretation of how those factors contribute to the whole and relate to each other.

All models of self-concept accept a general facet of self-concept. Opposed to the other models and less accepted is the nomothetic model. This model holds that self-concept is unidimensional and that characteristics of it change with the setting. In the multifaceted models, these characteristics are facets internal to the construct. Shavelson's hierarchical model (see Figure 2.1) delineates several facets of the general self-concept. These facets exist in hierarchical network from most general (the general facet itself), to more specific (e.g., academic), to subject-specific self-concept (e.g., math, English). In the taxonomic model, the facets are independent of each other and comprise as a whole that which is called the "general self-concept." Lastly, in the compensatory model, facets compensate for each other such that a low self-concept in one facet (e.g., academics) may be compensated for by higher self-concept in another (e.g., athletics). Of all of these models, Shavelson's is the least exclusive.

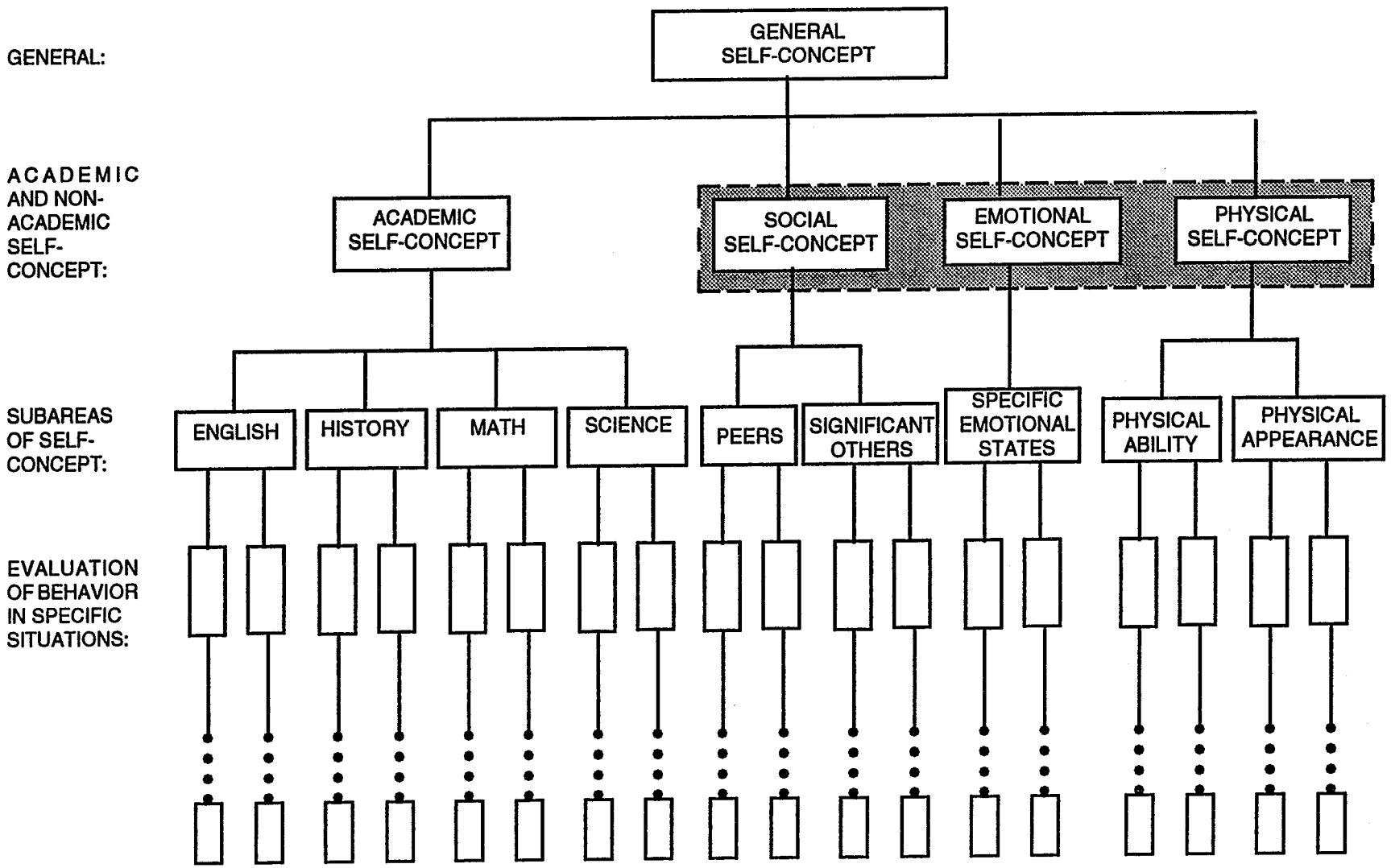
Interpretations of manifestations of self-concept along the hierarchical model do not absolutely exclude the holistic aspect of the unidimensional model, the compensatory phenomenon, or the possibility that one type of self-esteem, such as physical, may operate independently from another, such as academic. In the Shavelson model, all the facets of self-concept are "distinct" but "correlated" (Shavelson & Bolus, 1982, p.16). Shavelson and Bolus thus define self-concept:

> Self-concept, broadly defined, is a person's perceptions of him- or herself. These perceptions are formed through one's experience with and interpretations of one's environment and are influenced especially by

FIGURE 2.1

SHAVELSON'S MODEL OF THE SELF-CONCEPT CONSTRUCT

Note. From "Self-Concept: Validation of Construct Interpretation" by R. T. Shavelson, J. L. Hubner, and G. C. Stanton, 1976, Review of Educational Research, 46, p. 4. © 1976 American Educational Research Association. Adapted by permission of the publisher.



> reinforcements, evaluations by significant others, and one's attributions for one's own behavior. The construct self-concept can further be defined by seven critical features: (a) It is organized or structured, in that people categorize the vast amount of information they have about themselves and relate the categories to one another. (b) It is multifaceted, and the particular facets reflect the category system adopted by a particular individual and/or shared by a group. (c) It is hierarchical, with perceptions of behavior at the base moving to inferences about self in subareas (e.g., academic — English, history), then to inferences about self in academic and nonacademic areas, and then to inferences about self in general. (d) General self-concept is stable, but as one descends the hierarchy, self-concept becomes increasingly situation specific and as a consequence less stable. (e) Self-concept becomes increasingly multifaceted as the individual develops to adulthood. (f) It has both a descriptive and an evaluative dimension such that individuals may describe themselves (I am happy) and evaluate themselves (e.g., I do well in school). (g) It can be differentiated from other constructs such as academic achievement. (Shavelson & Bolus, 1982, p. 3)

Shavelson, Marsh and Byrne continued to pursue research on academic self-concepts of elementary school children and adolescents (Marsh, 1990; Marsh, 1992; Marsh, Byrne. & Shavelson, 1988; Marsh & Shavelson, 1985). Accepting the Shavelson model and Byrne's synopsis, Pascarella & Terenzini (1991) have recently published an extensive work on the effect of college experience on students, including their self-concept. This work does not, however, cover the effect of student's self-concept on the student's experience.

Retention

The retention models.

The development of the field of college student retention closely parallels that of self-concept in education but follows it by about a decade. As early as 1965, Lavin raised questions about socioeconomic status as a predictor of academic achievement and referred to SES as a "derivative or summarizing

variable" (pp. 123-124). Lavin was writing just at the time when the open-admissions community college movement was gaining strength (Brubacher & Rudy, 1976, p. 260). This movement opened the door of postsecondary education to a diversity of students (pp. 260-263). The effect was two-fold. First, given a less homogeneous population, researchers of academic prediction in postsecondary education now had to deal with a plethora of demographic variables. Second, the purpose of prediction expanded beyond selection of students at admission to retention of students following nonselective admissions.

From the late seventies and into the mid-eighties, the common complaint in the literature was that research on retention of students, and particularly that on retention of nontraditional and community college students, was "overwhelmingly descriptive" and unfocused (Bean & Metzner, 1985, p. 485; Tinto, 1975, p. 89; Pascarella, Smart, & Ethington, 1986, p. 147; Voorhees, 1987, p. 115). To bring focus to the research, several models of student retention were developed from meta-analyses of existing research. These models were attempts, first, to sort out the variables predictive of retention and, second, to map relationships of variables to each other and to the whole.

The line of development of these models begins with Spady (1971) whose population was university students. Tinto (1975, 1982, 1987) built on Spady's work to develop his theory of student-institutional "fit." Since Tinto's work was based on more traditional collegiate populations and environments, Pascarella, Duby, & Iverson (1983), Bean & Metzner (1985), and finally Webb (1989) tested and adapted the model, respectively, to commuting university students, to nontraditional college students in general, and finally to two-year, community

college students. While these models may be peripheral to this research project, they have considerable heuristic value.

The Tinto model (see Figure 2.2) traces the relationship of various factors in the student's decision to drop out of or remain in college. Family background, individual attributes and previous academic experience dictate how committed the student is to his/her academic goals and to his/her extracurricular life at the college. The student's academic and extracurricular experience, or integration, may then support or negate that commitment, and thus lead to the student's decision to remain in college or to drop out. Tinto's model is important because he describes dropping out as a behavioral manifestation of the student's relationship with his/her environment. Tinto, himself, however, noted that this theory had only limited application for the community college environment (1982).

Bean & Metzner (1985) reworked Tinto's concept for nontraditional students. In this model (see Figure 2.3), variables are more specific (e.g., "ethnicity" and "gender" rather than Tinto's "individual attributes"). Bean & Metzner further pull SES and other extra-collegiate environmental factors in line with academic variables and note that for nontraditional students, the environmental factors have as much or more impact on retention than do academic factors (p. 491). The chronological alignment of these environmental factors with the collegiate experience was a critical breakthrough. While Pascarella, Duby & Iverson (1983) had noted the stronger impact of such environmental variables for commuter students, they had limited these variables to "precollege" characteristics (p. 97) for their commuter university students. In short, Bean & Metzner recognized that for nonresidential students, the factors

FIGURE 2.2

TINTO'S MODEL OF STUDENT ATTRITION

Note. From "Dropout in Higher Education: A Theoretical Synthesis of Recent Research" by V. Tinto, 1975, Review of Educational Research, 45, p. 95. © 1975 by the American Educational Research Association. Adapted by permission of the publisher.

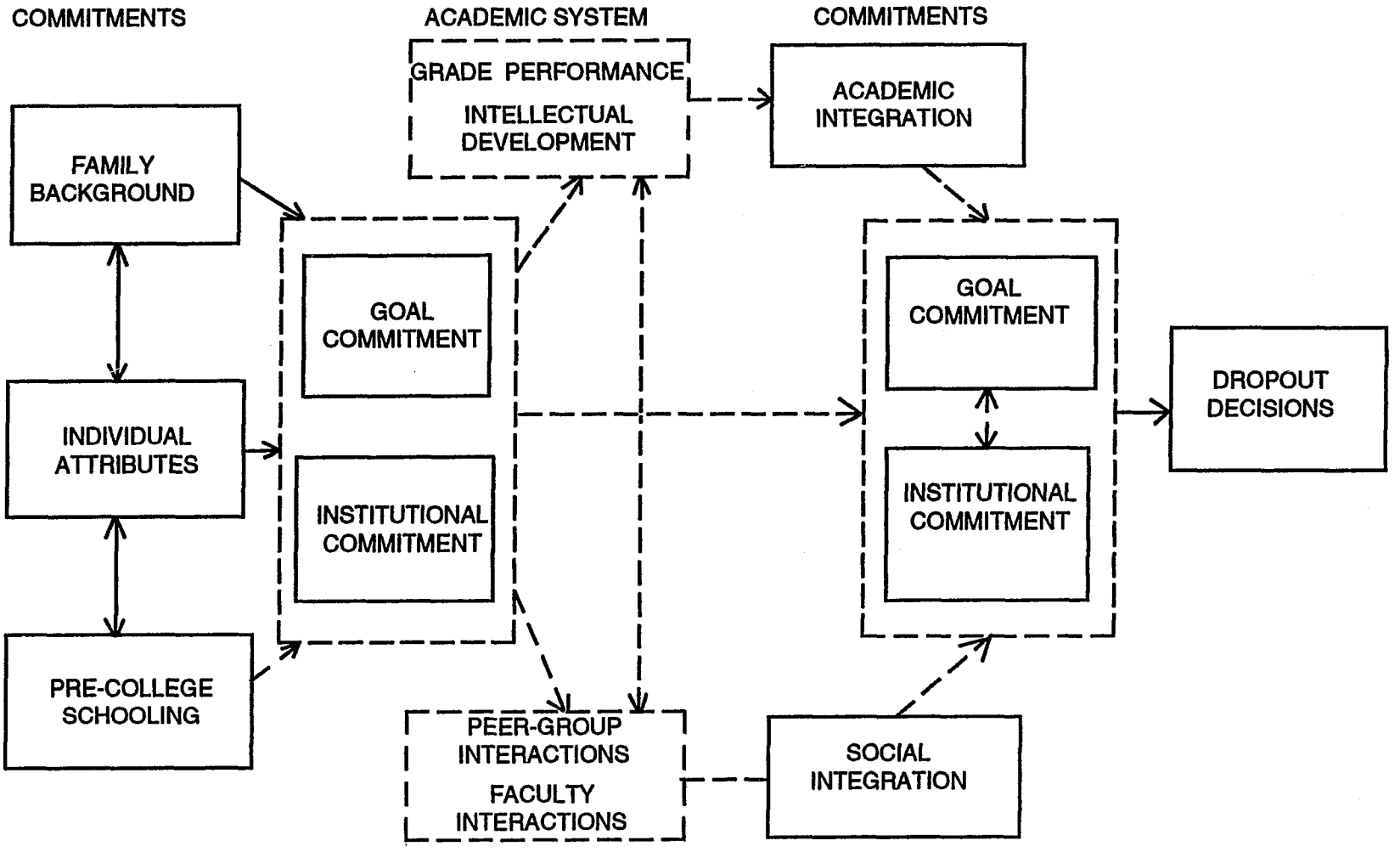
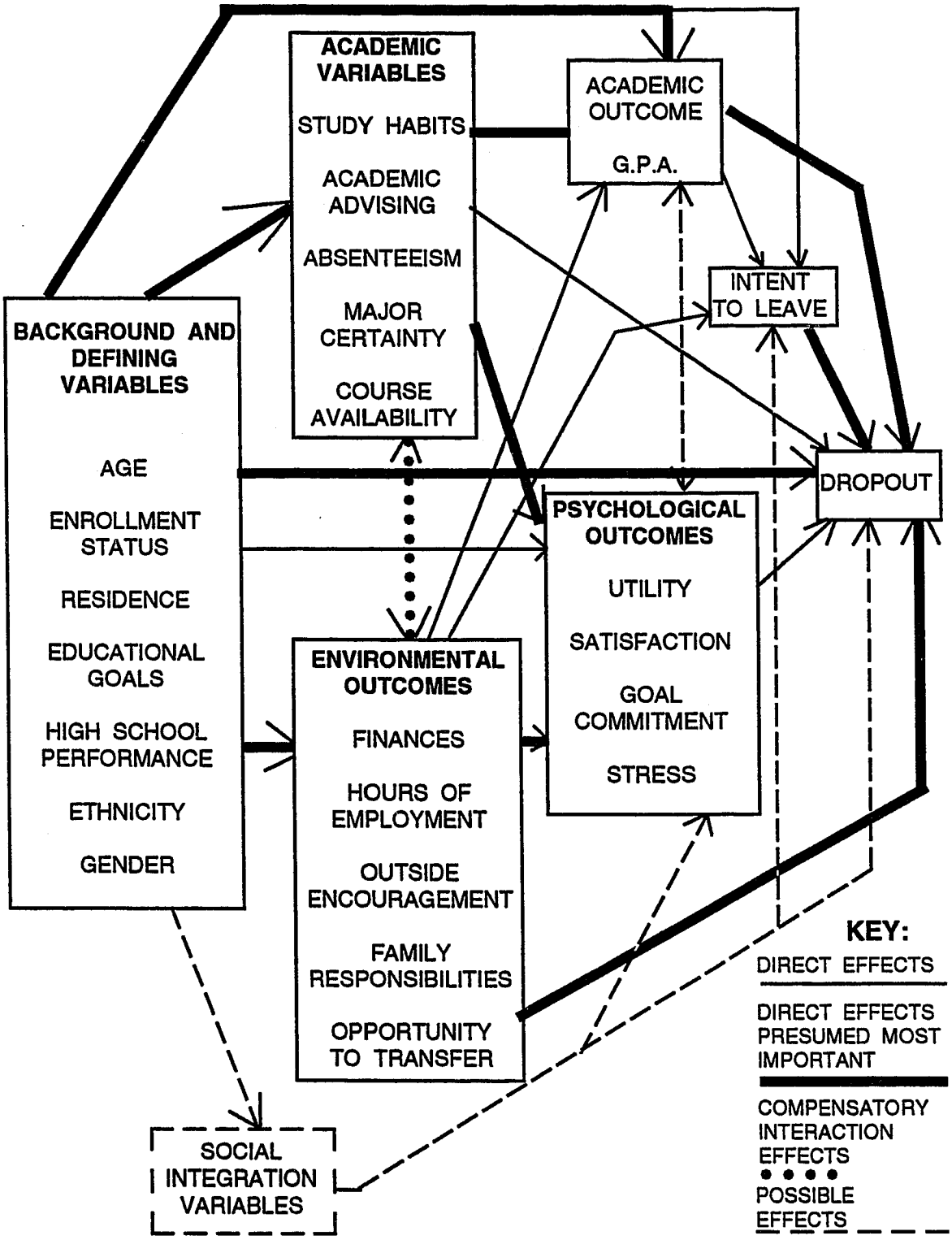


FIGURE 2.3

BEAN & METZNER'S MODEL OF NONTRADITIONAL STUDENT ATTRITION

Note. From "A Psychological Model of Student Persistence" by C. A. Ethington, 1990, Research in Higher Education 31, p. 283. © 1990, Human Sciences Press Inc. Adapted by permission of the publisher.



which contribute to the student's so-called "background" continued to have an impact on his/her present college experience.

Following a failed attempt by Voorhees (1987), Webb (1989) successfully constructed a theoretical model of student retention for community college students (see Figure 2.4). Webb's model differs from Bean & Metzner's in that Webb adds "academic self-confidence." While academic self-confidence appears to relate to academic self-concept, it does not. Webb defines academic self-confidence as "need for academic/study help" (p. 48). This reported need, however, may just as logically be from a true weak academic background (e.g., poor high school program, appropriate courses not taken in high school, etc.) as from any source intrinsic to the student.

Applications of the models: Problems with purpose and population.

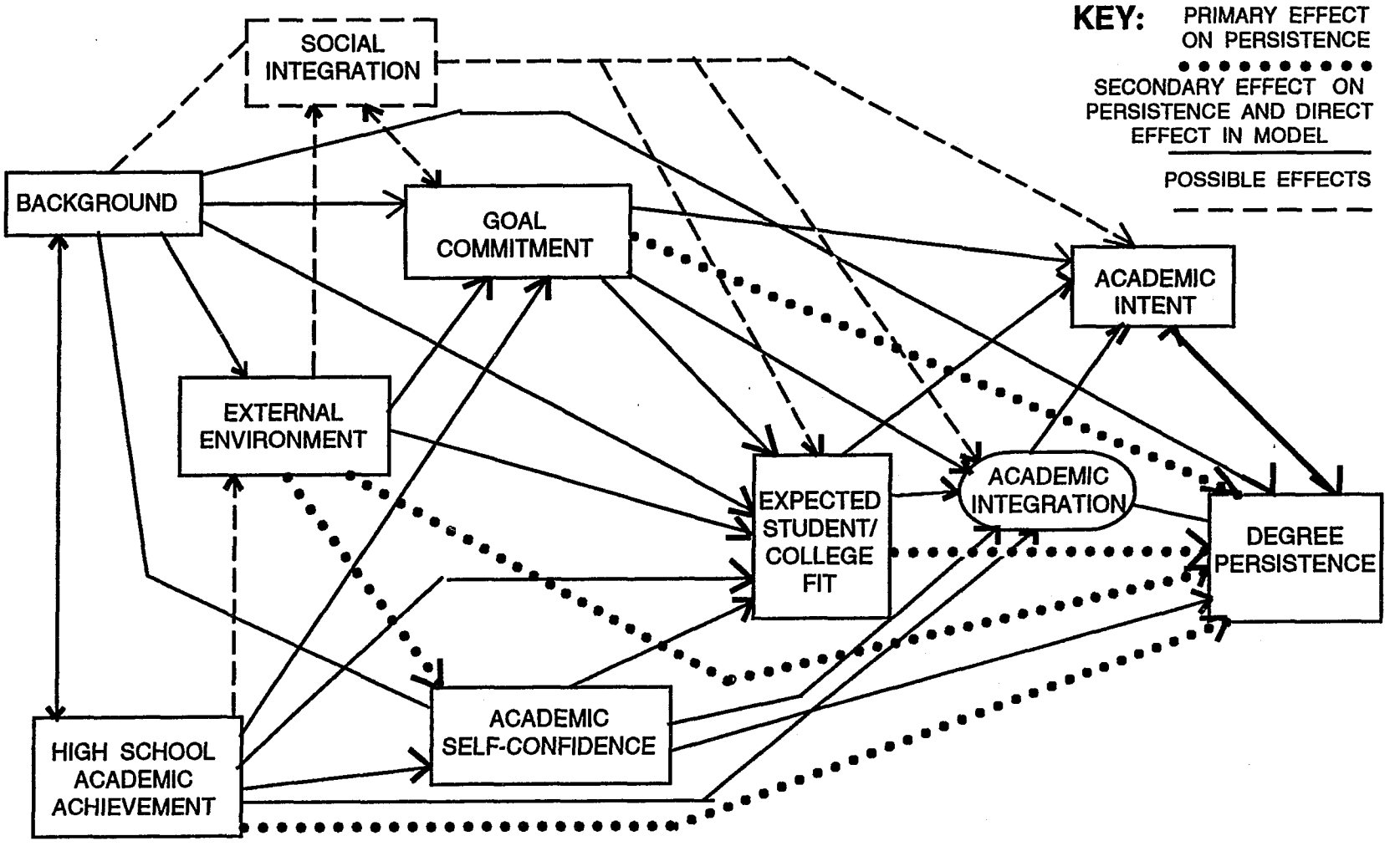
The research conducted to develop and to test these models of student retention did indeed give focus to the field. From Spady's original speculative work, the concept of retention took on broader and more pragmatic aspects. The introduction of nontraditional and community college students into the retention equations opened several cans of worms. Later researchers discovered that the purpose of the research and the populations dealt with in the research are all-important considerations.

Purpose of research may be theoretical or pragmatic. The crux of the Tinto models is the concept of student integration into the life of the college. This concept is most suitable in research whose purpose is theoretical. The indexes of this integration are variables that are measured retrospectively, after the students have dropped out or stayed. Student- faculty contact (Pascarella, 1980), attendance at freshman orientation (Pascarella, Terenzini, & Wolf, 1986),

FIGURE 2.4

WEBB'S MODEL OF COMMUNITY COLLEGE PERSISTENCE

Note. From "A Theoretical Model of Community College Persistence" by M. Webb, 1989, Community College Review, 16, p. 47 © 1989 by The Community College Review. Adapted by permission of the publisher.



or first-quarter GPA (Nelson, Scott & Bryan, 1984) constitute data that can be collected only after the fact.

On-going research to enable a college to predict, or look forward to, student retention in order to plan interventions limits the researcher to background variables and such academic variables as those which reflect background (i.e., achievement tests). The problem becomes designing research with data available at or prior to enrollment (Webb, 1988). Though some colleges may be content with identifying high-risk students late into the first quarter (Nelson, Scott, & Bryan, 1984), it is far better to establish early warning systems that provide interventions before the student develops problems (Tinto, 1987, pp. 146-148).

A second consideration in planning research is selection and scope of population. Different variables affect the retention of different, selected populations in different ways. Satisfaction with college experience, for example, is a prime measure of integration into college in the Tinto models. While this characteristic does predict retention for traditional students, it has small effect on the retention of nontraditional students (Smith, 1982; Voorhees, 1987; Winter & Fadale, 1986).

Limitation of population is thus advised. Researchers have pointed to the need to use "only carefully defined subpopulations" (Voorhees, 1987, p.127) in research on retention (Winter & Fadale, 1986, p. 109; Tinto, 1982, p. 692). Halpin (1990) successfully applied the Tinto model to community college students by limiting his population to "first-time, full-time freshmen enrolled in academic programs at a relatively small, open-door, nonresidential community college in rural New York state" (p. 24). Halpin's success is interesting in that general wisdom holds that the Tinto models have limited application for

community college populations. Obviously, limiting to a subpopulation does enhance the success of research on retention.

Usefulness of the models for community colleges.

When the subpopulation is limited, the background variables are somewhat controlled. Given a rural setting and a commuting student body, for example, a community college researcher may assume that other characteristics such as race and gender represent variations of a local culture. As a variation of a local culture, race, for example, may still have significant effects on retention and how different variables affect retention (Whitaker, 1987). Nonetheless, such strictly demographic variables as those that encompass the readily obtainable background variables in the Tinto models leave many questions unanswered and provide little direction for colleges that need pragmatic research in order to plan early intervention (Brooks-Leonard, 1991, pp. 65-66; Tinto, 1982, p. 691; Messick, 1979, p. 284). Even the academic variables related to background (e.g., high school record, SAT scores) are inadequate to identify which high-risk students will succeed and which will not (Nisbet, Rubie, & Schurr, 1982, p. 227).

The population of community college students is a subpopulation of all postsecondary students in the U. S. As a subpopulation, they are the group most at risk of dropping out of college (American College Testing Service, 1992). Each community college houses a particular subpopulation of this high-risk group. While research may identify demographic variables that will show which particular students are most at risk (e.g., nonWhite, single mothers), this information has more theoretical than pragmatic value. As Jones & Watson (1990) have pointed out about nontraditional students, "some nontraditional

students are not high-risk, and conversely, some high-risk students are traditional students" (p. 1).

Tinto's warning about the use of variables such as race and gender is strong: To include these attributes as part of mere regression equations does "not capture the multitude of quantitative and qualitative differences in effect and interaction of terms that race and gender produce in individual behavior" (1982, p.691). To know, for example, that Hispanic men at a particular campus tend to be at risk is not to know, first, which particular Hispanic men will not need intervention because they are not high risk. To impose extra program requirements in such a fashion would constitute discrimination. Second, such an approach does not explain what makes the high-risk Hispanic men high risk. Community colleges need the answer to this last question so that they can plan interventions.

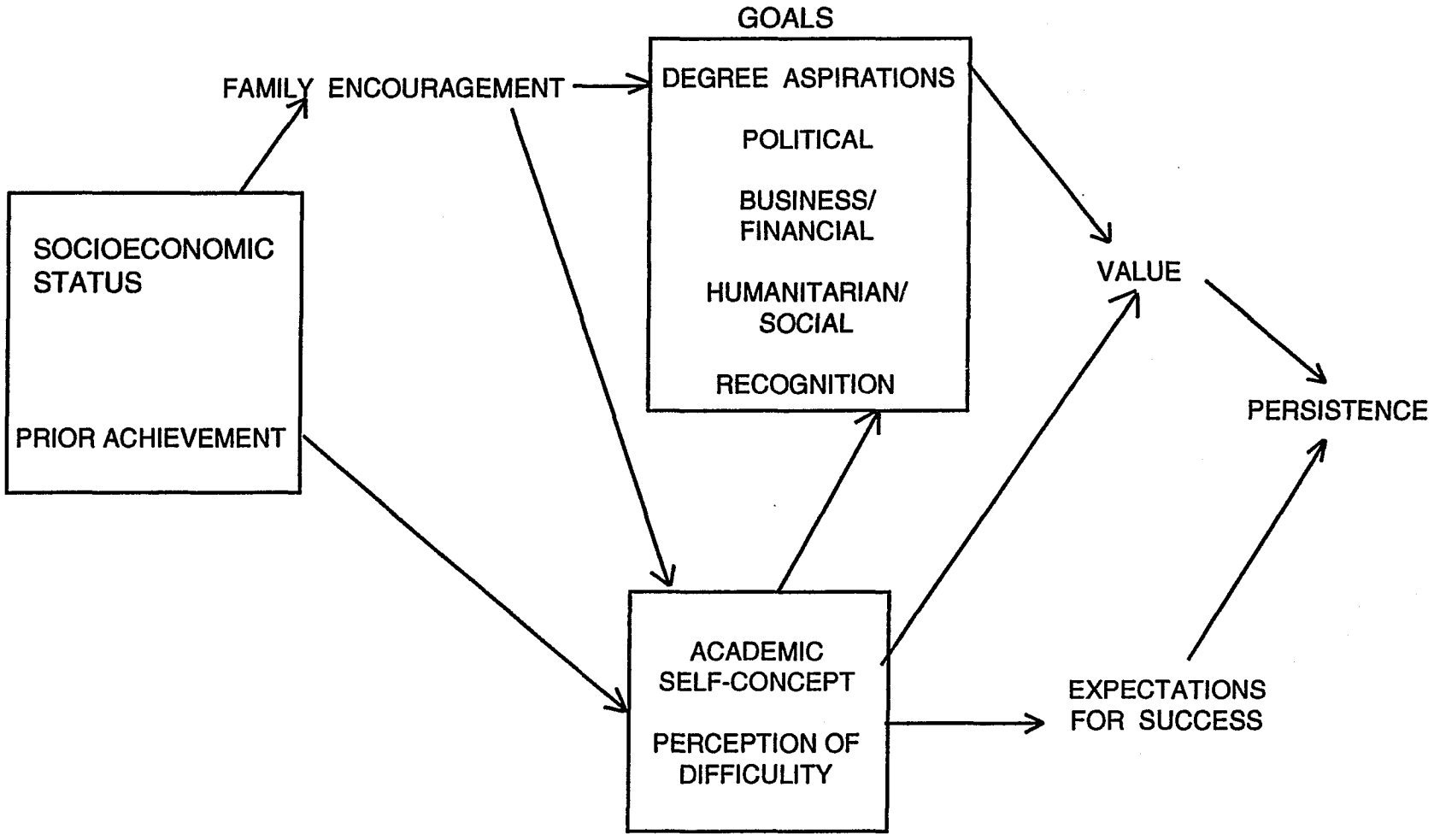
Self-concept and the retention models.

Use of demographic variables alone, then, leaves community colleges in a dilemma. Even if research indicates that one gender or race or any other group is at risk, to impose extra requirements based on these groupings would constitute discrimination. Community colleges, thus, need to identify barriers that cut across ethnic and gender groupings. Ethington (1990) has recommended construction of psychological models of student retention (see Figure 2.5). Ethington bases her work on the Eccles model of achievement behaviors. The basic assumption of this model is that "the effects of past achievement and socialization are mediated by one's interpretation of those events in light of cultural influences and a fairly stable perception of oneself" (Meece, Parsons, Kaczala, Goff, & Futterman, 1982, p. 334). This model, thus, gibes with the

FIGURE 2.5

ETHINGTON'S MODEL OF STUDENT PERSISTENCE

Note. From "A Psychological Model of Student Persistence" by C. A. Ethington, 1990, Research in Higher Education, 31, p. 283. © 1990 by Human Sciences Press, Inc. Adapted by permission of the publisher.



Shavelson model of self-concept as perceptions formed from experience and one's interpretations of that experience. In the Eccles model, however, the researchers use the word culture to designate the subject's environment and realm of significant others. If these cultural influences may be somewhat controlled for by careful selection of a subpopulation, then differences in the effects of background on the individual may be detected through measures of self-concept.

Changing terminology from environment and significant others to culture moves the discussion of self-concept from psychology to sociology. The community college's problem is to identify high risk students from among a high risk population. Work in the field of sociology does support focusing on student's self-concept. Werner & Smith (1977, 1989) have sought in their longitudinal study of high-risk children to explain how some high-risk individuals nonetheless succeed and how some individuals with no apparent barriers to success fail. Finding various factors at play in the development of children, Werner and Smith concluded:

> In our study constitutional factors within the child (temperament, health) appeared to pull their greatest weight in infancy and early childhood; ecological factors (household structure and composition) gained in importance in childhood; and intrapersonal factors (self-esteem) in adolescence . . . . (1989, p. 133)

Werner and Smith see the proper goal of interventions with high-risk children as an "optimal adaptive development" that seeks a "balance between the power of the person and the power of the social and physical environment" (p. 136). Another word for this "balance" is resiliency (Gelman, 1991).

The constitutional and ecological factors that work to create a resilient individual, then, work to create positive self-concept. Most importantly, this ability to adapt to new developments in one's life is linked to academic achievement in college. Crook, Healy and O'Shea (1984) have found that individuals who have better self-esteem are more likely to adopt adult mores (mature career attitudes) and are thus more likely to succeed in college.

In light of the development of the retention models, Ethington's model fails in only one respect. Since her subjects were more traditional college students aspiring to bachelor's degrees, she has used academic self-concept. Common sense and the developers of the retention models emphasize that the student's relationship to his/her extra-collegiate environment is more important for the community college student than for students in more traditional college environments. This fact, again, dictates use of the general, rather than the academic, facet of self-concept in research on community college students.

Conclusion

In summary, then, retention is a behavioral reaction of the student to the college environment. The college environment for the community college student is far different from the college environment of the four-year, traditional college student. In building models to predict retention, researchers have discovered that extra-collegiate environmental factors are critical to the success of community college students. The community colleges' dilemma is to collect pertinent extra-collegiate data on students early enough to identify high-risk students and to prevent them from dropping out. While demographic data may be readily obtainable and may be an index of high risk, reliance on these variables may lead to discrimination and may obscure the root cause of a

student's risk. Self-concept may be a direct factor in a student's risk of dropping out and does offer direction for design of interventions. Given the community college student's more broadly defined environment, general self-concept may be the most appropriate facet of self-concept in predicting retention or attrition.

Self-Concept and Academic Achievement

Academic performance itself has many facets. Commonly, academic performance is thought of in terms of grades and scores on achievement and aptitude tests. Retention (persistence) is a form of academic performance, but it differs from grades and test scores. Retention less directly implies some form of aptitude, especially in the community college arena. Ostensibly, community college students have intellectual aptitude within the normal range or at a level sufficient to complete a high-school level program. As noted earlier, the community college technical curricula are not designed to tax the purely academic faculties of the students.

Virtually all the work done on self-concept and higher education has been done at selective admissions colleges and does focus on grade achievement with some attention paid to retention. In recent years selective colleges have had to deal with less homogeneous groups of students. Many of the new entrants into higher education have proven that the classically defined, cognitive predictors of college success are outmoded. Self-concept and other noncognitive variables have consequently come to play an important role in research focusing on provision of educational equity in higher education and, indeed, all sectors of American education. The researchers in this field have used as their subjects special populations (subpopulations): women, minorities, and underprepared students. Given the community colleges' mission to provide

educational equity within the whole system of higher education, this research maintains its relevance to community college retention. First and foremost, however, it is important to discriminate between cognitive variables such as aptitude and noncognitive variables such as self-concept.

Cognitive and Noncognitive Variables

While self-concept is generally treated as an affective or noncognitive variable, the line between cognitive and noncognitive variables is extremely thin. Meece (1979) notes: "The distinction between cognitive and noncognitive assessment is not . . . categorical, but one of degree in the relative balance between intellective and other personality determinants of individual differences" (p. 282). With its perceptive, interpretive, and evaluative aspects, self-concept is certainly an affective variable that relies heavily on cognitive functioning. What most interests educators is how those perceptions and evaluations are assimilated by the affective domain and how those affective consequences have an impact on academic behaviors (Calsyn & Kenny, 1977).

The thin line between the cognitive and noncognitive does not, however, mean that students with higher measured academic or intellectual aptitude have higher self-concepts. The variables do exist independently. Educators expect that students with higher self-concepts will do better than those students with similar aptitude but with lower self-concepts and that students with lower self-concept will not perform as well as their peers with similar aptitude (Rogers, Smith, & Coleman, 1978; Kubiniec, 1970; Baily, 1971; Ferguson & Bitner, 1984). A corollary to this principle is that, given a group of students with varying aptitudes but with similar academic goals, self-concept may not appear to have

an effect on academic performance if the variable aptitude is not controlled for (Rogers, Smith, & Coleman, 1978; Badgett, Hope, & Kerley, 1971).

A hypothetical situation in a public school would more clearly illustrate this concept. If the variation in academic ability were wide, final grades in a course would appear not to relate to student's levels of self-concept. If the researcher were, however, to stratify students by ability, then perhaps within the ability groups self-concept would relate to course grade. Returning to the first principle, the researcher would expect not to find differences in self-concept level among the groups. Measurement of the effects of self-concept, like research on retention, is best done with subpopulations. If we can assume community college students to be a subpopulation, then self-concept should relate to achievement. This assumption is not so far-flung, since those students on the lower end of the ability scale may be assumed to have not graduated from high school. The majority of the students on the upper end of the academic ability scale are, as Astin (1985) noted, drawn to the elitist institutions.

Self-Concept and Grades, General Population

In general, self-concept is a better predictor of larger elements of academic achievement (GPA) than of smaller elements (grade in course). In more traditional, four-year college settings, general self-concept has been shown not to be related to exam grades (Boshier & Hamid, 1968) or to grade in course (Simpson & Boyle, 1975) though it is related to students' predictions of their grades in course (Morrison, Thomas, & Weaver, 1973; Morrison & Morrison, 1978). In four-year colleges both general self-concept and self-concept of ability correlate with GPA (Crook, Healy, & O'Shea, 1984; Kubiniec, 1970; Jones, 1978; Gerardi, 1990; Robinson & Cooper, 1984; Baily, 1971) and may be a better

predictor of GPA for minority and lower SES students than cognitive predictors (Gerardi, 1990). This greater efficacy in predicting GPA than in predicting course grades is consistent with findings on self-expectancy, a variable closely related to self-concept (Haynes & Johnson, 1983). One study (Iglinsky & Wiant, 1971) did, however, find no difference in the self-concept levels of students placed on academic probation/suspension and others at a four-year, Southern university.

Self-Concept and Achievement, Special Populations

The research on self-concept and achievement of special populations has been undertaken in the spirit of creating true educational equity in American education. If the traditional cognitive predictors of college success, such as the SAT, discriminate against women and minorities (Sedlacek, 1977) and if these measures only partially predict college success (Tracey & Sedlecek, 1984), then noncognitive predictors may be used to make selective admissions decisions more equitable (ibid.). What selective colleges learn about these predictors may give direction to open admissions colleges who need to identify high-risk students for intervention. The results of various research projects are surprising and enlightening.

Self-concept and women in education.

In the area of sex equity in education, the American Association of University Women (AAUW) is currently leading a political initiative. Part of this initiative has included the funding of research on the effect of the public-schools' environments on the self-concepts of young girls. Surprisingly, these researchers found that while White girls' self-esteem steadily deteriorates from elementary school to high school, Black girls' self-esteem remains constant, and Hispanic girls' self-esteem, which in elementary school is the highest of the three

groups, plummets to the lowest of the three (1991, pp. 8-9). A strong factor in these differences is community and familial support (ibid.). As with the retention studies, focus on subpopulations (stratification of data) has a significant impact on results. As with retention studies of nontraditional students, factors outside of school have been shown to have a tremendous impact on how students relate to their academic environments, in this case, the effect that environment has on the students.

A further and more pertinent issue that the AAUW study raised was that of educational aspirations. Self-concept does correlate positively with aspirations (p. 8), and aspirations have a logical connection to decisions like dropping out or continuing to pursue degrees. This concern is shared by other feminist researchers investigating female choice of, and performance in, math courses (Meece, Parsons, Kaczala, Goff, & Futterman, 1982; Biaggio & Pelofski, 1984). In general, self-concept has a direct effect on girls', but not on boys', choosing to enter and to continue in upper level math courses (ibid.). Mathematics is a male-dominated field. As such, it is assumed to be a cultural mileu unfamiliar, if not hostile, to women. As with any high-risk student in any other sector of education, questions arise as to which students will dare to enter and continue in unfamiliar territories, whether it be a woman in math class or a member of a minority in a majority-dominated educational institution.

If, as Shavelson holds, the self-concept is shaped by evaluations of "significant others," then the effect of the educational institution on the student will depend on there being "significant others" in that institution. If the Black girls of the AAUW study were unaffected by the school system, it is perhaps because their significant others are outside, rather than inside, the system. This situation

would indeed be a most stinging indictment of the public school system in their handling of these females.

On the other hand, the studies of women in mathematics perhaps show the effects of resiliency on the education of women. The resilient females with the strong self-concepts are perhaps more willing to venture into unfamiliar territory and adapt to it. The paradox is, thus, that the disenfranchised will place little value on the system's evaluations of them and will thus not be affected by the system. Their self-concepts will not suffer. However, only those with strong self-concepts will venture into unfamiliar territory seeking enfranchisement. Given the community colleges' mission to enfranchise those whom higher education has previously ignored, this issue of the role of self-concept is a critical one. If this paradox holds for women, it may also apply to minorities and other disenfranchised populations in education.

Self-concept and minorities in education.

Self-concept and other noncognitive variables are indeed central issues to researchers concerned with educational equity in American higher education. Early on in the push for equity, concerns about the effect of desegregation in the public schools prompted research on the minority children involved. As with the AAUW study, community and familial support were found to be overriding factors for these children who ventured into unfamiliar territory (Zirkel, 1971). As a matter of fact, membership in an ethnic group may bolster some young students' self-concepts (p. 220), perhaps insulating them from the effects of the system, as found among the subjects of the AAUW study.

In the university arena, Tracey and Sedlecek (1984, 1985, 1987) have pioneered comparisons of noncognitive and cognitive predictors of achievement

for both minority and White students. In this series of studies, the researchers found that SAT scores do not predict graduation for any group (1984, 1985, 1987) and that White students' attrition was predictable through neither cognitive nor noncognitive variables (1985). Noncognitive variables were effective predictors of success for the minority students in the research sample. The instrument employed by these researchers encompassed seven noncognitive factors:

> (1) Positive self-concept, (2) realistic self-appraisal, (3) understanding of and ability to deal with racism, (4) preference for long-term goals over short-term or immediate needs, (5) availability of a strong support person (6) successful leadership experience, and (7) demonstrated community service. (1984, p. 171)

Testing these variables across several periods of enrollment, the researchers found that the three factors that continued to predict persistence for Blacks were "positive self-concept, realistic self-appraisal, and academic familiarity" (1985, p. 409). The strong relationship between academic self-concept and the retention/ GPA of minority and lower SES students is further supported by research on CUNY students (Gerardi, 1990). Importantly, among both Southern and Northern Black students, self-concept is not related to SES but is related to both groups' academic achievement (Epps, 1969, pp. 63, 69).

Self-concept, then, may not be related to economic status, gender or minority status in ways that majority, middle-class prejudice would expect. Middle-class prejudice expects the "status variables," as Gordon (1992) describes them, to predict success. The female and minority students described above constitute Gordon's "defiers of negative prediction." The results of the

above studies support consideration of self-concept as one of Gordon's "function variables." The last, and perhaps most important, status variable is academic preparedness.

Self-concept and underprepared students.

The research on students' self-concept and their academic preparedness is consistent with findings for other groups: Self-concept does not relate to level of preparedness, but it does relate to student's success. Self-concept is not related to SAT scores of entering freshmen (Badgett, Hope, & Kerly, 1971) or to students' scores on college reading tests given at entry (Ferguson & Bitner, 1984). In these two studies, self-concept was related to students' achievement (GPA). Baily (1971) did find a difference between self-concept of "high and low achieving students," but the classification into these two groups and subsequent placement into remedial courses was made based on first-quarter GPA. GPA has repeatedly been shown to relate to self-concept. Thus, these researchers may have separated the groups by self-concept level prior to evaluating self-concept. While the volume of research on the underprepared or remedial student is small, the results are consistent.

In spite of the early calls to transfer the work on self-concept and other noncognitive variables from the public schools to remedial teaching on the college level (Cross, 1976; Roueche, 1976, 1972, 1968a), the actual research literature on the topic is sparse. Available research on factors related to self-concept that have an impact on remedial students' success are academic adjustment (Gelso & Rowell, 1967), students' self-perception of academic preparedness (Hogrebe, Dwinell, & Ervin, 1985), and personality type (Nisbet, Rubie, & Schurr, 1982). The importance of affective variables to these students'

success is felt so strongly that Dwinell & Higbee (1989) recommend adding counseling components to remedial programs in order to assess and intervene early. The key to Dwinell and Higbee's plan is assessment: Not all remedial students will have impaired self-concepts. As with Jones's traditional and nontraditional students, it is easy to see that not all students whose academic success is threatened by impaired self-concept will be placed into remedial classes.

Self-Concept and Academic Achievement: Conclusion

In conclusion, self-concept does have an impact on the academic success of general and special populations when that success is measured by GPA. This relationship does not appear to be reciprocal since lack of academic preparedness does not correlate with self-concept level. The research on college students is supported by research on high school students. Research on high school students shows that grades have less-than expected effects on the self-concepts of older students: "Educational success becomes less central to self-esteem during late high school and the years that follow" (O'Malley & Bachman, 1979, p. 1159). As the young student's personality and social world grows and becomes more complex, grades should certainly take a smaller relative place within the range of externals that have an impact on the student's self- perceptions. Consequently, as noted earlier, little relation is found between aptitude test scores, such as the SAT, and student's self-concept. A further explanation, as noted earlier, is that aptitude is not related to self-concept. Nonetheless, strong relationships have been found between the student's self-concept and his/her achievement as measured by GPA. The question remains

as to whether this relationship extends to retention in the community college sector.

Self-Concept and College Retention

House (1992, pp. 5-6) notes that the preponderance of research on self-concept and academic achievement has come from the public-school sector. The theoretical network that relates self-concept to retention in the public schools is called the "frustration-self esteem model" (Finn, 1989, pp. 119-122). In this model unsuccessful outcomes (e.g., poor test grades) in early grades result in lowered self-esteem, which results in problem behaviors, which lead eventually to drop out (p. 122). O'Malley and Bachman (1979), as cited above, have noted that the relationship between self-concept and grades diminishes with age. Finn (1989) thus notes that the research findings in this area are inconclusive (p. 121) and that "the relationship of self-concept with academic achievement [in public school] is mediated by other, yet undiscovered variables" (p. 135).

Once again, these "undiscovered" variables hint at the cultural milieu of the student and the student's personal attributes in context of that milieu. This interaction between the student and his/her out-of-school world may or may not have bearing on the effect of the school on the student and consequently on the reaction of various types of students to their experience in school. As noted in the AAUW study, school experience will tend to erode White and Hispanic girls' self-esteem, so for them the frustration-self-esteem model may hold true. With Black girls, however, the school experience had little or no effect, and their dropping out may either have different etiology or stem from systemic apathy.

How much of this work from public schools is transferable to community college is questionable. By the time the students reach community college, they

have completed this process or dropped out of it. Importantly, unlike the traditional college student, the community college student is more likely to be years away from his/her high-school experience. At the college under study, for example, only about 10-12% of students are of an age to be recent high-school graduates (19 and under); the average age tends to be 26; the largest group of students (40%) are between the ages of 20 and 24, and 49% of these students are over the age of 25 (Randolph Community College, 1993, p. 15).

This distance between high school and community college experience seriously limits the college's ability to draw inferences from the academic background data available in high school transcripts. The student who was poorly motivated in high school, for example, may have had significant adult experience. Arduous work in a textile mill, for example, may give that student new reason to value education as a means to a better life. This student may then enter community college as a well motivated, successful student. Conversely, a student with high academic self-concept in public schools may have had seriously damaging experience between graduation and community college experience. A young woman who experiences teenage pregnancy and a subsequent abusive marital relationship, for example, may not enter college with the same level of confidence that she had in public school. Lastly, even with the younger students in community college, extra-collegiate experience continues to compete with academic experience in shaping the student's perception of him/ herself.

It is critical, then, that community colleges know where their students are at the time that the students first enroll in the community college. The common practice of giving students placement tests at community college entrance gives

admissions counselors up-to-date data on intellectual factors that might impede students' persistence. Nonintellectual factors, however, are not so readily measured. Moreover, the dearth of research on nonintellectual factors that might lead to community college drop out or persistence leaves community colleges with little or no direction for such assessment and intervention.

As noted earlier, in more traditional sectors of higher education, self-concept and other nonintellectual factors more strongly relate to persistence of minority and non-minority students than do intellectual factors (Gerardi, 1990; Tracey & Sedlecek, 1984, 1985, 1987; House, 1992). Further, self-concept relates to factors that relate to persistence of nontraditional students (Higbee & Dwinell, 1992). Mooney, Sherman, and Presto (1991) found a strong relationship between self-concept and students' college adjustment, the central factor in Tinto's model of student retention (p. 447). Relationships between self-concept and college retention have been established, but not for the community college population. This vacuum is a critical one given the importance of student retention as a measure of the adequacy of the community college program in meeting the particular needs of its nontraditional clientele.

Conclusion

Over the last three decades considerable work has been done on college retention and on self-concept and education. Several models were devised to give a theoretical framework to retention studies. These models were inadequate to direct practitioners in development of suitable interventions. Ethington (1990) has thus called for creation of retention models that take self-concept into account. This recommendation is consistent with the early concerns of Cross (1976) and Roeche (1976, 1972, 1968), who called upon college

remedial teachers to attend to the affective or noncognitive barriers to college students' success.

Work on self-concept and college students has been conducted, but this work deals mainly with grade-point averages and with students at four-year colleges. The results of this work confirm the connection between GPA and self-concept in the four-year college sector. To support the Ethington model, however, direct research needs to be done on self-concept and retention. Further, in the community college sector, little research has been done on self-concept itself. This project should contribute to filling that void.

In addressing the lack of research on underprepared students, the Center for Developmental Education at Appalachian State University has developed an agenda for developmental education. One question raised in that agenda is "What are the characteristics of persisters? How can characteristics be identified early enough to provide timely identification?" (Boylan, Saxon, Bonham, & Parks, 1993, p.2). This research project addressed that question for "prepared" and "underprepared" students in the hope of contributing to more sophisticated retention models and more effective interventions.

CHAPTER III

METHODS

In order to improve retention at Randolph Community College, administrators have proposed adding an orientation class to the college's remedial program. This orientation class would complement the academic remedial program by addressing the problem of students' self-concept. Administrators have proposed placing students into the orientation course by the results of the students' academic placement tests. While the literature supports the relationship between self-concept and college retention (Tracey & Sedlecek, 1984, 1985, 1987), it does not support the relationship between self-concept level of ability (Badgett,Hope & Kerly, 1971; Ferguson & Bitner,1984). Moreover, little research on these issues has been conducted on community college populations. The purpose of this research was to test the relationships between self-concept and remedial requirements and between self-concept and retention at Randolph Community College. Since factors contributing to college attrition may vary with subpopulations (Voorhees, 1987), the College needed to test these relationships on its own campus before committing limited resources to the orientation classes.

Subjects

Student body.

The population for this study was drawn from the student body of Randolph Community College (RCC), which serves Randolph County, North Carolina. Student demographics at the College vary little from year to year. College

records since the 1987-88 academic year show that from 57% to 61% of students attend part-time (Randolph Community College, 1993, p.13), that the male- female ratio ranges from 38/62 to 41/59 (p.14), that from 40% to 45% of students work full-time while 30% to 39% work part-time, and that only 18% to 26% do not attempt to work while attending college (p. 16). Importantly, from 73% to 74% reside in Randolph County, another 16% to 17% reside in adjacent counties, 9% are from other counties in North Carolina, and never more than 1% list their permanent residence as another state (p. 17). As a former Quaker stronghold in North Carolina, Randolph County has a small nonWhite population for a Southern county: Only 6% of its population are nonWhite, and the student body typically ranges from 6% to 7% nonWhite students (p. 12). The student body is, thus, a relatively culturally homogeneous group with the preponderance of students of the same race and geographic origin.

Selection of subjects.

From a group of 471 students completing their applications for technical but not ADN programs between January and September, 1992, an initial pool of 257 subjects were administered the Tennessee Self-Concept Scale by the College's admissions counselors during the admissions process based on the following criteria: (1) applying and taking placement tests or having entrance interview from January 1992 through September 1992, (2) intending to enroll for the first time at RCC Fall Quarter 1992, (3) intending to enroll in a technical, but not an Associate Degree Nursing (ADN), program, and (4) intending to complete a degree. At this stage the admissions counselors ascertained which students fit the selection criteria, explained the purpose of the study, the release form, and the fact that participation was completely voluntary and that the students could

discretely stop answering questions at any point. No payment or other enticements were offered to participants. Confidentiality was maintained by use of the students' Social Security Numbers and storage of records in the College Registrar's Office. Records were shredded at the conclusion of the study.

The release form, "Consent to Act as Human Subject," was approved by the Institutional Review Board of the University of North Carolina at Greensboro. This form clearly stated that the research instruments had no bearing on the student's application to the College and that the student should stop answering questions if he/she felt uncomfortable about them at any point. From the initial pool, 10 students were excluded because of refusal or inability to complete the process. One student was discovered to be an undiagnosed learning-disabled student by the admissions counselor, who stopped all testing at that point. This student and two others signed the consent forms but did not complete the Tennessee Self-Concept Scale. These three students registered previous to Fall 1992 and, thus, would have been excluded from the study in the final selection. Three White, male students (ages 18, 21, and no age given) also failed to complete the TSCS but signed the consent forms. Their refusal to complete the self-concept scale may or may not have had any bearing on their level of self-concept but may have an impact on the results of this study since all three did register for the first time in Fall Quarter 1992. Finally, four students in one testing group refused to sign release forms. The reason given to the admissions counselor was the lateness of the hour (this was a late afternoon testing session) and the students' desire to get to dinner sooner. Since these reasons appeared to have had no bearing on self-concept and since these students released no

information about themselves, the impact of their refusal on final results was not possible to determine.

From the initial pool of 257 applicants, 103 were selected as the population of students who enrolled in technical, but not ADN, programs for the first time during the 1992 Fall Quarter based on the following criteria: (1) student enrolled for the first time at RCC for Fall Quarter 1992, (2) student had not enrolled during a previous quarter or year, (3) student enrolled in a nonADN technical degree (i.e., did not change major to vocational, nursing, or college transfer program), and (4) student did not refuse to give consent or fail to complete the research forms or instrument (see Table 3.1). The College registered a grand total of 122 new students in the nonADN technical programs during the entire academic year 1992-92 (North Carolina Department of Community Colleges, August, 1993). The selected subpopulation of 103, thus, constituted 84% of all newly enrolled students for the entire academic year in these programs.

Subjects compared to RCC student body.

As a whole, the research subjects tended to be younger and more evenly divided between male and female than were groups of all students enrolled in technical programs at RCC during the same academic year (see Tables 3.2 and 3.3). The largest group of the study's subjects fell into the age bracket 19 and under (see Table 3.2). In contrast, all technical students (including the ADN) at the college and the student body as a whole tended to fall into the 20-24 age bracket. This age difference is logical, given that the subjects were new students who intended to obtain degrees. Adults returning to update job skills were thus excluded from the study as were students who had previously enrolled at the College, certainly more likely to be the older students.

TABLE 3.1

APPLICANTS TO TECHNICAL BUT NOT ADN PROGRAMS WHO COMPLETED PLACEMENT PROCESS BETWEEN 1-92 & 9-92 WITH INTENTION TO ENROLL FIRST TIME AT RCC FALL 1992

INITIAL RESEARCH POOL OF APPLICANTS TO THE COLLEGE	257
INCOMPLETE ADMINISTRATION	1
REFUSALS	9
APPLICANTS PARTICIPATING IN STUDY	247

SECONDARY SELECTION CRITERIA:	
ENROLLED FIRST TIME, FALL QUARTER 1992	103
STUDENTS EXCLUDED:	
ENROLLED IN COLLEGE TRANSFER (CHANGED MAJOR)	4
ENROLLED AFTER TESTING BUT BEFORE FALL QUARTER 1992	39
HAD ENROLLED PREVIOUS TO JANUARY 1992	11
ENROLLED FOLLOWING WINTER QUARTER 1992--1993 BUT NOT TARGETED FALL QUARTER 1992	3
HAD NOT ENROLLED BY WINTER QUARTER 1992-1993	86
ENROLLED WITHOUT MAJOR	1
TOTAL	247

TABLE 3.2

AGE OF SUBJECTS COMPARED TO TECHNICAL STUDENTS AND TO ALL STUDENTS ENROLLED 1992-1993

AGE:	SUBJECTS	PERCENT	TECHNICAL	PERCENT	STUDENT BODY	PERCENT
19 & UNDER	46	44.7%	141	9.7%	240	11.4%
20--24	30	29.1%	564	38.8%	867	41.1%
25--29	14	13.4%	224	15.4%	325	15.4%
30--39	5	4.9%	301	20.7%	399	18.9%
40 & OVER	8	7.8%	223	15.3%	279	13.2%
TOTAL	103		1453		2110	

TABLE 3.3

SUBJECTS COMPARED TO OTHER TECHNICAL (EXCLUDING ADN) STUDENTS AND TOTAL STUDENT BODY ENROLLED 1992-1993 BY SEX

SEX	SUBJECTS	PERCENT	NON ADN TECHNICAL	PERCENT NON ADN TECHNICAL	STUDENT BODY	PERCENT STUDENT BODY
MALE	54	52.4%	662	37%	891	42.2%
FEMALE	49	47.6%	382	63%	1219	57.8%
TOTAL	103		1044		2110	

More interesting was the more even division between male and female within the study group than within the nonADN technical group and within the student body (see table 3.3). This discrepancy again suggests that the adults returning to update job skills or to try out a new field are largely female (the nonADN technical classification includes the computer technology programs and the office automation program, traditionally female job classifications). Consequently, research subjects reflected gender proportions more in line with the general public than did the college enrollment figures.

Racial breakdown of subjects was likewise more in line with the population of Randolph County than were figures for nonADN technical students and the student body (see Table 3.4). Nonwhite students comprised 5.8% of the group, a proportion close to the county's makeup. In contrast, for the same academic year, 8.6% of nonADN technical and 7% of the student body were nonWhite students. Again, this discrepancy may reflect the nature of the general group of students who return to the college to update job skills, though the small size of the nonWhite group and the small discrepancy may be meaningless.

On other characteristics, the research group was similar to the student body and other technical students. Close to 76% of subjects planned to work while attending college (see Table 3.5). This percentage is almost exactly that of other technical students but a little lower than the 78% of the student body who work while attending college. Secondly, while 61% of all technical students placed into the remedial program at the college, about 66% of subjects did. This, again, constitutes a small discrepancy (see Table 3.6).

Data on comparable groups of new students at the College were unavailable. Since the study was designed to use a nonparametric statistical

TABLE 3.4

SUBJECTS COMPARED TO OTHER TECHNICAL (EXCLUDING ADN) STUDENTS AND TOTAL STUDENT BODY ENROLLED 1992-1993 BY RACE

RACE	SUBJECTS	PERCENT	TECHNICAL	PERCENT	STUDENT BODY	PERCENT
NONWHITE	6	5.8%	90	8.6%	148	7%
WHITE	97	94.2%	954	91.4%	1962	93%
TOTAL	103		1044		2110	

TABLE 3.5

SUBJECTS COMPARED TO OTHER TECHNICAL (EXCLUDING ADN) STUDENTS, AND TOTAL STUDENT BODY ENROLLED 1992-1993 BY EMPLOYMENT

EMPLOYMENT	SUBJECTS	PERCENT	NON ADN TECHNICAL	PERCENT	STUDENT BODY	PERCENT
YES	75	75.8%	795	76.1%	1648	78%
NO	24	24.2%	249	23.9%	462	22%
TOTAL	99		1044		2110	
FREQUENCY MISSING	4					

TABLE 3.6

REMEDIAL PLACEMENT OF SUBJECTS COMPARED TO ALL NON-ADN APPLICANTS JANUARY – SEPTEMBER 1992

REMEDIAL PLACEMENT	SUBJECTS	PERCENT	NON ADN APPLICANTS	PERCENT
YES	65	63.1	289	61
NO	38	36.9	182	39
TOTAL	103		471	

test, this failure was not deemed critical to the outcome of the data analysis. In capturing 103 of the 122 new technical students at the college for the entire academic year 1992-93, the data collection was apparently thorough in covering the population under study.

Other characteristics of subjects.

Data collection on subjects included other characteristics not collected on the general student body (see Table 3.7). This data collection showed that around 24% of subjects were former high-school drop-outs who had obtained the General Education Development Certificate (GED), the high-school diploma equivalent offered through the North Carolina Community College System. About 29% of the subjects reported that they had children. Lastly, 10, or about 10%, of the subjects reported receiving some form of public assistance. Since two subjects left this question blank, it can be assumed that at least 10 (9.7% of the entire group) and no more than 12 (11.7%) subjects were receiving some form of public assistance.

Measures

Testing instruments.

The self-concept instrument selected was the Tennessee Self-Concept Scale, Counseling Form (Form C). This form consists of 100 items and produces 15 profiled scores. Each item, or statement, is answered on a scale of one to five, from "completely true" to "completely false." On the examiner's carbon of the subject's answers, the scale for negative statements is reversed. The numbers for the individual items can then be added to produce a "Total Positive Score" for the subject.

TABLE 3.7

OTHER CHARACTERISTICS OF SUBJECTS

TYPE OF HIGH SCHOOL COMPLETION	SUBJECTS	PERCENT
DIPLOMA	78	76.5%
GED	24	23.5%
TOTAL	102	

DO YOU HAVE CHILDREN ?	SUBJECTS	PERCENT
YES	30	29.1
NO	73	70.9
TOTAL	103	

RECEIVE PUBLIC ASSISTANCE	SUBJECTS	PERCENT
YES	10	9.9%
NO	91	90.1%
TOTAL	101	

Controversy surrounding this instrument is focused on the use and interpretation of the 15 subscores (Hoffman & Gellen, 1983; Marsh & Richards, 1988; Bolton, 1976; Bentler, 1972). The Tennessee Self-Concept Scale (TSCS) produces an "identity," a "self-satisfaction" and a "behavior" rating on each of five areas of the "self." These five areas are "physical self," "moral-ethical self," "personal self," "family self," and "social self." Researchers question whether the statements on the TSCS actually measure these specific facets of the self-concept and whether these specific aspects actually exist. The TSCS is nonetheless accepted as a reliable measure of the general facet of a multifaceted construct of self-concept (Suinn, 1972; Hoffman & Gellen, 1983; Shavelson & Bolus, 1982).

Subjects were classified as having "adequate" or "inadequate" self-concept based on their total score results from the instrument. The manual states that the total score "reflects overall level of self-esteem" and that a high total score indicates that the person "tends to like himself or herself, feels that he or she is a person of value or worth, has self-confidence, and acts accordingly" (Fitts & Roid, 1988, p.3). A low score, on the other hand, indicates that the person "is doubtful about his or her own worth, sees himself or herself as undesirable, often feels anxious, depressed, and unhappy, and has little self-confidence" (ibid.).

The manual defines "normal range" of the Total Positive Score as "in the range of 40T [low] to 70T [high]" with Variability Scores "in the range of 25T [low] to 60T [high]" (ibid.). Variability is the sum of the differences between the highest and the lowest scores that subjects obtain within each of the five "self" categories. If the subject's "physical self"-"identity" score was 25 and his/her "physical self"-"behavior" score was 15, the variability to be added to total

Variability would be 10. Students with Total Positive and Variability scores within the limits described above were classified as having adequate self-concept. Students whose Total Positive and Variability Scores fell above and below these limits were classified as having inadequate self-concepts.

The TSCS has been extensively tested. The total-score reliability for the TSCS is superior to that of the subtests. The manual reports internal consistency reliabilities for Total Score ranging from .91 to .94. Test-retest reliability is reported at .92 for college students. The manual provides extensive tables of correlations with other instruments. Two studies of college students showed correlations of r=.75 and r=.64 with the Coopersmith Self-Esteem Inventory.

For placement into remedial courses, the College uses the College Board's Assessment and Placement Services for Community Colleges (APS). Applicants to the technical programs are required to take the Reading, Writing, and Computation sections of this test unless they meet the criteria for exemption from testing. Applicants to the college who have transfer credit for college-level English and/or math courses are designated "exempt" from testing on the related sections of the test and are not placed into the related remedial courses. Applicants who present SAT scores above 450 on the verbal and/or math sections are likewise designated "exempt" from testing and placement into remedial courses.

The APS is the most extensively used placement test in the North Carolina Community College System (Student Development Administrators Association and Student Development Services, North Carolina Department of Community Colleges, January 1992, p. 1). The manual reports predictive validity based on median correlation with course grades at $\underline{r}$=.28 for the reading section, $\underline{r}$=.32 for

the writing section, and r=.43 for the computation section (College Board, 1985, p.30). Reliability Coefficients (KR-20) are reported at .90 for the reading section, .83 for the writing section, and .88 for the computation section. This instrument was tested and normed on samples of entering community college students.

For placement into remedial courses, the College uses cut scores based on the 50th percentile of the national norms (the cut score is the score below which students are placed into the remedial course). Students who score below 22 out of the 35 items on the reading section, 26 out of the 40 items on the writing section, and 22 out of the 35 items on the computation section are placed into the respective remedial courses. For the purposes of this study, any student who was placed into at least one remedial course was designated "remedial."

Variables.

Student background variables used for this study were the following: (A) academic placement (1 = placed into remedial class, 2 = not placed into remedial class) and (B) level of self-concept (1 = adequate self-concept, 2 = inadequate self-concept). For academic placement, the College Board Assessment and Placement Services for Community Colleges and the RCC placement policy, as described above, were used. For classification into self-concept level, the Tennessee Self-Concept Scale was used as described above.

In addition to self-concept and remedial placement, the following background information was collected for each subject: (A) race (1 = White, 2 = Nonwhite), (B) sex (1 = male, 2 = female), (C) employment while attending RCC (1 = yes, 2 = no), (D) receipt of any form of public assistance (1 = yes, 2 = no), (E) age, (F) responsibility for children (1 = yes, 2 = no), and (G) type of high-

school completion (1 = four-year high-school diploma, 2 = high-school equivalency or GED).

Outcome variables were "persister," "voluntary withdrawal," and "academic leaver." Subjects who remain continuously enrolled in fall, winter, and spring quarters were classified as "persister." Subjects who failed to meet this standard but maintained a 2.0 GPA or withdrew before earning a GPA were classified as "voluntary withdrawal." Subjects who failed to meet the "persister" standard and whose final earned GPA fell below 2.0 were classified "academic leaver."

Data Collection

Data were collected in three phases: at admissions, after fall quarter 1992-93 registration, and after spring quarter 1992-93 registration. As described above, during the admissions process, the RCC admissions counselors screened the initial pool of applicants, administered the Tennessee Self-Concept Scale (TSCS), the Assessment and Placement Services test (APS), and collected the student information sheets from the subjects. At this phase, the counselors forwarded the information sheets and the TSCS answer sheets to the researcher. On both these sheets, students were identified by Social Security Number. From these sheets, the researcher created subject data cards that contained TSCS classification, remedial classification, and outcome classification (persister, voluntary withdrawer, or academic leaver). The researcher scored the TSCS and entered this classification onto the data card, which used the subjects' Social Security Numbers as identifiers. Data cards were then clipped to the student information sheets and a master list of Social Security Numbers was prepared for all subjects.

After fall quarter registration, the RCC registrar received the master list of subjects' Social Security Numbers. On this list the Registrar supplied the subjects' first quarter of enrollment at RCC and their remedial status based on the College's placement policy, described above. From this information, the researcher sorted data cards and assigned each subject a research number (from 1 - 103). A second master list of Social Security Numbers was created for the 103 subjects who met the selection criteria for the project.

After spring quarter 1992-93 registration, the researcher submitted the second master list to the registrar. At this final phase, the registrar supplied the quarters of enrollment for each subject and each subject's GPA status on the master list. From this information, the researcher completed the data card with each subject's outcome classification (persister, voluntary withdrawal, academic leaver).

Assumptions

By design, this project studied only the population of students who were new to RCC at fall quarter registration 1992-93 and who intended to obtain an associate degree. Expected proportions were based on distribution of that population within categories. However, several assumptions were made. (1) Because subjects were allowed to discretely stop answering questions and because admissions counselors had no vested interest in the research project, it was assumed that subjects answered questions honestly and did not feel under duress to complete the questionnaires. (2) Because the instruments were administered by experienced counselors, it was assumed that these counselors did not administer instruments to subjects who were intellectually incapable of understanding the questions and completing the questionnaires accurately. (3) It

was assumed that subjects could and did give the admissions counselors accurate projections of their fall quarter enrollment and intent to obtain a degree at the college. (4) It was assumed that the exclusion of students who did not complete the process did not have an effect on the results of the study.

Research Design

The research design is an associational study of nominal level data. The population has been defined as all of those students who would be targeted for a fall-quarter orientation class: first-time enrollees who intended to obtain a degree in a technical, but not ADN, program. The data were organized into two major contingency tables to test the research hypotheses, one for remedial status by TSCS results and one for outcome status by TSCS results. Data from the student information sheets, which contained student background variables, were used to construct multiple contingency tables to stratify data in order to measure the effect of these background variables on remedial status, TSCS results, and outcome (exit) status. Contingency tables are recommended for retention studies because these tables allow practitioners to institute "effective retention programs" by "accurately" identifying "the patterns and causes of attrition" (Rombouts, 1991, p.45).

Analysis

Statistical analysis employed the contingency coefficient. The basic test was the contingency coefficient, a nonparametric correlation coefficient. The classification of data, described above, served as probability tables to determine significance levels. Significance levels for the resulting correlations were determined by chi-square tests of association (Siegel, 1956, pp. 198-200). The two null hypotheses were that there would be no significant relationship between

self-concept level and remedial placement and that there would be no significant relationship between self-concept level and persistence.

The two hypotheses were tested at the $p=.05$ level of significance. The major data analysis was performed on the Vax Cluster (Steffi) using SAS system software. Data were entered and analyzed under the supervision of a member of the Mathematics Department faculty at the University of North Carolina at Greensboro. Further analysis of the various effects and interactions of the background variables was performed on the StatView software package for the Macintosh Computer at Randolph Community College.

CHAPTER IV

RESULTS

Following the post-World War II breakdown of traditional barriers to postsecondary education for previously disenfranchised groups, numerous studies found stronger relationships between academic success and affective domain measures than between academic success and traditional cognitive measures (Tracey & Sedlecek, 1984, 1985, 1987). Community college educators,especially, became concerned about fostering the success of their students, many of whom would not have been admitted to traditional colleges based upon the results of the traditional cognitive measures. Recently, economic pressures on the community colleges have given impetus to efforts to retain these students.

One common strategy to retain students in community colleges and other sectors of higher education is the orientation class. The two most popular orientation programs are those developed by John Gardner (1989) and Dave Ellis (1991). These programs allow colleges to add development of the student's self-concept to freshman remedial programs. Randolph Community College (RCC) is interested in using this type of course to improve retention of its high-risk students. Before spending limited resources on such a program, the college needs to know (1) if inadequate self-concept is related to retention at Randolph Community College and (2) if placement into the course can be made by results of the college's academic placement test.

The Tennessee Self-Concept Scale (TSCS) was, thus, administered to 257 applicants to RCC between January and December 1992. Of these applicants, 103 registered for the first time at RCC Fall 1992 (college transfer and Associate Degree Nursing students were excluded from the study). Two hypotheses were tested at the $p = .05$ level: (1) that there would be no significant difference between the incidence of students whose TSCS composite scores indicated inadequate self-concept within the group of students whose placement test scores showed need for at least one remedial class and the incidence of students whose TSCS scores indicated inadequate self-concept within the group of students whose placement test scores or other criteria for exemption (SAT scores, transfer credit) showed no need for remedial classes; and (2) that there was no significant difference in the incidence of students whose TSCS composite scores showed inadequate self-concept among each group identified as academic leavers, voluntary withdrawals, or persisters.

Tests of Hypotheses

Results of data analyses showed that 59.22% of the subjects' TSCS results indicated adequate self-concept, that 63.11% of the subjects were placed into at least one remedial course, and that 69.9% of the subjects persisted continuously into the spring quarter of enrollment (see Table 4.1). Voluntary withdrawals constituted 17.48% of the population, and academic leavers constituted 12.62% of the entire group.

Tests of association between self-concept level and remedial placement upheld the first null hypothesis, that there was no significant relationship between remedial placement and level of self-concept (see Table 4.2). With a contingency coefficient of 0.142, this association was not statistically significant.

TABLE 4.1

SUBJECTS BY SELF-CONCEPT LEVEL, REMEDIAL PLACEMENT, AND EXIT

SELF-CONCEPT LEVEL	ADAQUATE NUMBER	INADAQUATE NUMBER
NUMBER	61	42
PERCENT	59.22%	40.78%
REMEDIAL PLACEMENT	NOT PLACED INTO REMEDIAL COURSE	PLACED INTO REMEDIAL COURSE
NUMBER	65	38
PERCENT	63.11%	36.89%

EXIT	PERSISTERS	VOLUNTARY WITHDRAWAL	ACADEMIC LEAVERS
NUMBER	72	18	13
PERCENT	69.9%	17.48%	12.62%

The second null hypothesis, that there was no significant relationship between level of self-concept and retention, was rejected at the p=0.016 level. With a contingency coefficient of 0.273, the association between self-concept level and persistence was shown to be significant at the p=0.05 level (see Table 4.3). While one cell of Table 4.3 does have an expected frequency of less than 5, Glass and Hopkins (1984) endorse use of contingency tables with "average expected frequency as low as 2" with no correction (p. 288n). These data do show no association between self-concept level and remedial placement but do show an association between self-concept level and persistence.

The association between persistence (exit) and remedial placement in the 3X2 table was strong but not statistically significant (p=0.103). However, Table 4.4 shows that while 81.58% of nonremedial students persisted, 63.08% of remedial students persisted (see Figure 4.1). Compared to a contingency coefficient of 0.273 for the test of association between self-concept and exit, the test of association between remedial placement and exit produced a contingency coefficient of 0.206. The noncognitive variable self-concept was thus more closely related to persistence than was the cognitive variable of remedial placement. These data, thus, support at the community college level the conclusions drawn by Tracey and Sedlecek (1984, 1985, 1987 1987) at the university level, that affective variables have a stronger relationship to students' academic success than do cognitive variables. Further, Figure 4.2 shows that while 46.15% of remedial students' TSCS results indicated inadequate self-concept, 31.58% of nonremedial students' results showed inadequate self-concept. Though higher, the proportion of remedial students with inadequate

TABLE 4.2

TEST OF ASSOCIATION
SELF-CONCEPT LEVEL BY REMEDIAL PLACEMENT

SELF-CONCEPT LEVEL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	REMEDIAL PLACEMENT: YES	REMEDIAL PLACEMENT: NO	TOTAL
ADEQUATE		35 33.98 57.38 53.85	26 25.24 42.62 68.42	61 59.22
INADEQUATE		30 29.13 71.43 46.15	12 11.65 28.57 31.58	42 40.78
		65 63.11	38 36.89	103 100.00

CONTINGENCY COEFFICIENT = 0.142
CHI SQUARE = 2.109 PROBABILITY = 0.146
DEGREES OF FREEDOM = 1

TABLE 4.3

TEST OF ASSOCIATION
SELF-CONCEPT LEVEL BY EXIT

SELF-CONCEPT LEVEL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EXIT: PERSISTER	EXIT: VOLUNTARY WITHDRAWAL	EXIT: ACADEMIC LEAVER	TOTAL
ADEQUATE		49 47.57 80.33 68.06	8 7.77 13.11 44.44	4 3.88 6.56 30.77	61 59.22
INADEQUATE		23 22.33 54.76 31.94	10 9.71 23.91 55.56	9 8.74 21.43 69.23	42 40.78
TOTAL		72 60.90	18 17.48	13 12.62	103 100.00

CONTINGENCY COEFFICIENT = 0.273
CHI SQUARE = 8.312 PROBABILITY = 0.016*
DEGREES OF FREEDOM = 2

* SIGNIFICANT AT .05 LEVEL

TABLE 4.4

REMEDIAL PLACEMENT BY EXIT

REMEDIAL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EXIT: PERSISTER	EXIT: VOLUNTARY WITHDRAWAL	EXIT: ACADEMIC LEAVER	TOTAL
YES		41 39.81 63.08 56.94	15 14.56 23.08 83.33	9 8.74 13.85 69.23	65 63.11
NO		31 30.10 81.58 43.06	3 2.91 7.89 16.67	4 3.88 10.53 30.77	38 36.89
TOTAL		72 69.90	18 17.48	13 12.62	103 100.00

CONTINGENCY COEFFICIENT = .206
CHI SQUARE = 4.547 PROBABILITY = 0.103
DEGREES OF FREEDOM = 2

FIGURE 4.1

REMEDIAL PLACEMENT BY EXIT

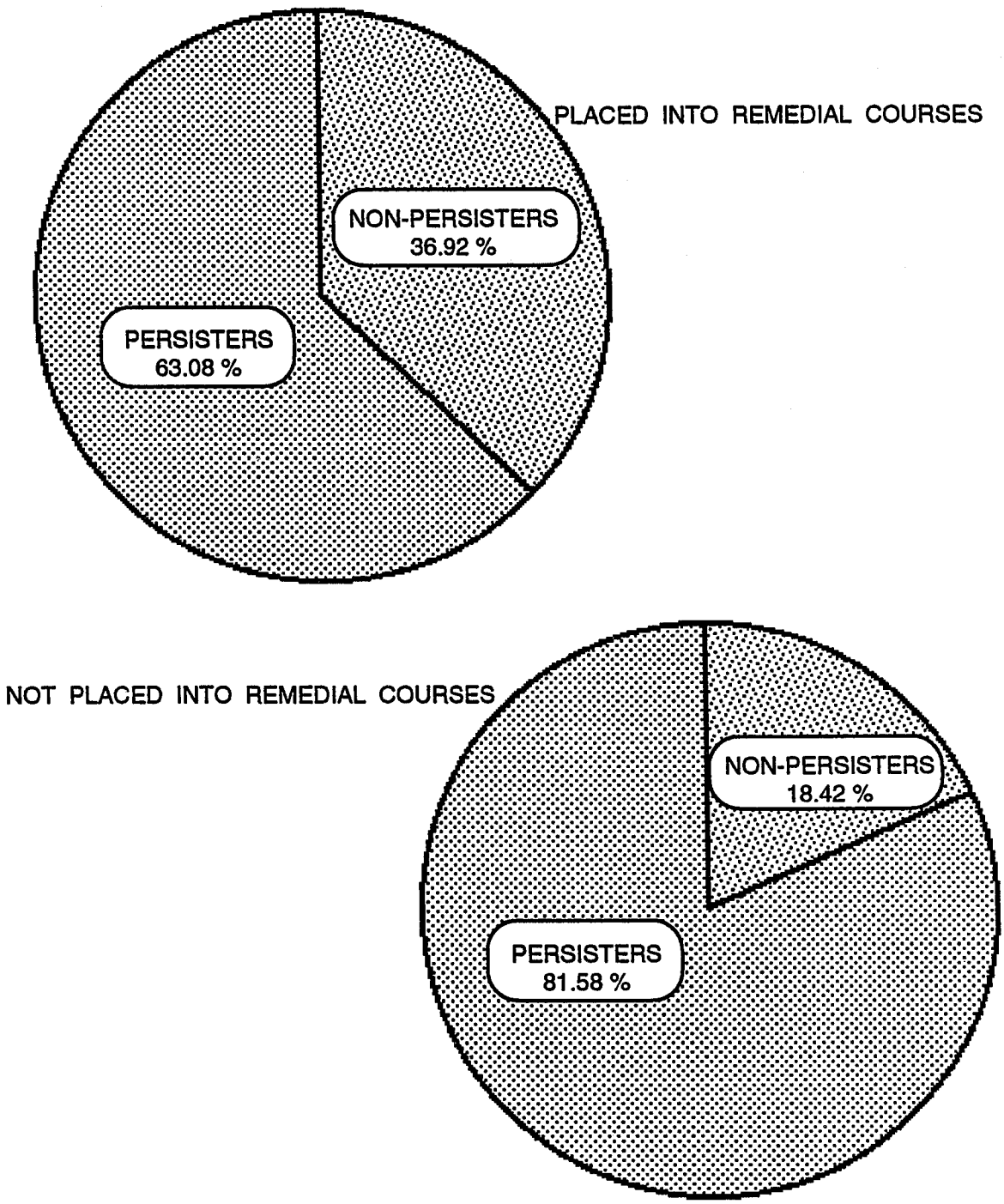
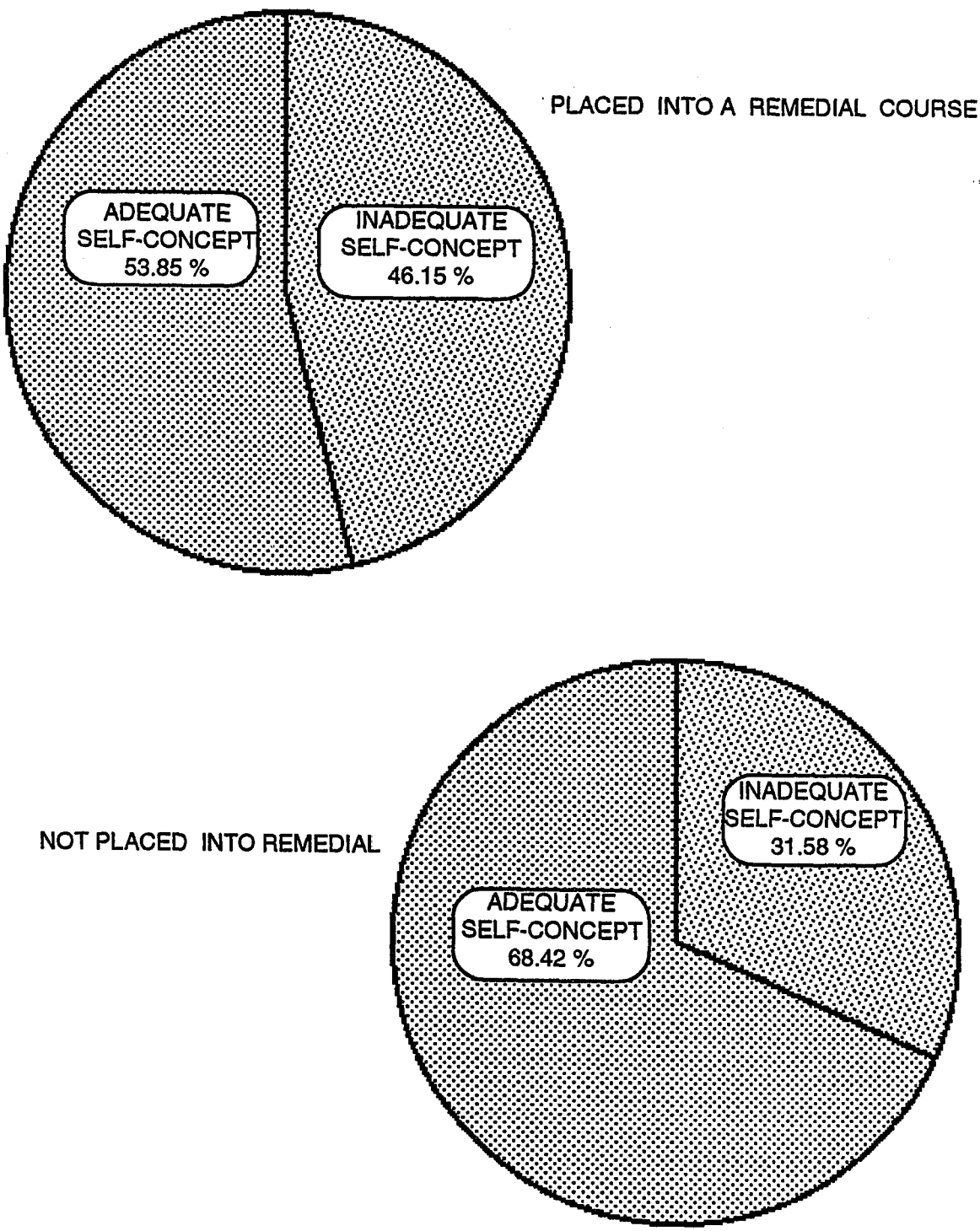


FIGURE 4.2

SELF-CONCEPT BY REMEDIAL PLACEMENT



self-concept was not high enough to establish an association between self-concept and remedial placement.

Self-Concept

One unexpected finding of the study was that 40.78% of the subjects had TSCS results indicating inadequate self-concept. The range of Total Positive Scores on the TSCS that indicate adequate self-concept fall between national norms of the top 1% and the bottom 21% with a few additional subjects expected to indicate inadequate self-concept by variability of scores within subtests. Thus, a little over 22% of subjects should have had TSCS results indicating inadequate self-concept. Assuming the validity of these findings, two explanations for this phenomenon are plausible. First, Randolph County's population as a whole may have lower self-concept than the groups used to establish TSCS national norms. The county is politically and religiously fundamentalist and authoritarian. Alcohol sales are, for example, still illegal in the county. While this sort of fundamentalism is not necessarily linked to lower self-concept, its predominance in the county does show Randolph County to be somewhat different from the national mainstream. Second, Randolph Community College may draw an inordinate number of students with inadequate self-concept. This explanation was offered by one of the admissions counselors involved in the study. This counselor explained that RCC has a reputation for being the place where county residents come for "help" and noted that in his twenty years of experience at RCC the students have tended to have low self-concepts.

Tables 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, and 4.11 show tests of association between TSCS (self-concept) results and various demographic factors: race, sex, type of high school completion, employment, children, public assistance,

and age. None of these tests showed association at statistically significant levels. Table 4.12 shows a comparison of contingency coefficients for these associations for two by two tables. Unlike other correlation coefficients, the contingency coefficient can never equal one. The maximum value of a contingency coefficient is determined by the number of cells in rows and columns. The best use of the contingency coefficient is to compare relative strengths of various relationships. Contingency coefficients can be compared only for tables of the same size (e.g., a 2X2 table can be compared only to other 2X2 tables). This limitation does not, then, allow comparison of the factors arranged in the 2X2 tables with the factor age, which could not be logically arranged in less than a 3X2 table (Siegel, 1956, pp. 198-200). Age nonetheless showed a weak association with self-concept ($p=0.833$). While the category race was not significantly related to level of self-concept, it is noteworthy that four of the six minority students in the study had TSCS results that indicated inadequate self-concept.

Thus, of all the tests of association with self-concept, the only statistically significant association was found between self-concept and persistence. The strength of this association can be seen in the relationship between self-concept and students' status at spring quarter. Figure 4.3 shows a clear trend in proportions of persisters, voluntary withdrawals, and academic leavers who have adequate self-concept. While 68% of persisters had adequate self-concepts, only 44% of voluntary withdrawals and 30% of academic leavers had adequate self-concepts. The ratio of students with adequate self-concept to students with inadequate self-concept moves from 68/31 to 44/55 to 30/69 as one moves from persistence to academic leaving.

TABLE 4.5

SELF-CONCEPT LEVEL BY RACE

SELF-CONCEPT LEVEL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	RACE: NONWHITE	RACE: WHITE	TOTAL
ADEQUATE		2 1.94 3.28 33.33	59 57.28 96.72 60.82	61 59.22
INADEQUATE		4 3.88 9.52 66.67	38 36.89 90.48 39.18	42 40.78
		6 5.83	97 94.17	103 100.00

CONTINGENCY COEFFICIENT = 0.131
CHI SQUARE = 1.78 PROBABILITY = 0.184
DEGREES OF FREEDOM = 1

TABLE 4.6

SELF-CONCEPT BY SEX

SELF-CONCEPT LEVEL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	SEX: MALE	SEX: FEMALE	TOTAL
ADEQUATE		35 33.98 57.38 64.81	26 25.24 42.62 53.06	61 59.22
INADEQUATE		19 18.45 45.24 35.19	23 22.33 54.76 46.94	42 40.78
		54 52.43	49 47.57	103 100.00

CONTINGENCY COEFFICIENT = 0.119
CHI SQUARE = 1.47 PROBABILITY = 0.225
DEGREES OF FREEDOM = 1

TABLE 4.7

SELF CONCEPT LEVEL BY HIGH SCHOOL

SELF-CONCEPT LEVEL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	HIGH SCHOOL: HIGH SCHOOL DIPLOMA	HIGH SCHOOL: GED	TOTAL
ADEQUATE		48 47.06 78.69 61.54	13 12.75 21.31 54.17	61 59.80
INAD-EQUATE		30 29.41 73.17 38.46	11 10.78 26.83 45.83	41 40.20
		78 76.47	24 23.53	102 100.00

FREQUENCY MISSING = 1

CONTINGENCY COEFFICIENT = 0.064
CHI SQUARE = 0.415 PROBABILITY = 0.519
DEGREES OF FREEDOM = 1

TABLE 4.8

SELF CONCEPT LEVEL BY EMPLOYMENT

SELF-CONCEPT LEVEL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EMPLOYMENT: YES	EMPLOYMENT: NO	TOTAL
ADEQUATE		46 46.46 76.67 61.33	14 14.14 23.33 58.33	60 60.61
INADEQUATE		29 29.29 74.36 38.67	10 10.10 25.64 41.67	39 39.39
		75 75.76	24 24.24	99 100.00

FREQUENCY MISSING = 4

CONTINGENCY COEFFICIENT = 0.026
CHI SQUARE = 0.069 PROBABILITY = 0.796
DEGREES OF FREEDOM = 1

TABLE 4.9

SELF-CONCEPT LEVEL BY CHILDREN

SELF-CONCEPT LEVEL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	CHILDREN: YES	CHILDREN: NO	TOTAL
ADEQUATE		14 13.59 22.95 46.67	47 45.63 77.05 64.38	61 59.22
INAD-EQUATE		16 15.53 38.10 53.33	26 25.24 61.90 35.62	42 40.78
		30 29.13	73 70.87	103 100.00

CONTINGENCY COEFFICIENT = 0.162
CHI SQUARE = 2.764 PROBABILITY = 0.096
DEGREES OF FREEDOM = 1

TABLE 4.10

SELF-CONCEPT LEVEL BY PUBLIC ASSISTANCE

SELF-CONCEPT LEVEL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	PUBLIC ASSISTANCE: YES	PUBLIC ASSISTANCE: NO	TOTAL
ADEQUATE		6 5.94 10.00 60.00	54 53.47 90.00 59.34	60 59.41
INAD-EQUATE		4 3.96 9.76 40.00	37 36.63 90.24 40.66	41 40.59
		10 9.90	91 90.10	101 100.00

FREQUENCY MISSING = 2

CONTINGENCY COEFFICIENT = 0.004
CHI SQUARE = 0.002 PROBABILITY = 0.968
DEGREES OF FREEDOM = 1

TABLE 4.11

SELF- CONCEPT LEVEL BY AGE

SELF-CONCEPT LEVEL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	AGE: UNDER 19	AGE: 20--24	AGE: OVER 25	TOTAL
ADEQUATE		27 26.21 44.26 58.70	19 18.45 31.15 63.33	15 14.56 24.59 55.56	61 59.22
INADEQUATE		19 18.45 45.24 41.30	11 10.68 26.19 36.67	12 11.65 28.57 44.44	42 40.78
TOTAL		46 44.66	30 29.13	27 26.21	103 100.00

CONTINGENCY COEFFICIENT = 0.059
CHI SQUARE = 0.366 PROBABILITY = 0.833
DEGREES OF FREEDOM = 2

TABLE 4.12

COMPARISON OF CONTINGENCY COEFFICIENTS FOR DEMOGRAPHIC VARIABLES BY LEVEL OF SELF-CONCEPT (2X2 TABLES)

FACTOR	CONTINGENCY COEFFICIENT	FREQUENCY MISSING	% OF CELLS, EXPECTED COUNT < 5	LOWEST EXPECTED FREQUENCY FOR CELL
PUBLIC ASSISTANCE	0.004	2	25 %	4.059
EMPLOYMENT	0.026	4	N/A	N/A
HIGH SCHOOL	0.064	1	N/A	N/A
SEX	0.119	0	N/A	N/A
RACE	0.130	0	50 %	2.447
CHILDREN	0.162	0	N/A	N/A

* NUMBER OF SUBJECTS WHO DID NOT RESPOND TO ITEM ON QUESTIONNAIRE

Remedial Placement

Of self-concept level, persistence, and remedial placement, only remedial placement showed any statistically significant association with the demographic factors. Tables 4.13, 4.14, 4.15, 4.16, 4.17, 4.18, and 4.19 show these tests of association. The factor age (Table 4.19) again showed a weak association (p=0.607). Table 4.20 shows the comparison of contingency coefficients for the factors from the two by two tables. The responsibility for children in the home is strongly associated with remedial placement: Only 4 of the 30 subjects with children did not have a remedial course requirement (p=0.001). While too few subjects received public assistance to adequately test for significance, it is very noteworthy that all 10 of these subjects had remedial requirements. Since all of these subjects did have children, they can logically be treated as a subgroup of all students with children. The relationship between children in the home and academic success among the subjects will be discussed in depth below.

Two other tests of association with remedial placement showed significant results. The association between type of high-school completion and placement into a remedial course was an expected result (p=0.022). Only 4 of the 24 subjects who held GEDs did not place into a remedial course. The association between sex and remedial placement (p=0.013) was not expected. This finding calls into question the gender fairness of the placement test, though such results may indicate a local school system that poorly prepares females for college-level work or a local culture in which women are not encouraged to pursue academics.

Several findings point to the cultural explanation for the higher rate of women with remedial course requirements. First, 15, or 30.6%, of the female subjects held GEDs rather than four-year high school diplomas. Of male

FIGURE 4.3

SELF-CONCEPT LEVEL BY EXIT: COMPARISON OF PROPORTIONS

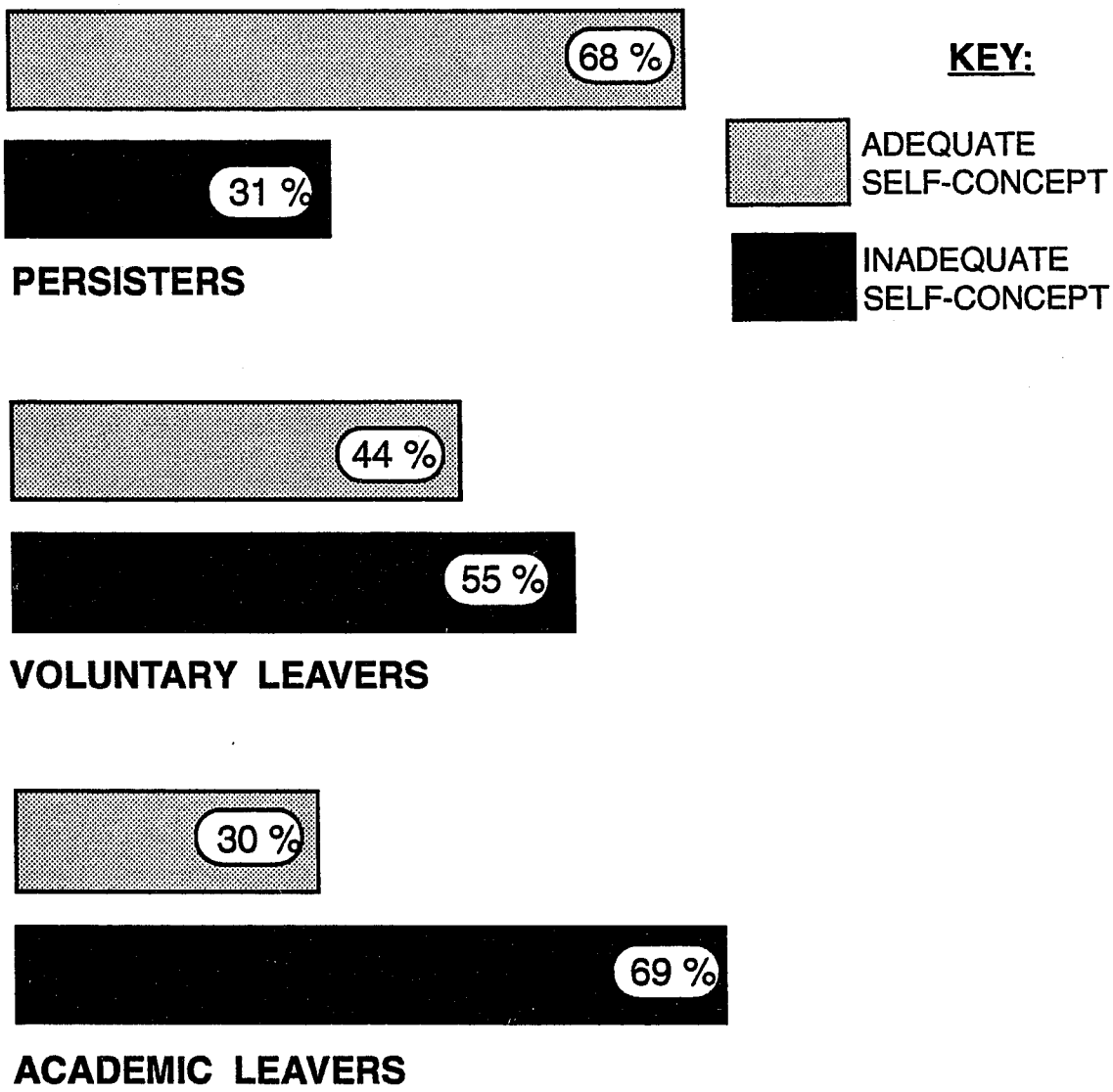


TABLE 4.13

TABLE OF REMEDIAL BY RACE

REMEDIAL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	RACE: NONWHITE	RACE: WHITE	TOTAL
YES		5 4.85 7.69 83.33	60 58.25 92.31 61.86	65 63.11
NO		1 .097 2.63 16.67	37 35.92 97.37 38.14	38 36.89
		6 5.83	97 94.17	103 100.00

CONTINGENCY COEFFICIENT = 0.104
CHI SQUARE = 1.120 PROBABILITY = 0.290
DEGREES OF FREEDOM = 1

TABLE 4.14

REMEDIAL BY SEX

REMEDIAL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	SEX: MALE	SEX: FEMALE	TOTAL
YES		28 27.18 43.08 51.85	37 35.92 56.92 75.51	65 63.11
NO		26 25.24 68.42 48.15	12 11.65 31.58 24.49	38 36.89
		54 52.43	49 47.57	103 100.00

CONTINGENCY COEFFICIENT = 0.238
CHI SQUARE = 6.176 PROBABILITY = 0.013*
DEGREES OF FREEDOM = 1

*SIGNIFICANT AT .05 LEVEL

TABLE 4.15

REMEDIAL BY HIGH SCHOOL

REMEDIAL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	HIGH SCHOOL: DIPLOMA	HIGH SCHOOL: GED	TOTAL
YES		45 44.12 69.23 57.69	20 19.61 30.77 83.33	65 63.73
NO		33 32.35 89.19 42.31	4 3.92 10.81 16.67	37 36.27
		78 76.47	24 23.53	102 100.00

FREQUENCY MISSING = 1

CONTINGENCY COEFFICIENT = 0.221
CHI SQUARE = 5.220 PROBABILITY = 0.022*
DEGREES OF FREEDOM = 2

* SIGNIFICANT AT .05 LEVEL

TABLE 4.16

REMEDIAL PLACEMENT BY EMPLOYMENT

REMEDIAL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EMPLOYMENT: YES	EMPLOYMENT: NO	TOTAL
YES		49 49.49 77.78 65.33	14 14.14 22.22 58.33	63 63.64
NO		26 26.26 72.22 34.67	10 10.10 27.78 41.67	36 36.36
		75 75.76	24 24.24	99 100.00

FREQUENCY MISSING = 4

CONTINGENCY COEFFICIENT = 0.062
CHI SQUARE = 0.385 PROBABILITY = 0.535
DEGREES OF FREEDOM = 1

TABLE 4.17

REMEDIAL PLACEMENT BY CHILDREN

REMEDIAL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	CHILDREN: YES	CHILDREN: NO	TOTAL
YES		26 25.24 40.00 86.67	39 37.86 60.00 53.42	65 63.11
NO		4 3.88 10.53 13.33	34 33.01 89.47 46.58	38 36.89
		30 29.13	73 70.87	103 100.00

CONTINGENCY COEFFICIENT = 0.299
CHI SQUARE = 10.092 PROBABILITY = 0.001**
DEGREES OF FREEDOM = 1

** SIGNIFICANT AT 0.001 LEVEL

TABLE 4.18

REMEDIAL PLACEMENT BY PUBLIC ASSISTANCE

REMEDIAL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	PUBLIC ASSISTANCE: YES	PUBLIC ASSISTANCE: NO	TOTAL
YES		10 9.90 15.63 100.00	54 53.47 84.38 59.34	64 63.37
NO		0 0.00 0.00 0.00	37 36.63 100.00 40.66	37 36.63
		10 9.90	91 90.10	101 100.00

FREQUENCY MISSING = 2

CONTINGENCY COEFFICIENT = 0.244
CHI SQUARE = 6.417 PROBABILITY = 0.011*
DEGREES OF FREEDOM = 1

* SIGNIFICANT AT 0.05 LEVEL

TABLE 4.19

REMEDIAL PLACEMENT BY AGE

SELF-CONCEPT LEVEL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	AGE: UNDER 19	AGE: 20--24	AGE: OVER 25	TOTAL
YES		27 26.21 41.54 58.70	19 18.45 29.23 63.33	19 18.45 29.23 70.37	65 63.11
NO		19 18.45 50.00 41.30	11 10.68 28.95 36.67	8 7.77 21.05 29.63	38 36.89
TOTAL		46 44.66	30 29.13	27 26.21	103 100.00

CONTINGENCY COEFFICIENT = 0.098
CHI SQUARE = 0.997 PROBABILITY = 0.607
DEGREES OF FREEDOM = 2

TABLE 4.20

COMPARISON OF CONTINGENCY COEFFICIENTS
REMEDIAL PLACEMENT BY DEMOGRAPHIC VARIABLES
(2 X 2 TABLES)

FACTORS	CONTINGENCY COEFFICIENT	FREQUENCY MISSING	PERCENT OF CELLS, EXPECTED FREQUENCY < 5	LOWEST EXPECTED FREQUENCY/ CELLS
EMPLOYMENT	0.062	4	N/A	N/A
RACE	0.104	0	50%	2.213
SELF-CONCEPT	0.142	0	N/A	N/A
HIGH SCHOOL	0.221*	1	N/A	N/A
SEX	0.238*	0	N/A	N/A
PUBLIC ASSISTANCE	0.244*	2	25%	3.663
CHILDREN	0.299**	0	N/A	N/A

* SIGNIFICANT AT .05 LEVEL
** SIGNIFICANT AT .001 LEVEL

subjects, 9, or 17%, held GEDs (one male subject did not give this information). Only one female subject who held a GED did not have a remedial requirement. Second, of the 37 women who had a remedial requirement, 17, or 45.9%, had responsibility for children, and 14, or 37.8%, held GEDs. In contrast, of the 12 women who did not have a remedial requirement, only 3, or 25%, had children, and 11, or 91.7%, held four-year high-school diplomas. While these data do not adequately explain the higher rate of females placed into the remedial courses, they do point to more complex explanations than the validity of the placement test.

Persistence

Tables 4.21, 4.22, 4.23, 4.24, 4.25 4.26, and 4.27 show tests of association between persistence rates (exit) and demographic variables. None of these tests produced statistically significant results. Table 4.28 shows a comparison of contingency coefficients for these 3x2 tables. The factor age showed a weak association (p=0.280). Only self-concept had a significant relationship with students' success, but race, remedial placement, sex, and children showed the strongest relationships of the other variables tested. Regrettably, the small number of minority subjects does not allow conclusions to be drawn about this association.

Figures 4.4, 4.5, and 4.6 illustrate the relationship of self-concept to persistence of subjects by sex, remedial placement and children. The persistence rate for all subjects was 69.9%. The persistence rate for subjects with adequate self-concept was 80.3%, and the persistence rate for subjects with inadequate self-concept was 54.8%. Within the groups of subjects by sex and by remedial placement, these proportions remain steady. Within the groups of

students by children, however, only 37.5% of students with inadequate self-concept and responsibility for children persisted (see Figure 4.6).

The most damaging combination of factors to student success, then, was responsibility for children and inadequate self-concept. The most positive combination of factors was lack of a remedial requirement and adequate self-concept. Of students with no remedial requirement and with adequate self-concept, 88.5% persisted (see Figure 4.5). However, with adequate self-concept, 78.6% of students with children and 74.29% of students with remedial requirements persisted (see Figures 4.5 and 4.6). These results suggest that adequate self-concept allows students with barriers such as lack of adequate academic preparation (remedial placement) and complicated home lives (responsibility for children) to succeed at rates close to students without such barriers but with adequate self-concept.

These findings are, thus, consistent with Werner and Smith's (1989, 1991) sociological work: Adequate self-concept appeared to allow students with disadvantages to succeed. Furthermore, students with inadequate self-concept but with no disadvantages succeeded at rates lower than their peers. Consistent with Ethington's model of student retention (1990), these findings suggest that self-concept may explain how various demographic factors interact for individual students to facilitate or impede persistence in an academic program (Tinto, 1982, p.691).

TABLE 4.21

RACE BY EXIT

RACE	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EXIT: PERSISTER	EXIT: VOLUNTARY WITHDRAWAL	EXIT: ACADEMIC LEAVER	TOTAL
NONWHITE		3 2.91 50.00 4.17	3 2.91 50.00 16.67	0 0.00 0.00 0.00	6 5.83
WHITE		69 66.99 71.13 95.83	15 14.56 15.46 83.33	13 12.62 13.40 100.00	97 94.17
TOTAL		72 69.90	18 17.48	13 12.62	103 100.00

CONTINGENCY COEFFICIENT = 0.216
CHI SQUARE = 5.022 PROBABILITY = 0.081
DEGREES OF FREEDOM = 2

TABLE 4.22

SEX BY EXIT

SEX	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EXIT: PERSISTER	EXIT: VOLUNTARY WITHDRAWAL	EXIT: ACADEMIC LEAVER	TOTAL
MALE		39 37.86 72.22 54.17	6 5.83 11.11 33.33	9 8.74 16.67 69.23	54 52.43
FEMALE		33 32.04 67.35 45.83	12 11.65 24.49 66.67	4 3.88 8.16 30.77	49 47.57
TOTAL		72 69.90	18 17.48	13 12.62	103 100.00

CONTINGENCY COEFFICIENT = 0.198
CHI SQUARE = 4.190 PROBABILITY = 0.123
DEGREES OF FREEDOM = 2

TABLE 4.23

HIGH SCHOOL BY EXIT

HIGH SCHOOL	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EXIT: PERSISTER	EXIT: VOLUNTARY WITHDRAWAL	EXIT: ACADEMIC DISMISSAL	TOTAL
DIPLOMA		57 55.88 73.08 79.17	12 11.76 15.38 66.67	9 8.82 11.54 75.00	78 76.47
GED		15 14.71 62.50 20.83	6 5.88 25.00 33.33	3 2.94 12.50 25.00	24 23.53
TOTAL		72 70.59	18 17.65	12 11.76	102 100.00

FREQUENCY MISSING = 1

CONTINGENCY COEFFICIENT = 0.111
CHI SQUARE = 1.267 PROBABILITY = 0.531
DEGREES OF FREEDOM = 2

TABLE 4.24

EMPLOYMENT BY EXIT

EMPLOYMENT	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EXIT: PERSISTER	EXIT: VOLUNTARY WITHDRAWAL	EXIT: ACADEMIC LEAVER	TOTAL
YES		54 54.55 72.00 78.26	13 13.13 17.33 72.22	8 8.08 10.67 66.67	75 75.76
NO		15 15.15 62.50 21.74	5 5.05 20.83 27.78	4 4.04 16.67 33.33	24 24.24
TOTAL		69 69.70	18 18.18	12 12.12	99 100.00

FREQUENCY MISSING = 4

CONTINGENCY COEFFICIENT = 0.095
CHI SQUARE = 0.898 PROBABILITY = 0.638
DEGREES OF FREEDOM = 2

33% OF THE CELLS HAVE EXPECTED COUNTS LESS THAN 5. CHI-SQUARE MAY NOT BE A VALID TEST.

TABLE 4.25

CHILDREN BY EXIT

CHILDREN	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EXIT: PERSISTER	EXIT: VOLUNTARY WITHDRAWAL	EXIT: ACADEMIC LEAVER	TOTAL
YES		17 16.50 56.67 23.61	8 7.77 26.67 44.44	5 4.85 16.67 38.46	30 29.13
NO		55 53.40 75.34 76.39	10 9.71 13.70 55.56	8 7.77 10.96 61.54	73 70.87
TOTAL		72 69.90	18 17.48	13 12.62	103 100.00

CONTINGENCY COEFFICIENT = 0.185
CHI SQUARE =3.656 PROBABILITY = 0.161
DEGREES OF FREEDOM = 2

TABLE 4.26

PUBLIC ASSISTANCE BY EXIT

PUBLIC ASSISTANCE

FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	EXIT: PERSISTER	EXIT: VOLUNTARY WITHDRAWAL	EXIT: ACADEMIC LEAVER	TOTAL
YES	6 5.94 60.00 8.57	3 2.97 30.00 16.67	1 0.99 10.00 7.69	10 9.90
NO	64 63.37 70.33 91.43	15 14.85 16.48 83.33	12 11.88 13.19 92.31	91 90.10
TOTAL	70 69.31	18 17.82	13 12.87	101 100.00

FREQUENCY MISSING = 2

CONTINGENCY COEFFICIENT = 0.105
CHI SQUARE = 1.133 PROBABILITY = 0.537
DEGREES OF FREEDOM = 2

TABLE 4.27

AGE BY EXIT

AGE	FREQUENCY / PERCENT / ROW PERCENT / COLUMN PERCENT	PERSISTER	VOLUNTARY WITHDRAWAL	ACADEMIC LEAVER	TOTAL
UNDER 19		31 30.10 67.39 43.06	6 5.83 13.04 33.33	9 8.74 19.57 69.23	46 44.66
20--24		20 19.42 66.67 27.78	7 6.80 23.33 38.89	3 2.91 10.00 23.08	30 29.13
OVER 25		21 20.39 77.78 29.17	5 4.85 18.52 27.78	1 0.97 3.70 7.69	27 26.21
		72 69.90	18 17.48	13 12.62	103 100.00

CONTINGENCY COEFFICIENT = 0.217
CHI SQUARE =5.071 PROBABILITY = 0.280
DEGREES OF FREEDOM = 4

33% OF THE CELLS HAVE EXPECTED COUNTS LESS THAN 5. CHI-SQUARE MAY NOT BE A VALID TEST

TABLE 4.28

COMPARISON OF CONTINGENCY COEFFICIENTS
EXIT BY OTHER FACTORS
(3X2 TABLES)

FACTORS	CONTIGENCY COEFFICENT	FREQUENCY MISSING	PERCENTAGE OF CELLS WITH EXPECTED FREQUENCY LESS THAN 5	LOWEST EXPECTED FREQUENCY OF A CELL
EMPLOYMENT	0.095	4	33.	2.919
PUBLIC ASSISTANCE	0.105	2	33	1.287
HIGH SCHOOL	0.111	1	N/A	2.822
CHILDREN	0.185	0	N/A	N/A
SEX	0.198	0	N/A	N/A
REMEDIAL PLACEMENT	0.206	0	N/A	N/A
RACE	0.216	0	50	0.7572
SELF-CONCEPT	0.284*	0	N/A	N/A

* SIGNIFICANT AT .05 LEVEL

FIGURE 4.4

COMPARISON OF PERSISTENCE RATES OF STUDENTS BY LEVEL OF SELF-CONCEPT AND SEX

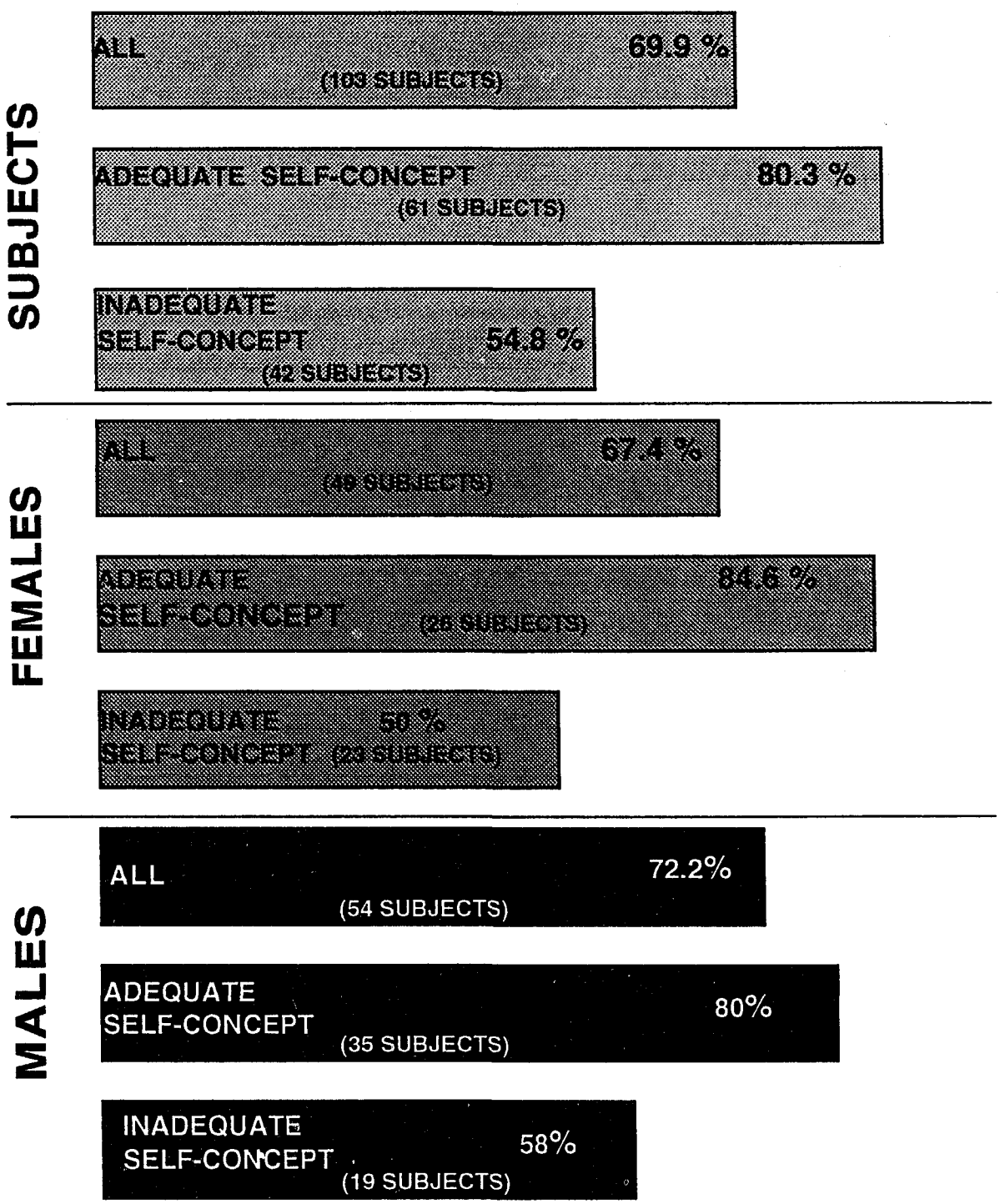


FIGURE 4.5

COMPARISON OF PERSISTENCE RATES BY SELF-CONCEPT LEVEL AND REMEDIAL PLACEMENT

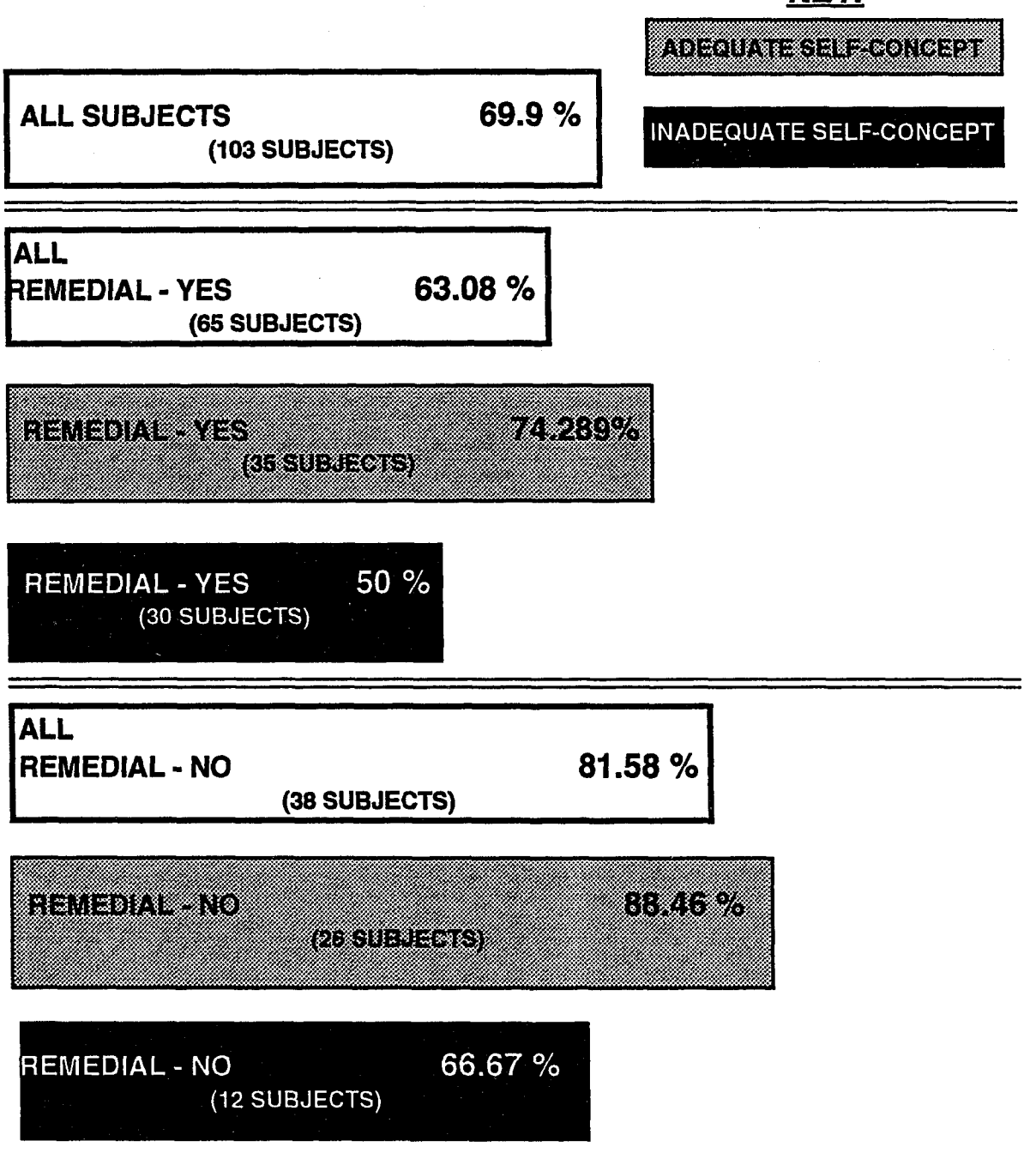


FIGURE 4.6

COMPARISON OF PERSISTENCE RATES OF STUDENTS BY LEVEL OF SELF-CONCEPT AND CHILDREN

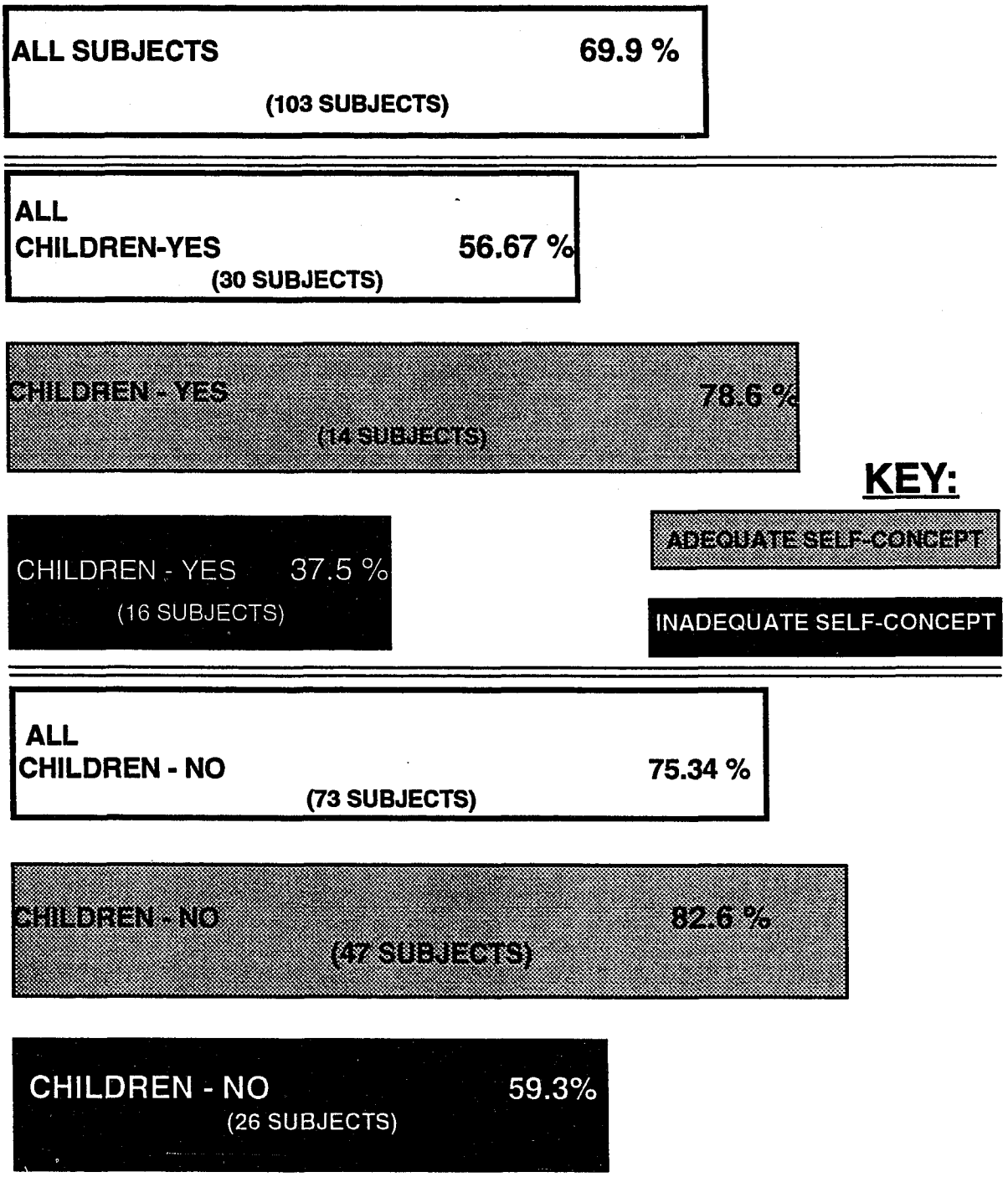


TABLE 4.29

COMPARISON OF CONTINGENCY COEFFICIENTS
VARIABLES BY EXIT, REMEDIAL PLACEMENT AND SELF-CONCEPT LEVEL
(2X2 TABLES)

FACTOR	CONTINGENCY COEFFICIENT EXIT	CONTINGENCY COEFFICIENT REMEDIAL	CONTINGENCY COEFFICENT SELF-CONCEPT LEVEL
EMPLOYMENT	0.095	0.062	0.026
PUBLIC ASSISTANCE	0.105	0.244*	0.004
HIGH SCHOOL	0.111	0.221*	0.064
CHILDREN *	0.185	0.299**	0.162
SEX	0.198	0.238*	0.119
REMEDIAL PLACEMENT	0.206	N/A	0.142
RACE	0.216	0.104	0.131
SELF-CONCEPT	0.284*	0.142	N/A

* SIGNIFICANT AT .05 LEVEL
** SIGNIFICANT AT .001 LEVEL

CHAPTER V
DISCUSSION

Like other sectors of higher education, the community colleges are examining orientation courses as a means of increasing student retention. The most popular models for orientation courses have been those developed by Gary Ellis (1991) and John Gardner (1989). These courses complement the standard academic remedial program by focusing on development of students' self-concept. A proposal was made at Randolph Community College to develop such an orientation course geared toward improving students' self-concept. With only student demographic information and academic records readily available, the proposal was made to place students into this course based upon the results of the students' academic placement tests. Previous research in the four-year sector, however, suggested that affective variables are stronger predictors of persistence than are cognitive variables (Tracey & Sedlecek, 1984, 1985, 1987) and that level of self-concept may not be related to academic test scores. (Badgett, Hope, & Kerly, 1971; Ferguson & Bitner, 1984). The purpose of this research was to test the relationships between self-concept and remedial placement and between self concept and retention at Randolph Community College.

Summary

In order to best use its resources, Randolph Community College needed to know (1) if there was a significant relationship between level of self-concept and

retention and (2) if there was a significant relationship between self-concept and students' placement into remedial courses. Between January and September, 1992, all applicants to the college who intended to enroll for the first time in a technical program in Fall 1992 were administered the Tennessee Self-Concept Scale (Associate Degree Nursing students were excluded). Of these applicants, 103 students did enroll for the first time in the fall. These students were then tracked through their spring quarter registration. At that time the students were classified as persisters, voluntary withdrawals, or academic leavers.

Conclusions

Two hypotheses were tested at the $p = .05$ level: (1) that there was no significant relationship between the students' level of self-concept and the students' remedial placement and (2) that there was no significant relationship between the students' level of self-concept and the students' persistence into the third quarter. Tests of association showed no significant relationship between self-concept and remedial placement but did show a significant relationship between self-concept and persistence.

The results of this study showed that for the selected population, level of self-concept was not significantly related to academic placement but was related to students' continuous enrollment into the third quarter. In addition, more students in the research group had TSCS scores indicative of inadequate self-concept than expected from national norms. These results suggested that the College may indeed need to investigate the efficacy of an orientation course modeled on the Gardner or Ellis programs but that placing students into such a course based solely on academic characteristics is not feasible. Given adequate self-concept, 74% of students who had remedial requirements persisted. By

comparison, among students without adequate self-concept, only 67% of these students who did not have remedial requirements persisted. Additional evaluation of students' self-concept during the college admissions process may be warranted.

These results are consistent with Tracey and Sedlecek's (1984, 1985, 1987) studies of nontraditional and traditional students in the four-year sector: Self-concept was more strongly related to persistence than was the cognitive variable of remedial placement. These results are also consistent with Ethington's (1990) model of student retention, which incorporates self-concept into the theoretical framework of student retention.

Finally, Werner and Smith's (1977, 1989) sociological work on disadvantaged populations may well explain the differences in student success rates among subgroups. Students with children, for example, are perhaps better able to overcome external barriers to academic success if they have adequate self-concept. Of students with children, 79% of those with adequate self-concept persisted while only 37.5% without adequate self-concept persisted. A clear trend of student's final status was also noted with 31% of persisters, 55% of voluntary leavers (GPA above 2.0), and 69% of academic leavers (GPA below 2.0) having inadequate self-concept. Students with adequate self-concept appeared to be more resilient than those without adequate self-concept.

Discussion

The confusion of test scores with level of self-concept results, perhaps, from middle-class prejudice. Given a middle-class value system, lack of academic preparation for college may indeed cause or stem from inadequate self-concept. If this middle-class prejudice does exist, it is interesting that it is not associated

with race. About 94% of this study's students and the student body are White. The existence of such prejudice would add another dimension to the campus's efforts to promote and be sensitive to issues of student diversity. Student differences on campus may be deeper than race and may involve conflicting value systems between students and administration.

A better understanding of the community college student entails a better understanding of the world in which he/she lives. Given that his/her college experience competes with the extra-collegiate experience, it only makes sense for community colleges to study their students in the context of the community as a whole. Two findings in this study do not make sense without data on the community at large. First, the implications of the large percentage of students with inadequate self-concept (40%) can be understood only in light of the culture from which these students come. Second, a large percentage of women in the study had remedial requirements (76% compared to 52% of men). The gender-fairness of the placement test may be called into question, but this disparity can be explained only by understanding the role women play in the culture of Randolph County.

Researchers in the four-year sector would relieve colleges of the responsibility for problems that the students bring with them from the external environment by implying that colleges can do little about such problems. (Bean & Metzner, 1985). This attitude belongs to the tradition of the college as a closed community of scholars. The community colleges' mission requires that these colleges seek to understand their students and their students' needs. It is thus imperative that community college research attend to the various cultural forces

that shape their students. Only by understanding these forces can colleges respond to them in the design of services to improve student success.

Recommendations

Future studies should address the role of self-concept and other affective variables in the success rates of students. However, this sort of research will have less meaning without data on the community at large. An ideal study of retention on a community college campus would, thus, encompass demographic, psychological, sociological data. While this study did show a relationship between self-concept and student persistence, future study needs to be made of the effectiveness of the existing orientation course models in improving student retention through improving self-concept. Lastly, community colleges need more resources devoted to research. While schools of education on university campuses support research on public schools and on university students, very few academic departments in the U.S. are devoted to community college education. North Carolina, for example, has only one at N. C. State University. Only through extensive research currently beyond the means of the average community college can the complexities of student retention on the community college campus be understood and properly treated.

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