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## Factors of Persistence and Voluntary Decisions of Withdrawal Among Nontraditional Age College Students: A Theoretical Approach

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FACTORS OF PERSISTENCE AND VOLUNTARY DECISIONS  
OF WITHDRAWAL AMONG NONTRADITIONAL AGE  
COLLEGE STUDENTS: A THEORETICAL APPROACH

by

Robert M. Abene

A Dissertation Submitted to the Faculty of the School of  
Education of Loyola University of Chicago in Partial  
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Abstract

This research investigated factors associated with the academic persistence of 165 nontraditional age college students from four Chicago-area private institutions. Three questionnaires were developed and presented over a 16 month period based upon Pascarella and Terenzini's research (1980) on Tinto's model of institutional departure (1975, 1987). Additional questions were added pertaining to adult student needs and outside commitments. Variables associated with pre-entry attributes, goals and commitments, academic integration, and impediments to adult persistence proved statistically significant; with very little significance found among those items measuring social integration.

In particular items associated with: intent to seek a bachelor's degree, continuing goal and institutional commitments, adult needs concerning basic skill development and child care, employment and financial concern, choice of college attended, college major, number of class hours enrolled, and the number of hours completed at previous colleges were found to differentiate persisters, stopouts and withdrawals. Furthermore, nontraditional age students were found to be much more highly invested in the academic rather than the social system of the college. Recommendations were made both to clarify these factors in future research and apply the results to enhance the retention of adult students.

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## VITA

Robert M. Abene was born in Chicago, Illinois on May 12, 1944. He attended several elementary Catholic schools in the Chicago area, and graduated from St. Gregory High School. Robert attended Loyola University in Chicago receiving a B.S. degree in Psychology in May 1968. He was very involved in student life at Loyola, founding the United Independents of Loyola, chairing the Inter-collegiate Music Festival, and serving on the Student Activities Board. He was inducted into several honorary organizations including Alpha Sigma Nu and Blue Key. Robert also received a M.A. in Communication Disorders from DePaul University, an M.S. in Psychology from St. Francis College and pursued graduate work in these specialties at Michigan State University, Pepperdine University and the University of Tennessee.

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CHAPTER I  
INTRODUCTION

The average rate of attrition among college and university students over a four-to five year period has been reported to range from 35 to over 50 percent (Astin, 1975; Beal & Noel, 1980; Summerskill, 1962, Tinto, 1987). When the eventual return of stopouts, as well as the completion of a two-year degree, are factored in; it is estimated that anywhere from 30 to 40 percent of students who enter college will leave without ever earning a degree (Pantages and Creedon, 1978, p. 49; Tinto, 1987, p. 21). The scope of this departure is made dramatically clear in Tinto's further statement that: "of the nearly 2.6 million persons who entered degree programs in higher education for the first time in 1981, one can expect nearly 1,065,000 of them to leave the enterprise without completing their programs" (1987, p. 21). Such student losses have helped stimulate the rise in enrollment maintenance research over the last four decades.

Until the last 15 years, a seemingly endless pool of recent high school graduates more than compensated for most rates of student attrition. The boom in traditional college age students doubled enrollments between 1953 and 1977 (Centra, 1980). However, projection for future

enrollments through 1995 shows a steady decline both in the number of high school graduates, as well as the total number of college enrollments (Centra, 1980; The Chronicle of Higher Education Almanac, 1990, U.S. Department of Education, 1985).

The impact of enrollment upon private institutions, whose budgets are tuition driven, is especially acute (Terenzini & Pascarella, 1977; Thomas & Bean, 1988). Thus, the decline in enrollment, coupled with the increased cost incurred in operating colleges and universities, has given rise to a greater interest in researching factors affecting students attrition and academic persistence.

Related to the increased interest in this area of research, has been the recent development of theoretical models explaining college student retention (i.e., Bean, 1980, 1983; Bean & Metzner, 1985; Metzner & Bean 1987; Rootman, 1972; Spady, 1970; Tinto, 1975, 1987). Prior to 1970, such research was primarily limited to descriptive statements regarding statistical data gathered on college dropouts. However, such studies did not adequately address the question of why students were leaving institutions of higher learning. Although descriptive information was valuable, the addition of theoretical models: guided research and brought a sense of order to



the numerous descriptive variables (Bean, 1983, p. 129); developed a relationship between various individual and institutional characteristics (Tinto, 1975, p. 90); and provided, "the foundation for a more comprehensive and individualized approach to the issue of student retention" (Hossler, 1984, p. 102).

#### Purpose of the Study

It is reported that the number of students over the age of 25 increased by 11 percent on all college campuses between 1970 and 1982 (Smart & Pascarella, 1987). Supporting this finding, Magarrell (1981) states at the beginning of the 1980's that enrollment patterns at colleges and universities in the United States indicate that the number of traditional age students is declining, while admissions of college students 25 years of age and above are on the rise. Furthermore, Magarrell quotes the U.S. Census Bureau report that, "more than a third of all college students now are 25 or older" (p. 3).

The total number of nontraditional age students (including those enrolled in two-year, four-year, and graduate programs) has risen from 28 percent in 1970 to what is projected to be 49 percent of college enrollment in 1993 (U.S. Department of Education, 1985). If students between the ages of 22 to 25 are included, the increase in

the number of these older students is even larger. It is noted that individuals beyond the age range of 18-22 comprise the fastest growing segment (48 percent) of the total enrollment in higher education (Rawlins & Davies, 1981).

Although there have been some statements issued that indicate this trend is slowing (Centra, 1980; Levine and Associates, 1989), current figures continue to support these increases in older college students. Of the 11,047,902 undergraduates enrolled during the fall of 1987, 36.7 percent were 25 years of age or older ("The Nation", 1990). With the potential pool of this adult age classification in the United States rising from 55.36 percent in 1960 to 63.15 percent in 1988, (U.S. Department of Commerce, 1990, p. 18), there is every indication that the nontraditional age student will continue to be a large segment of the college population.

These demographic trends suggest that institutions of higher education need to consider marketing themselves to the nontraditional age population. With today's emphasis on supporting a total program of enrollment management (see Hossler, 1984), there are many factors to consider in approaching such a plan. Primary among these is the need for the institution to: "have knowledge of the charac-

teristics of those who are currently enrolled and change their retention and recruitment plans to meet the older students' needs" (Kuh & Ardaiole, 1979). This statement implies pursuing research concerning the needs and attitudes of the older, adult student as they impact academic persistence.

However, much less is known about the causes of attrition among nontraditional age students than that of their traditional age classmates. With the exception of Bean and Metzner (1985), and Metzner and Bean (1987), most of the classic causal models of attrition (Bean, 1980, 1983; Rootman, 1972; Spady, 1970; and Tinto, 1975, 1987) while implying a broad range of application, have been developed by studying the needs, goals, and general milieu of younger students. Also, many of the past research studies and literature reviews on student attrition focused their attention on the more traditional age population of students (Astin, 1975; Pascarella & Terenzini, 1976, 1977, 1978, 1979a, 1979b, 1980; Terenzini & Pascarella, 1977, 1984) or discounted the importance of age as a factor influencing attrition (Lenning, Beal & Sauer, 1980; Pantages & Creedon, 1978). While age was included as a variable in several other studies (Pascarella, 1982; Pascarella & Chapman, 1983; Pascarella, DUBY, Miller & Rasher, 1981), the focus of these

studies was not on that of the nontraditional age student. However, since the average age of undergraduate students is rising, this variable warrants investigation and research.

The purpose of this dissertation is to investigate the correlates of academic persistence among nontraditional age students enrolled in traditional academic programs at four Chicago-area private colleges and universities. Utilizing Tinto's model of institutional departure (1975, 1987) as the theoretical foundation, and drawing on numerous studies of Pascarella and Terrenzini in operationalizing this model, a longitudinal study was conducted from September of 1984 through December of 1985. Results among the various factors studied and the enrollment status of the students at the end of the study were statistically analyzed. This information was also compared with academic retention studies conducted by others on both traditional and nontraditional age students.

#### Objectives of the Study

The following two statements form the objectives of this research study:

1. To conduct a longitudinal study of factors affecting the academic persistence of entering nontradi-

tional age undergraduate students enrolled in Chicago-area private four-year senior colleges and universities.

2. To assess the explanatory power of Tinto's model of institutional departure on the academic persistence of nontraditional age students.

### Research Hypotheses

The research hypotheses of this dissertation take the form of five statements. All refer to students enrolled in four year undergraduate programs. Stated in their null form, they are:

1. There are no significant relationships among the independent variables measuring pre-entry attributes, and the dependent variable categories of same persister, same stopout, and withdrawal.

2. There are no significant relationships among the independent variables measuring goals and commitments, and the dependent variable categories of same persister, same stopout, and withdrawal.

3. There are no significant relationships among the independent variables measuring academic integration, and the dependent variable categories of same persister, same stopout, and withdrawal.

4. There are no significant relationships among the independent variables measuring social integration, and

the dependent variable categories of same persister, same stopout, and withdrawal.

5. There are no significant relationships among the independent variables measuring impediments to adult persistence, and the dependent variable categories of same persister, same stopout, and withdrawal.

### Definition of Key Terms

#### Nontraditional Age Student

Unless otherwise indicated in the review of a particular study, this term will apply to an individual who is 25 years of age or older. The selection of the minimal age for this category is based upon many of the studies discussed in Chapter II of this dissertation, as well as the age categories used by educational organizations such as the National Center for Educational Statistics, and the Carnegie Council (Carnegie Council on Policy Studies in Higher Education, 1980; Magarrell, 1981; U.S. Department of Education, 1985).

#### Traditional Age Student

Unless otherwise indicated in the review of a particular study, the traditional age student will be operationally defined as being in the age category up through 24; and categorizes the student who enters higher education immediately (or soon after) completing high

school. The selection of this range gives ample latitude for the possibility of short-term illnesses, part-time work obligations, grade failure, or a change of major which would cause a slight extension in one's traditional educational plans.

### Academic Persistence

Academic persistence refers to the status and classification of college enrollment. This status and classification will be differentiated into "persister", "stopout", "dropout", and "withdrawal".

#### Persister

Persisters are those students who remain enrolled in college. They will be further differentiated into the following two categories:

##### Same persister.

This term refers to an individual who continues college enrollment throughout this study at the same institution. Students within this category will be referred to simply as "persisters" in Chapters IV, and V.

##### Transfer persister.

This term refers to an individual who continues college enrollment, but does so at an institution different from the one entered at the start of this study.

### stopout

This term operationally defines a student who voluntarily leaves an institution, but plans to resume college studies. These "stopouts" will be further differentiated into the following two categories:

#### Same stopout.

This term refers to an individual who plans to return to the institution entered at the start of this study. Students within this category will be referred to simply as "stopouts" in Chapter IV, and V.

#### Transfer stopout.

This term refers to an individual who plans to continue college studies at another institution.

### Dropout

A student who voluntarily leaves the institution originally enrolled in at the beginning of this study and has no stated plans to resume a college education.

### Withdrawal

A student who voluntarily leaves the institution during the course of this study. For purposes of statistical study and discussion in Chapters IV, and V it will include those students who belong to the category of "transfer persister", "transfer stopout", and "dropout", and any other student who indicated that they completed their educational goal during this study. Reasons for



grouping these categories within this one classification will be discussed in Chapter IV.

#### Impediments to Adult Education

This term refers to those variables which hamper or obstruct nontraditional age students from becoming further committed and integrated into the college. This concept is supported through studies reviewed by Weidman (1983) who refers to these factors as "personal contingencies", and related to Tinto's (1987) more recent acknowledgement of "external commitments" affecting decisions of institutional departure.

#### Limitations of the Study

This study has been affected by factors which may limit its reliability. Originally, research was planned in which a large number and wide range of adult student participants would be assessed. However, this plan proved difficult to implement, since the timeliness and follow-through of the distribution of the first mailing to prospective participants was dependent upon the assistance of administrative offices at the participating college sites, and not under the control of the experimenter. The restricted use of the student directory information also prevented the possibility for follow-up to those not responding to the initial mailing. Thus, this contributed

to the relatively small number of individuals who participated in the study.

Likewise, the original research protocol for this study called for all background information packets to be mailed prior to the start of the fall semester, 1984. Such a mailing occurring prior to the start of classes would help to give a more accurate account of a student's intent to complete their goals prior to being influenced by factors related to their individual classes and instructors. Therefore, this would help control for such potential influences. However, the participating institutions were still processing the application and registration materials of their new adult students after classes began. Thus, the initial research mailing was delayed. Potential student participants began to receive these packets several weeks after classes began, and this initial mailing continued until the end of November, 1984.

Also, since this study was conducted using students enrolled in four-year programs at four selected private colleges, care should be taken when interpreting or comparing these findings to research conducted at other institutions, especially public colleges and universities or community colleges.

### Unique Focus of Research

Since most college attrition studies have been conducted on traditional age students, there has been a lack of research to guide this study. Although this factor can -and did- lead to the novelty and the excitement of the research process, it also did not allow for the level of comparison available to other well-researched topics. A far-reaching goal of this study is to help lay the foundation for further such research.

### Intervening Variables

Unlike their traditional age counterparts, the nontraditional age student is primarily part-time (Kayla, 1982; "The Nation," 1990), with family, work, and community commitments. Although this study attempted to account for some aspects of these variables, others may exist which were not acknowledged and yet could be unknowingly affecting the academic persistence of the older student.

Various intervening variables may also impact and possibly change the self-reported categorization of adult students. No one can foresee a deviation in future plans, and this is compounded in the life of a nontraditional age student with many competing obligations. Thus, an adult student's present milieu may change, altering educational plans and membership in one of the research categories of

academic persistence they had designated during the course of this study.

### Order of Presentation

Chapter II contains a review of the literature. It begins with a general examination of research on academic persistence and attrition of college students. Causal models of attrition are then presented with special emphasis on Tinto's description of institutional departure. The variables which will be researched in this study are then examined through various published studies and reviews of the literature. A section is included focusing upon selected adult student needs. This section concludes with a brief summary of the literature review and its impact upon this study.

The third chapter begins with a review of the research hypotheses, followed by the general procedures, methodology, and selection of subjects utilized in this study. A delineation of the selection and development of the three survey instruments (The Background Information Questionnaire, The TAP Research Questionnaire, and The Enrollment Status Questionnaire) is also included in this section.

A description of the statistical results of the data obtained in this study provides the context for Chapter

IV. It includes an overview of the sample, as well as results provided through analysis of variance and discriminant analysis. The final chapter provides a brief summary and discussion of this dissertation research. Conclusions, implications and recommendations for further research are also included in this final Chapter.

## CHAPTER II

## REVIEW OF RELATED LITERATURE

## Demographic Perspective

The average dropout rate from higher education has remained fairly constant (Astin, 1975; Beal & Noel, 1980; Summerskill, 1962; Tinto, 1987). With the exception of World War II and a few years immediately following it (when the impact of the G.I. Bill was being felt), the rate of completion among those enrolled in postsecondary degree programs from 1880 to 1980 has remained at about 45 percent (Tinto, 1982, 1987). Due mostly to economic conditions, this rate of attrition has "not varied by more than plus or minus 8 percent" during this past 100 years (Tinto, 1987, p. 207).

Although this rate of attrition has remained fairly constant, the total number of individuals enrolling in higher education has rapidly increased. By the early 70's those lost to attrition had thus risen from less than 80,000 in the earlier part of the century to some two million individuals (U.S. Department of Commerce, 1974). Utilizing current figures ("The Nation", 1990), a 45 percent attrition rate will eventually lead to 5,945,850 students who entered in the fall of 1990 not completing their degrees.

With the rate of population growth slowing and the rising cost of education, institutional survival has generated an interest in studying various correlates related to academic persistence. From the initial nationwide surveys (Astin, 1975; Beal and Noel, 1980; Iffert, 1957; Summerskill, 1962), to those being currently conducted, the goal has been to identify these correlates and hopefully reverse this trend in attrition.

As the number of older students enrolling in higher education increases (Magarrell, 1981; U.S. Department of Education, 1985; Rawlins & Davies, 1981; Smart & Pascarella, 1987), additional challenges are faced in attempting to study such a diverse population (Marlow, 1989; Spratt, 1984). However, with the current percentage of 25 year old and older undergraduate students enrolled in college reaching 37 percent ("The Nation", 1990), and the prediction by the mid-90's that 50 percent or less of the college population will be composed of students immediately out of high school (Grennan & Schneider, 1989; The Pew Higher Education Research Program, 1990); the study of these adults is not only important, but encouraged (Levitz & Noel, 1980). Since it has also been noted that these older students have a higher rate of attrition from college than their traditional age classmates (Metzner & Bean, 1987), investigating the

reasons why they remain or leave college is the focus of this study.

#### Methodological Issues in Attrition Research

As Terenzini (1980, p. 262) states: "No causal connections can be made between or among variables and students attrition decisions." This statement reflects the unlikelihood of easily and precisely defining the variable(s) directly causing a student's decision to withdraw from an institution. Also considering this quandary, Tinto (1987) notes that: "Despite the extensive body of literature which speaks to the question of student departure, there is still much we do not know about the longitudinal process of student learning and the complex interplay of forces which give rise to it" (p. 3). Considering these comments, it is essential to select a sound research design from a variety of those currently used whenever studying academic persistence.

Regarding the autopsy (a retrospective or post hoc survey), cross-sectional, and longitudinal designs, Terenzini (1980) recommends the use of the latter in studying attrition. Since entering students appear more cooperative to requests for information, the response rates in a longitudinal study that begins at the start of an entering student's education will be higher than that



of the autopsy approach. Also, this method has the added advantage over the cross-sectional design in obtaining in its first (of several) surveys, "far more information on students' precollege backgrounds, attitudes, and experiences than is likely to be available in their admissions file" (p. 261). This factor allows for a greater statistical control of precollege differences between the various groups being studied such as, persisters, stopouts, and withdrawals.

Astin (1975) cautions against the sole use of the autopsy design in studying academic persistence. When confronted with questions regarding reasons for dropping out, the answers may not reflect the true causes of such action. "To accept such post hoc interpretations at face value is a questionable practice, considering the complexity of the dropout phenomenon and the natural tendency for persons to rationalize behavior which might be regarded by others as evidence for failure" (p. 14).

Although costly in time, money and intensity of research management, Terenzini (1980) recommends the longitudinal design as the "most powerful and attractive" of the above methods. However, he also states that a mixture of designs might enhance the results of the study, with the longitudinal/autopsy hybrid perhaps being the most beneficial combination.

Pantages and Creedon (1978) also support the use of a longitudinal design for studying attrition. After completing their review of twenty-five years of research in the field, they state that the use of long term longitudinal studies (the ideal being those extended over a ten year period) would generate more accurate results by accounting for such factors as reentering stopouts. Thus, in addition to the issue of research design, types of student persistence and attrition must be carefully defined.

It is estimated that approximately only four out of ten entering freshmen are likely to receive baccalaureate degrees within the traditional four year period (Iffert, 1958; Pantages and Creedon, 1978; Jackley and Henderson, as cited in Avakian, Makinney, & Allen, 1984, p.6; Tinto, 1987). Categorizing the remaining six of these is not an easy task. Since many attrition studies are cross-sectional in design, or have not extended longer than a four year period, it is difficult to determine if such individuals will ever return to college to complete their degrees.

In an attempt to be more precise in the study of academic persistence, Pantages and Creedon (1978) recommend "using a system of classification that

distinguishes between those who graduate in four years at the same institution, those who drop out and later reenroll (at the same or at a different institution) and graduate, and those who are permanent dropouts" (p. 92).

Even considering this further definition of the nonpersister, it is impossible to thoroughly account for the intent and future educational plans of those who do not follow the continuous and traditional path of obtaining their baccalaureate degrees in four years. Although Tinto (1987) estimates that, "41 of every 100 entrants will depart the educational system without earning a college degree" (1987, p. 21); this figure needs to be considered with some caution since it is only based upon projections from current demographic information. As Astin (1975, p. 6) states in his extensive study on college dropouts: "No categorization will be wholly satisfactory until all students either obtain their degrees or die without receiving them: any former student can, in theory, go back to college at any time to complete the degree."

Recognizing this limitation, another benefit of utilizing a longitudinal design is the capability of further clarifying and distinguishing among various categories of academic persistence including those of stopouts, who may eventually complete their degree at the

same or another institution. Although Summerskill (1962) suggests that most of these individuals never do complete their degree, other longitudinal studies suggest that this may not be an accurate assumption (Avakian et al., 1984; Eckland, 1964).

Over a ten year period, Eckland (1964) traces the educational records of 1,181 full-time 18 year old males who entered in 1952. Although 50.3 percent (594) drop out of continuous attendance and don't graduate within the traditional four year period, extending the study over a ten year period reveals that 70.2 percent of these individuals (417) return to college with an additional 54.9 percent (229) eventually graduating during the ten years after matriculation.

In more recent research, Avakian et al. (1984), utilizing a computerized enrollment program, pursue an eight year study of students enrolled in a nonresidential public, urban university. In this study, five groupings of first-time freshmen and transfer students who register in the fall of 1975 through the fall of 1979 are examined in relationship to their enrollment and reenrollment patterns through the fall of 1982. Whereas the pattern of academic persistence is higher for first-time freshmen than that of transfer students, the cumulative percentage

of transfer students who graduate by the fourth year is almost double that of the first-time freshmen.

The authors suggest that whereas transfer students intend to complete a degree, many first-time freshmen are taking courses to learn another area of employment, upgrade their skills, or prepare for transfer to a residential campus. Whether they leave for reasons related to family responsibilities, employment demands, military obligations, or personal concerns; students who are categorized as stopouts are becoming more numerous on college campuses. Not differing greatly from Avakian et al.'s (1984) partial explanation why first-time students enter college, many stopouts also appear to reenter higher education for purposes of enhancing their career and vocational education (Smart & Pascarella, 1987). Whatever their reasons, it appears important to recognize this category of academic persistence, and not confuse it with those individuals more correctly classified as dropouts, or-if a particular institution or group of institutions are studied-withdrawals.

Another concern related to research design has been raised by Eckland (1965). He suggests that the use of single institution studies may result in limited data which are not applicable to tests of reliability. Eckland postulates that the reason such factors as the socio-

economic status of students have revealed ambiguous correlations to academic persistence is that the population from these uni-institutional research studies tend to be homogeneous. Thus, the results of such studies favor the particular group, and make their universal application weak. The use of multi-institutional research is demonstrated in several large attrition studies conducted during this past decade (Pascarella, 1982, 1985; Pascarella & Chapman, 1983; Pascarella, Smart, Ethington, & Nettles, 1987; Smart & Pascarella, 1987; Stoecker, Pascarella & Wolfe, 1988).

Following these research suggestions and related studies, this dissertation will employ a longitudinal/autopsy design utilizing four institutions. The category of same stopout will also be included among the three dependent groupings of students being assessed in this study.

### Models of Student Attrition

Until the early 1970's, most retention research was descriptive rather than theory-based (Rootman, 1972). The addition of research models during the past two decades brings much direction to this important field of study. The early models of Spady (1970) and Rootman (1972) will be briefly reviewed relating several of their findings to

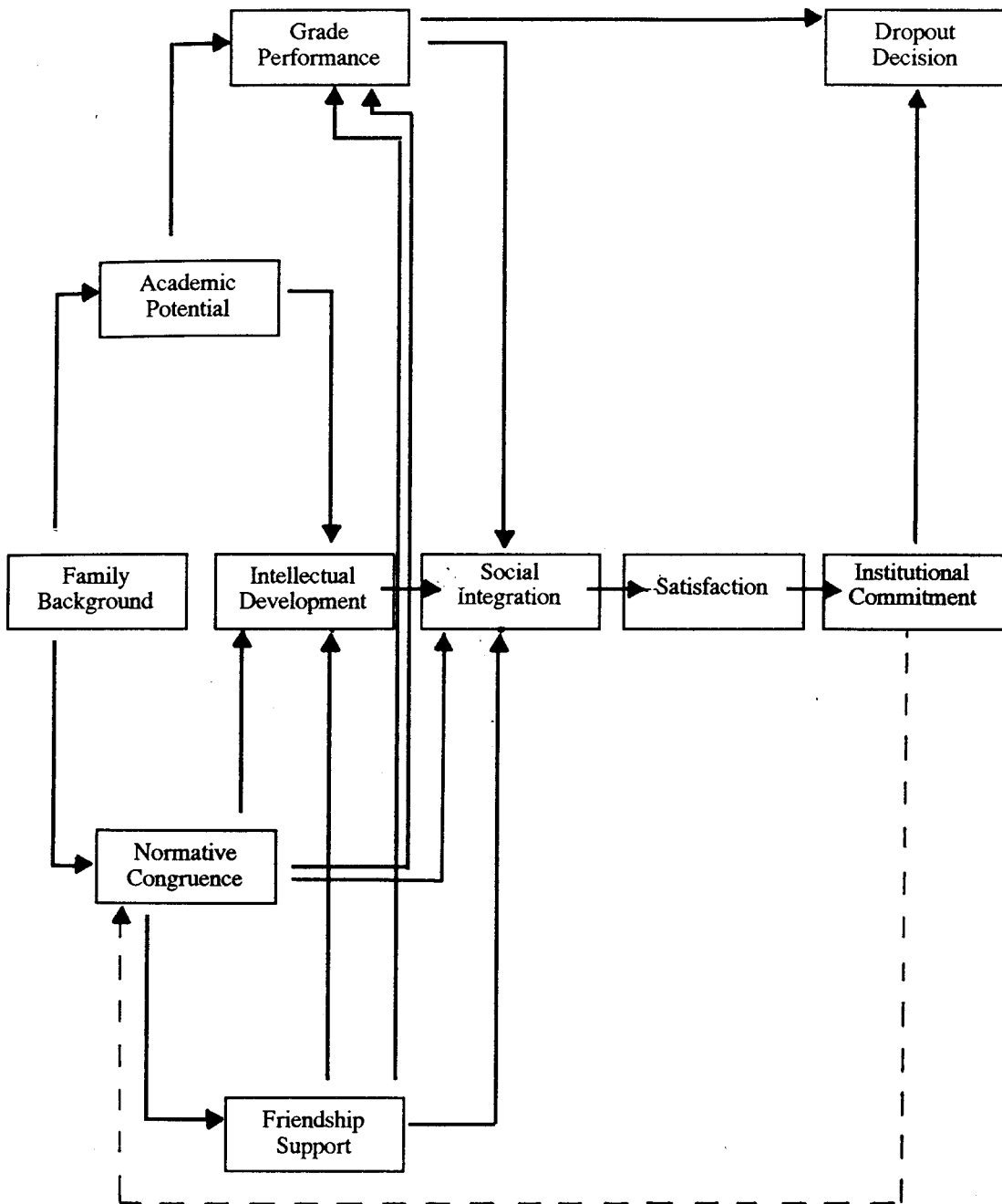
Tinto's model (1975, 1987). Although differing from Tinto's constructs, Bean's industrial model (1980, 1983) will also be briefly review for its practical insights into decisions for dropout. However, since it provides the conceptual basis for this dissertation, special emphasis will be given to Tinto's model of integration (1975, 1987).

### Spady

Spady (1970) advances one of the earliest models of college student attrition (Figure 1). Utilizing a concept of integration based upon a sociological model of suicide (Durkheim, 1951)<sup>1</sup>, Spady develops a model of dropout emphasizing multiple and intervariable components of college dropout. Although he admits that "no one theoretical model or research design could possibly systematize or operationalize the specific relationships among all of the variables that are related to academic persistence" (p. 77), he strongly discourages the further use of descriptive, atheoretical bivariate research methods for retention studies.

One's family background (complete with its cultural components and influence upon academic potential) provides the foundation for Spady's model. In assessing attrition, he establishes the use of five independent variables:

Figure 1

Spady's Sociological Model of the Dropout Process

Note. Adapted from Spady, 1970, p.79.



academic potential, normative congruence, grade performance, intellectual development and friendship support. Each of these variables interrelates with each other and with a fifth variable, social integration, which Spady believes in turn influences satisfaction, institutional commitment, and finally, one's decision to persist or drop out.

The broken line from institutional commitment back to normative congruence demonstrates the developmental feedback component of this model. As Spady states: "we are suggesting here that the result of this whole process may lead to changes in attitude, interest, goals, or motivation that will in turn have repercussions at later stages of the college career" (p. 79). Also, this model exhibits (via its direct line from grade performance to dropout decision) that a student may be forced to leave an institution due to poor academic performance even if this individual is integrated in and committed to the institution.

The factors concerning a student's family background, intellectual development and grade performance, friendship support and social integration, and institutional commitment are related to - and form the basis of - Tinto's more recent model of student attrition (1975, 1987).

### Rootman

Rootman (1972) advocates a model of attrition noting four major limitations of most earlier studies: (1) They are not theory based, (2) they do not distinguish between voluntary and involuntary dropouts, (3) they study only one or two independent variables, and (4) they tend to utilize only one type of "adult socializing organization", i.e., colleges (pp. 258-59).

Interested in studying retention among the military academies, Rootman selects the United States Coast Guard Academy because it has the "highest attrition rates of all the service academies in the United States" (p. 29). Although his model is not tested within a traditional college environment, his findings further demonstrate potential causal relationships for attrition.

Focusing upon the first year of Academy training (and especially "scrub summer"), 200 variables utilizing 14 instruments are assessed. A "person-role fit" model is established after refining the 200 variables to the following eight factors and multiple correlations of voluntary withdrawal:

1. Personality measured by Autonomy (Aut) scales of the Edwards Personal Preference Schedule ( $R = .289$ );

2. Actual attachment from "insiders" measured by proportion of "likes" received from classmates two weeks after arrival at the Academy ( $R = .361$ );

3. Discussion of leaving with "outsiders" measured by number of "outsiders" with whom individual discussed leaving in first two weeks ( $R = .409$ );

4. Discussion of leaving with "insiders" measured by number of persons inside the Academy with whom individual discussed leaving in first two weeks ( $R = .432$ );

5. Section Change measured by whether or not individual was placed in a new section at the end of first week ( $R = .478$ );

6. Interests measured by interest in Foreign Languages ( $R = .461$ );

7. Perceived attachment from "insiders" measured by degree to which individual felt he was "getting" along with others two weeks after arrival at the academy ( $R = .471$ ); and

8. Values measured by extent to which a "chance to exercise leadership" was important to the individual in choice of an "ideal" career or job ( $R = .480$ ) pp. 262-3.<sup>2</sup>

Constructing the intercorrelations among these variables, and considering the pressures on a cadet in such a military environment to conform, Rootman states

that academic persistence relies upon: "the degree to which his own properties 'fit' the role of cadet at entry and the degree to which he 'fits' the group with which he is socialized" (p. 266). If this cadet is unable to modify his properties (personality, interests, or values) or become more attractive to his peers, he will probably experience "strain". This condition will, in turn, likely lead to illness and/or temporary psychiatric symptoms, relieved by voluntary withdrawal.

Although Rootman appears cautious in generalizing the use of his model to other populations and environments, he did state that it may have value in assessing other "total" socializing organizations (such as seminaries, convents, and nursing schools). Thus, academic persistence among professional schools within a university or within subsets of collegiate organizations (Greek system, residence halls, etc.) might be evaluated utilizing this model. While Rootman's caution needs to be recognized, his finding of institutional and interpersonal fit is related to some of the social integration factors which will be later investigated within Tinto's model (1975, 1987). The concept of appropriate fit with others within an institution is also aligned with the concerns

adult students have upon entering college (Byrne, 1989; Reiner, 1990), and will be reviewed later in this chapter.

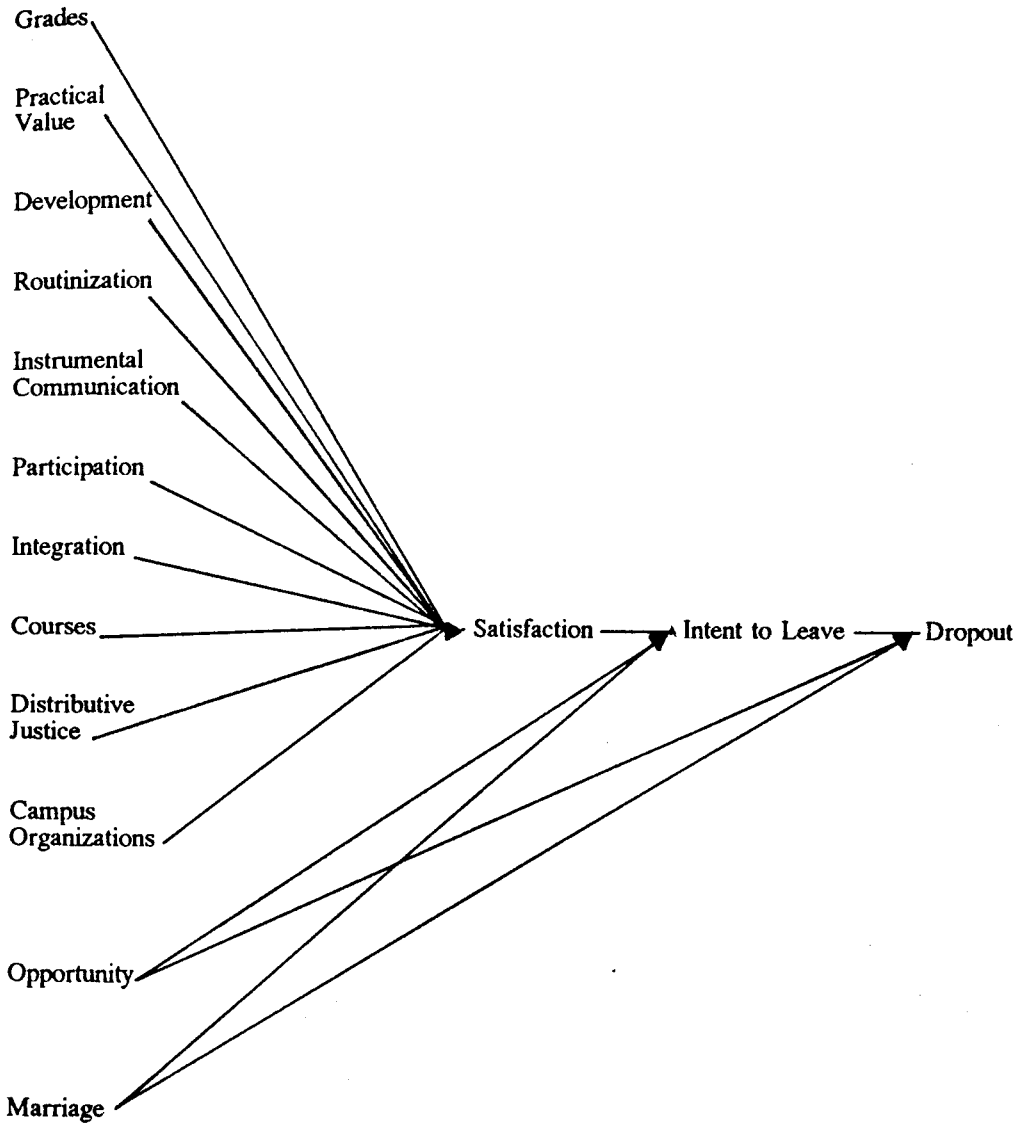
#### Bean's Industrial Model

Utilizing theories of turnover in work settings (Price, 1977; Price & Mueller, 1981), Bean has developed an industrial model of college student attrition. In one study to test this model (focusing on less than 1,000 Caucasian, single, entering full-time freshmen students under the age of 22), he is able to account for 21 percent of the variance in dropout for women and 12 percent for men (1980).

Applying techniques of multiple regression and path analysis, Bean's original model (1980) demonstrates the effects of satisfaction and institutional commitment (intervening variables), organizational determinants, and background variables upon dropout and academic persistence. Although characteristic differences are discovered between male and female students who withdraw, institutional commitment exerts the strongest influence upon attrition for the entire group.

Using a slightly refined model by deleting the background variables, Bean (1983) further tests his theory of attrition (Figure 2). Limiting his subjects to 21-year olds or younger, full-time freshmen women enrolled in a

Figure 2

Industrial Model of Student Attrition

Note. Adapted from Bean, 1983, p. 132.

nursing program who are U.S. citizens and have not transferred from other institutions, Bean selects 820 homogeneous individuals. His sample, however, is biased toward higher ability students, with only 1.4 percent representing the bottom quartile on ACT scores (p. 137).

The variables measuring intent to leave (the estimated likelihood on discontinuing from college), the college grade point average, courses (the degree to which the student views the content of the curriculum as desirable), and marriage (the likelihood of marrying before completing a degree) are all found to significantly relate to withdrawal from the institution. Bean further notes that intent to leave statistically demonstrates "more than four times the importance of grades", which is its nearest rival in influencing withdrawal (p. 142).

Thus, intent to leave appears to have the greatest influence upon attrition. Isolating it from the effects of the other variables, it explains 45.3 percent of the variance in dropout, making its use, according to Bean, "mandatory" for further studies of academic persistence.

As was previously stated, grades, marriage, and courses are also found significantly related to withdrawing from college. In regard to the latter, it is conjectured that although students might be in favor of

the courses offered by the college, their inability to enroll in them due to class closings or because of their freshman status (or their poor achievement if they had the opportunity to enroll) causes cognitive dissonance, withdrawal, and subsequent dropout. Compared with Bean's earlier study (1980), the consistency of the correlation to this present research is, "remarkably high, enhancing the validity of both studies" (p. 145).

Supporting some of Tinto's constructs (1975, 1987), aspects of academic and social integration are present in Bean's model. However, the absence of background variables; the specification of intent to leave rather than institutional commitment; specific one-way causal orderings of variables related to withdrawal; and the use of specific student organizational interactions as to determine satisfaction, differentiate Bean's work from Tinto's model.

Tinto (1987) recognizes that Bean, Spady and Rootman comprehend the role of institutional environment upon attrition and retention. However, he also believes that Bean (1980, 1983) fails to clarify the mechanisms by which the college environment affects withdrawal. Whereas Spady (1970) and Rootman (1972) suggest such a mechanism, "they



fail to adequately distinguish among the varying forms of departure which may be effected by the environment" (p. 90).

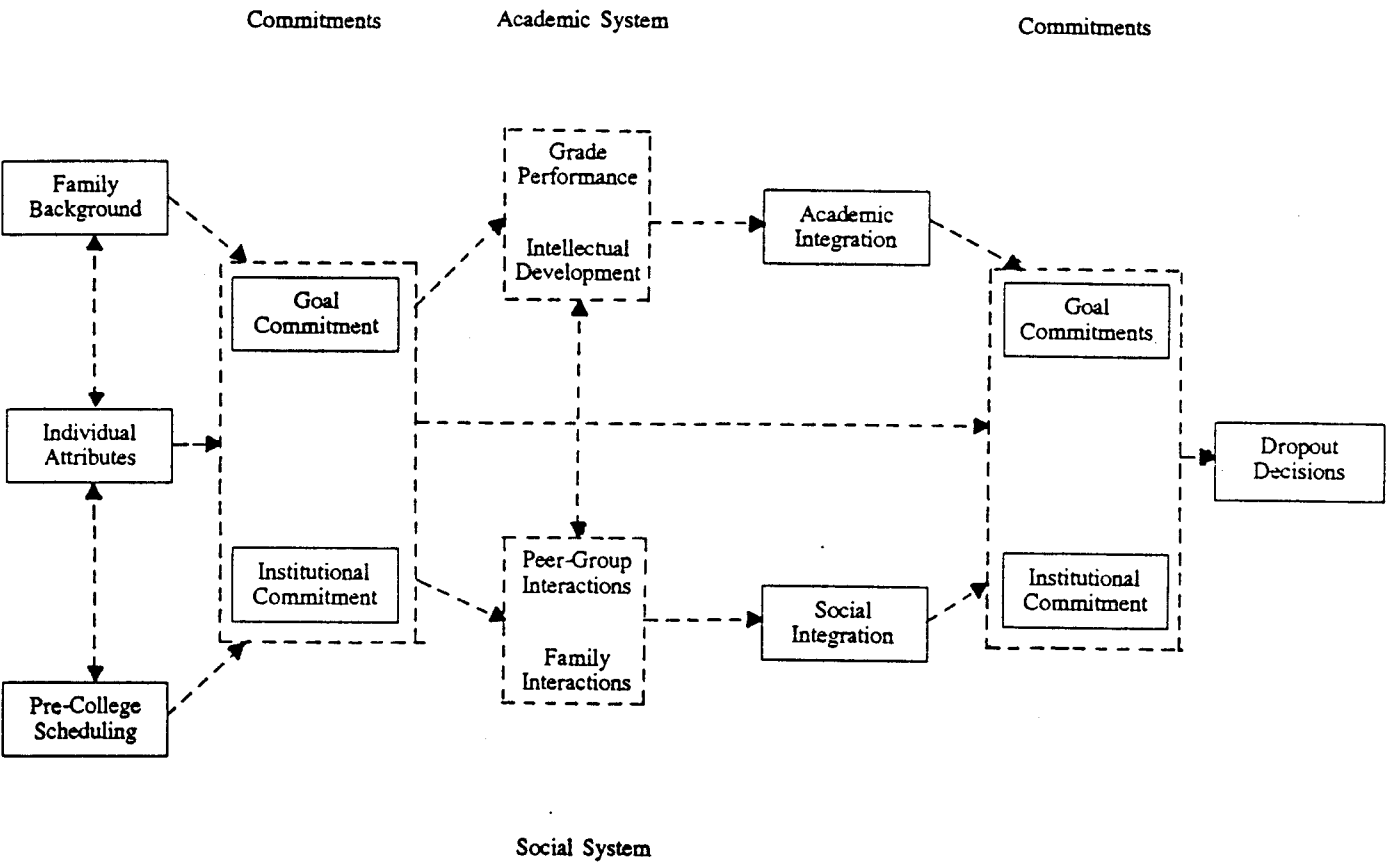
### Tinto

Developed in 1975 and further refined in 1987, Tinto's model of college student attrition (Figures 3 & 4) has been extensively researched (Allen & Nelson, 1989; Pascarella, 1980, 1982, 1985; Pascarella & Chapman, 1983; Pascarella & Terenzini, 1977, 1978, 1979a, 1979b, 1980, 1983; Stoecker, Pascarella & Wolfe, 1988; Terenzini & Pascarella, 1977, 1980, 1984). Stressing the need not only to describe but also explain the process of dropout, Tinto's work is heavily rooted in Van Gennep's (as cited in Tinto, 1987) social anthropological theory of establishing societal membership and Durkheim's (1951) theory of suicide.

Utilizing Van Gennep's concept that individuals pass through a series of stages as they become members of progressively older peer groups, Tinto postulates (1987, pp. 91-99) that college students experience a similar rite of passage entering college. Individuals first experience a physical and social separation from their prior post-college communities. This separation leads to a stage of transition from the old institution

Figure 3

Tinto's Conceptual Schema for Dropout from College



Note. Adapted from Tinto, 1975, p. 28.

Note. Adapted from Tinto, 1987, p. 114.

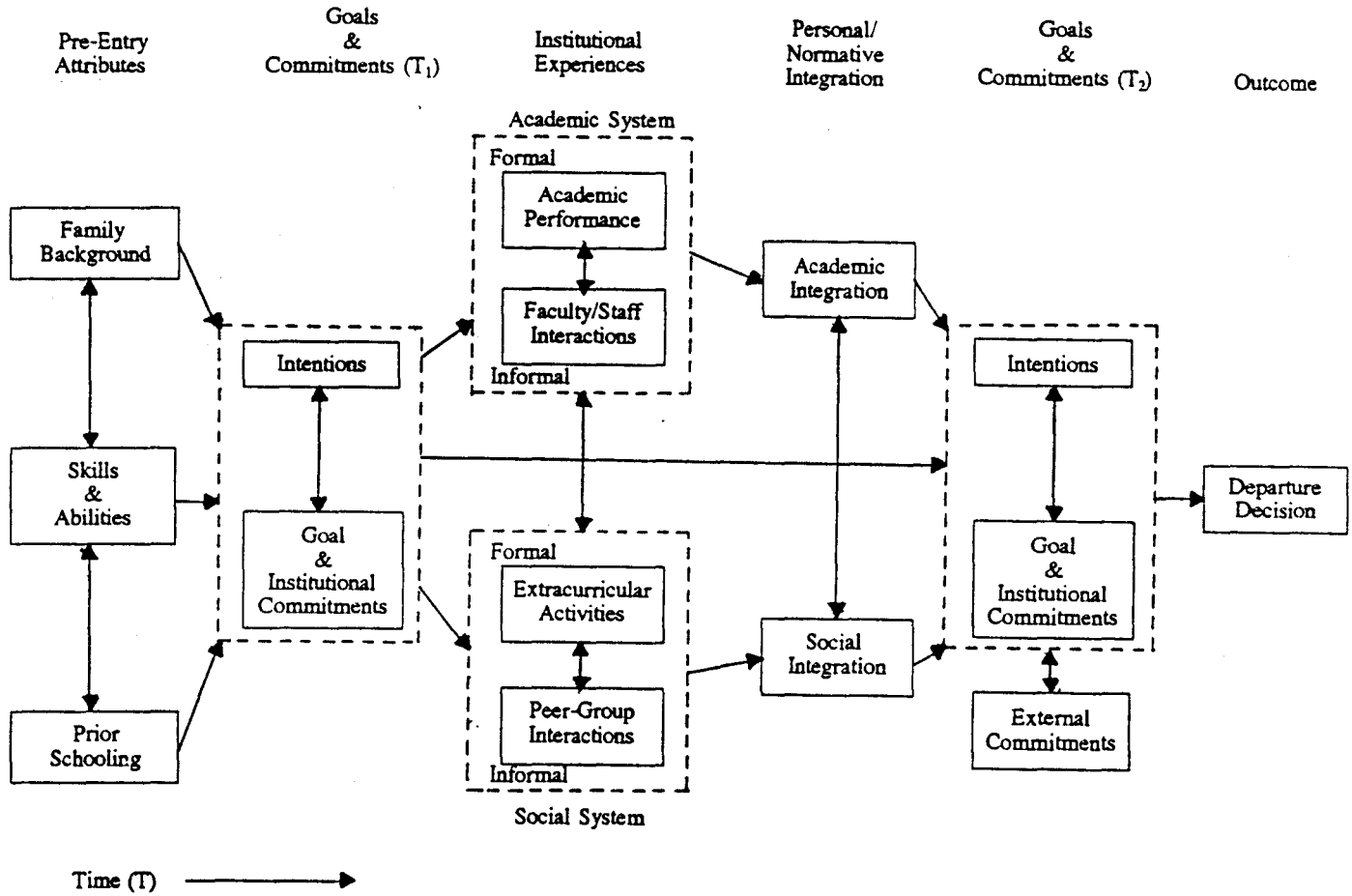


Figure 4  
Tinto's Model of Institutional Departure

(i.e., high school and its norms and patterns of behavior to that of the new college environments. Once these two stages are completed, the entering student must now become integrated into the new college systems. To further enhance this aspect of his developing model, Tinto borrows from Spady's use of Durkheim's (1951) theory of suicide.

At the close of the 19th century, Durkheim published a classic study of suicide based upon the principles of sociology. In his book, he describes how the social and intellectual systems of the environment could help to explain the differences in the rates of suicide between and within various countries. Durkheim distinguishes among four types of suicide: altruistic (resulting from a morally justifiable cause), anomic (due to disruption in social conditions), fatalistic (caused by excessive societal controls), and egotistical. He describes the latter as occurring when an individual is not able to become fully integrated into, and a member of a societal community. Egotistical suicide is the more common form accounting for the "continuing characteristic differences in suicide rates which mark most societies (Tinto, 1987, p. 101).

Durkheim refers to two forms of integration: social and intellectual. Social results from interpersonal rela-

tionships and daily contacts with others. Intellectual integration arises from shared values which are "held in common by other members of society" (Tinto, 1987, p. 101). In response to serious societal conditions as occurred in the 60's and 70's, or to very repressive conditions on campus, the causes arising out of altruistic, anomic and fatalistic forms of suicide are useful analogs for describing college attrition. However, noting the need to "understand the occurrence of continuing differences in patterns of departure, Tinto focuses his theory upon the structural conditions of colleges and factors influencing a student's integration into this system as related to Durkheim's explanation of egotistical suicide (Tinto, 1987, p. 104).

Tinto, however, is careful not to exaggerate the parallel between Durkheim's model of suicide and an explanation of college student attrition. He realizes that explaining student attrition - rather than simply describing it - necessitates the study of individual behavior. The context of the college community being much smaller than society in general, is only a temporary condition for an individual, and is affected by many external factors.

Thus, although integration is a primary element of his model, Tinto acknowledges the individual attributes and

dispositions of an entering college student (1987, pp.109-111). Accordingly, he states that individuals enter college with various personal and educational attributes as well as expectations and motivations. These attributes include one's family background, skills and abilities, and prior education.

Within the longitudinal context of his model, these pre-entry factors influence the educational goals and commitments of the entering student. In refining his model (1987), Tinto adds the factor of intention. An entering student's hopes and expectations (based upon past experiences) for attaining educational and occupational goals describe this construct.

In addition to these desired intentions, a student also enters college with a level or degree of commitment to complete an educational goal, and possibly at a particular institution. The goals from these intentions and motivations from these commitments interact with the next segment of Tinto's model: the institutional experiences affecting a student through the college's academic and social systems.

It is the student's integration into the academic and social systems of the college which plays a key role in the process of student attrition and retention (Tinto,

1975, p. 96; 1987, p. 113). Within these systems are both formal and informal structures supporting each. Although the definition and placement of these structures has evolved and been slightly altered over the past decade, they form distinct systems for affecting integration (Tinto, 1975, p. 28; 1987, p. 114).

The formal manifestation of the academic system is imbedded in the formal academic education and training of students developed and administered by the institutions. Its informal counterpart is demonstrated through the out-of-classroom contacts made between faculty and staff, and the students; and not necessarily part of the college program. Likewise, the formal social systems of the college invests students in the cocurricular activities and programs of the institution. As in the academic system, the informal aspect of the social system is developed through the informal contacts initiated among the students. It is these formal and informal experiences within these two institutional systems, which will combine to form levels of academic and social integration which Tinto maintains are critical to long-term success (Boyle, 1989, p. 290).

Tinto (1987, p. 112) describes his model as longitudinal and interactive (paying special attention to voluntary withdrawals rather than those caused by

institutional dismissal). Although he emphasizes the academic and social integration as "distinct processes", they are not "totally independent of one another" (1987, p. 118). This interdependency may be a reason why the much studied informal interaction with faculty (Pascarella and Terenzini, 1976, 1977, 1978, 1979b, 1980) changed position in the model.

In referring to Tinto's earlier work, Pascarella and Terenzini (1980, p. 62) state that: "While the model places interaction with faculty in the domain of social integration, Tinto clearly suggests that such interaction may also enhance academic integration." However, in his more recent writings (1987), Tinto utilizes faculty and staff interactions with students as an informal manifestation of the academic system (p. 114). An informal aspect of the social system now focuses upon peer group student interaction.

According to Tinto, a student may find it easier to integrate into one system than the other, even to the detriment of becoming fully integrated in the institution. Although such total integration is not necessary for academic persistence, Tinto believes that "some degree of social and intellectual integration must exist as a condition for continued persistence (1987, p. 119). Thus,



such integration will reduce one's likelihood of departure from that institution.

Whatever their ratio of influence, these integration factors combine to weaken or strengthen a student's entering intentions and commitments. As Tinto states (1987, p. 116): "Clearly, the model posits that, other things being equal, the lower the degree of one's social and intellectual integration into the academic and social communities of the college, the greater the likelihood of departure."

Although focusing primarily on the impact of the institution's social and intellectual systems upon a student's decision to withdrawal, Tinto's recent refinement of his theory (1987) includes the effect of outside commitments. Thus, he acknowledges that family and employment obligations, as well as opportunities to attend other institutions, can influence a student's goals and commitments also leading to withdrawing from that college.

Although "departure decision" completes Tinto's model (1987), it does not necessarily imply a negative focus on the issue of academic persistence. As Boyle (1989, p. 291) states, the elements present in formulating such a decision also imply factors "which contribute to the decision to remain for those who continue".

Among models of attrition, Tinto's (1975, 1987) is considered "the most useful", and withstands the careful examination of previously noted researchers in the field (Boyle, 1989, p. 290). Recognizing this fact, his model was selected as the model during the research in this study.

### An Analysis of Research Variables

As stated in the previous section, factors related to a student's pre-entry attributes, goals and commitments, and institutional integration compose the main systems of Tinto's model (1975, 1987). The predictor variables that Pascarella and Terenzini (1980) postulate to test this model form the basis for the following library investigation. Marital state, number of dependents, employment, and previous college attendance are added as pre-entry attributes relevant to adult students. Additional needs and services of adults, which if not met may form impediments to their persistence, are also included in the later section of this chapter.

#### Pre-Entry Attributes

Tinto's (1975, 1987) longitudinal study of student attrition begins with recognizing the impact pre-entry attributes have upon this process of decision. Noting the importance of both background characteristics and student

perceptions, Pascarella et al. (1981, p. 333) study 19 pre-entry characteristics of several thousand students.<sup>3</sup>

Studying students over a 12 month period, each is assigned to one of three classification groups: freshman-to-sophomore year persisters (continuous enrollment); freshmen stopouts (students who leave after their first term, but reenroll during the first quarter of the next academic year); and freshmen withdrawals (those who withdraw after their first year and don't reenroll through the first quarter of the next year).

Although differences are modest, the results indicate that certain preenrollment traits are useful in differentiating between the population of stopout, and the persisters and early withdrawals as a group. The stopout group exhibits relatively high secondary school achievement; is more likely to be black; expects, before enrolling, to withdraw temporarily; is less likely to join a social fraternity, sorority, or club during college; and, is less likely to indicate before enrolling, the desire to dropout permanently.

The persisters differ from the withdrawals in that they tend to be younger, have a higher level of high school achievement, perceive themselves before enrollment

as less likely to leave the college temporarily, and are more likely to expect to transfer to another college.

Whereas the authors suggest that postmatriculation characteristics are actually more important predictors of decisions to withdraw from college, this section will further review studies concerning each of the pre-entry attributes assessed in this dissertation.

### Individual Characteristics

#### Age.

Although Pascarella et al. (1981) finds age to be a significant discriminating characteristic, Tinto does not appear to consider the fact of age, by itself, as an important variable of research in the original study describing his model of attrition (1975). While his more recent study (1987) acknowledges the existence of adult students, he limits his discussion of nontraditional age students to references on only 12 pages of this book.

A review of past related literature appears to support the concept that "age is not a primary factor in causing attrition" (Pantages & Creedon, 1978). Perhaps this finding is artificially influenced by the relatively small number of adults enrolled in college classes at the time of these studies, which would also lead to both little interest and focus on studying such relationships. However, in a recent study conducted on over 600 students

-in which one third of the students were 25 years of age and older- no significant direct relationship between attrition and age was discovered (Metzner & Bean, 1987). While the isolated variable of age may not by itself be related to college attrition, the special needs and circumstances related to adults from various age categories might influence decisions related to dropout and academic persistence.

The impact of these circumstances and needs is exacerbated by the amount of possibilities that exist when considering the wide range in ages associated with the term "nontraditional". While the age range of traditional age college students varies less than 8 years, the nontraditional population may cover a span of 50 years. Considering the differences arising in the variables attached to these various age groupings, nontraditional students really do not form a single population of study (Hughes, 1983). For example, research in developmental psychology and education notes that the impact of biological and social factors (including work, marriage, parenting, etc.) is varied depending upon the traditional life-style stage of the adult (Erikson, 1976; Levinson, 1978; Neugarten, 1976; Riegel, 1975; Yount & Dekoch, 1973).

The relationship among age categories of adults and various developmental tasks related to each of these stages, is noted by Hodgson (1989). Citing the work of Chickering and Havigurst, Hodgson notes an array of challenges and crises facing individuals at particular time periods throughout life (Table 1). Various studies utilize these developmental associations as they investigate college student needs and persistence.

Kasworm (1982) compares various personality characteristics and levels of usage and perceived need of supportive services among three age groups of college students: 18-20, 20-29, and 30-39. In regard to personality characteristics: "There were significant differences in psychological, socio-emotional, and behavioral characteristics within the older student grouping than between the younger and closely age-related older student grouping" (p. 428). Also, the use of such supportive services as new student orientation, housing, physical health services, union activities, and study skills decline with age. The use of financial aid and personal counseling and job placement services, while increasing among the 20-29 year olds, also decreases with the older group.

However, in regard to this latter service and as previously noted in Table I, middle age adults may be in

Table 1

Developmental Tasks and the Age Spans When They are Most Frequently Salient

Age Span	Developmental Task
23 through 35 Early Adulthood	Deciding on a partner Starting a family Managing a home Starting in an occupation Assuming civic responsibilities
35 through 45 Midlife Transition	Adapting to a changing time perspective Revising career plans Redefining family relationships
45 through 57 Middle Adulthood	Maintaining a career or developing a new one Re-establishing family relationships Making native civic contributions Adjusting to biological change
57 through 65 Late-Adult Transition	Preparing for retirement
65 and above Late Adulthood	Adjusting to retirement Adjusting to declining health Establishing relations with late adult peers Creating satisfactory living arrangements Adjusting to death of spouse Maintaining integrity

Note. Adapted from Hodgson, 1989, p.22.

the process of a career change. The lack of use of career services may not be indicating a reduced need by older students, but instead an absence of awareness that such services exist on a college campus (Augusten, 1985). Further investigation of the need for this and other student services for adults will be addressed in a later section of this chapter.

Odutola (1983) compares the academic persistence of three age groups of financial aid recipients (16-22, 23-28, and 29 and older) with regard to academic persistence. Like Kasworm's study, the results indicate differences among age categories, with the 16-22 year old group obtaining a 43 percent persistence rate until graduation. Only 26.32 percent of the 23-28 year old group graduate, with 28.57 percent of the 29 and older group persisting until graduation. These findings, however, may reflect the longer time period needed by the nontraditional age student to graduate, and would be discovered only in a prolonged longitudinal study (Avakian et al., 1984; Terenzini, 1980; Tinto, 1987).

Thus, it appears that subdividing nontraditional students into several categories may give further, refined explanations regarding reasons for academic persistence/dropout among adults. This premise will be followed when developing the methodology of this study.



### Gender.

Since males comprised the vast majority of the student population up to several decades ago, not much interest was demonstrated in studying sex-related attrition patterns. However, since 54 percent of all undergraduate students are currently women ("The Nation", 1990), more interest is being demonstrated in investigating this variable.

According to Tinto, the sex of the student appears to be related to academic persistence. He states in his review of the literature (1975) that higher proportion of men complete college degree programs than women, and suggests that those women of highest social status backgrounds might feel less compelled to complete their college degree.

In further investigating differences between the sexes, it is noted that men are more likely than women to enroll on a part-time bases or stopout for a period of time, and thus, take longer to complete their degree. Women, however, are more likely to pursue a more traditional four-year span in obtaining their bachelor degrees. Thus, although more women complete their college programs within the conventional period of time, a larger population of men eventually receive their degrees (Astin,

1975; Pantages & Creedon, 1978). Since the vast majority of women with preschool children will be working by mid-century ("A Call," 1990), such differences between the sexes may -by necessity- be changing.

The influence of particular integration factors also differ between the sexes. Women are more likely to withdraw due to social forces and lack of social integration into the college. Women also appear less likely to be enrolled in occupation-related majors which assist in goal commitments. However, men more frequently leave their institution for lack of academic integration into the college. Also, whereas women more often voluntarily withdraw, men more often are forced to leave for scholastic reasons (Allen & Nelson, 1989; Tinto, 1987).

#### Race.

Although the sample for this study comes from institutions composed of a majority of Caucasian students, participation from minorities -especially African Americans- accounts for nearly 16 percent of this total. Reviewing attrition studies, African American students withdraw from college at a much higher rate than that of their Caucasian peers (Allen, 1985; Astin, 1975), and thus may be an influencing factor in a study of academic persistence. Gosman, Nettle, Dandridge, & Thoeny (1982)

investigate this relationship in a study of 24 colleges and universities from eight southern and border states (six are historically African American public institutions).

The Caucasian students in the study exhibit a significantly greater tendency to follow the prescribed freshman through senior progression pattern, as well as graduate in the traditional time of four years. Among those graduating in four years, 28.4 percent were African American and 42 percent were Caucasian. In five years, 33.7 percent were African American, while 60.2 percent were Caucasian.

According to the authors, the "college fit theory", exemplifying congruence among the students' grades, values, and attitudes with that of the college in attendance, should show that students are more likely to progress towards graduation in a college or university that enrolls predominantly like-race individuals. Although Gosman and her colleagues research supports this theory among Caucasian students, it does not for their African American peers at predominantly African American institutions. Instead, these students appear to persist and follow prescribed progression patterns as well as graduate more promptly at Caucasian institutions. This

study notes that African American students rate of completion at a mostly Caucasian institution is 50 percent, while at predominantly African American Colleges it is only 26.6 percent.

Although there are some studies indicating the opposite results (Cross & Astin, 1981; Fleming, 1985; Thomas, 1981); recent attrition research utilizing Tinto's model (1975, 1987) supports the finding that the racial composition of the institution has little direct effect upon academic persistence (Pascarella, 1985; Pascarella, Smart, & Stoecker, 1989). However, one study does indicate that attendance at a mostly African American college has a positive effect upon the academic integration of African American women. Such a relationship, in turn, influences academic persistence (Stoecker, Pascarella, & Wolfe, 1988). Various other associations between factors of integration and academic persistence are also being studied.

Citing Pascarella's work, Tinto notes that social integration among African American students may be more highly affected by formal aspects of this system, such as serving on a college committee, than that of Caucasian students, who are more influenced by informal peer contact (Tinto, 1987, p. 71). However, like their Caucasian peers, African American students academic achievement is

positively correlated with persistence (Stoecker et al., 1988; Steward & Jackson, 1989; Suen, 1983; Tinto, 1987, p. 70-71). Interaction with faculty and staff and involvement in student leadership -aspects of both academic and social integration- also have strong effect upon the retention of African American men (Stoecker et al. 1988).

Most of the participants in this study have had previous college experience. Thus the recent study by Kocher and Pascarella (1990), indicating that African American students who transfer experience a greater negative impact on completion of a college degree than their Caucasian counterparts, takes on special significance. Their work indicates that this higher rate of attrition is related to the greater difficulty an African American student has in interaction with faculty and staff and social involvement.

#### Family Background and Responsibilities

Tinto notes in his earlier model (1975) the influence families have upon the academic persistence of students. Although the studies he reviews indicates that persisters are more likely to be associated with educated, urbane, and affluent households (p. 100), he also clarifies the difference between those who are academically dismissed

from the who voluntarily withdraw from college. Although the former group of students are more likely to be associated with lower socioeconomic status environments, voluntary withdrawals actually tend to come from higher socioeconomic status households.

In a more recent explanation of his theory, Tinto (1987) further notes that these differences of attrition may be more highly associated with a student's ability rather than social status. In addition, he acknowledges that adult students may also experience certain family and work responsibilities which can negatively impact their involvement and eventual persistence in college.

Since this is a study of nontraditional age students, it does not focus on the impact that parental influences have upon academic persistence. Instead, aspects of the adult student's marital state, number of dependents, and employment are reviewed. Additional information concerning adult student needs will also be examined in the latter section of this chapter.

#### Marital state.

Although only 2 percent of the students interviewed were married in Astin's study (1975) when they began their college education, this factor does demonstrate an affect upon academic persistence. For men, marriage is associated with a decrease in dropout rate by 8 percent,

while for women it is related to a 11 percent increase in attrition. Of the percentage who left college due to marriage, 59 percent are women and only 26 percent are men.

As Tinto (1987, p. 67) implies, this deleterious effect of marriage upon a woman's persistence in college may be the result of continued family pressure to be a housewife and mother. However, other responsibilities related to marriage may also have an impact upon the retention of married male students.

Astin (1975) notes that when considering single college withdrawals, "traditional sex roles in employment status do not appear" (p. 20); i.e., slightly more female withdrawals (75.8 percent) are employed full-time and less likely to hold part-time jobs than are their male counterparts (72.4 percent). However, married withdrawals follow a more traditional pattern, with 91.3 percent of the men and only 49.2 percent of the women working full-time. Tinto reports a similar correlation -albeit less severe- among the variables of married status, level of employment and stopouts currently enrolled in the study. For those who are married and stopout, 78 percent of the men and 63 percent of the women were employed full-time. However, among their unmarried counterparts, 65 percent of

the women and only 55 percent of the men are employed full-time. Thus, although marriage has a positive influence on a male student's persistence, the increased need to work may partially offset this advantage. Nonetheless, with an estimated 80 percent of women with preschool children working by 1995 ("A Call", 1990), a large number of female students may also find the additional demands of work added to their responsibilities as housewife and mother.

#### Dependents.

Not many studies have been conducted which investigate the relationship between family responsibilities and academic persistence. In those few that Bean and Metzner (1985) review, they note that both an increase in parental age and number of children cared for are associated with factors of increased stress and attrition. Schlossberg, Lynch, and Chickering (1989, p. 142) add that these obligations of care also extend to elderly and disabled family members. However, in a recent research study, Metzner and Bean (1987) do not find a significant relationship between the responsibility of caring for children and relatives living with adult students and their academic persistence.



### Employment.

As was suggested in the previous section concerning marital status, attrition is correlated to the amount of employment engaged in during one's academic pursuits (Astin, 1975). Although part-time employment under 20 hours per week may actually enhance persistence, Astin further notes that working more hours results in a greater degree of attrition. With few exceptions, the many studies Bean and Metzner (1985) review support this correlation.

Although not found to be directly related to withdrawal in their own research, Metzner & Bean (1987), indicate that the amount of hours one is employed is highly negatively correlated ( $r = -.48$ ) to the number of hours enrolled in classes. Simply stated, they note that many students who enroll in fewer class hours are also employed a greater amount of hours per week. Since the number of hours enrolled is negatively associated with dropout, this relationship is found to be an important factor in this study of persistence.

### Prior Schooling and Achievement

Prior high school experiences contribute to the pre-entry characteristics of Tinto's model (1975, 1987). Involvement in high school activities, however, has shown little significant relationship to academic persistence

(Pascarella & Terenzini, 1980; Terenzini & Pascarella, 1984) and is not generally reviewed in studying adult students (Bean & Metzner, 1985; Metzner & Bean 1987). However, since academic achievement is more highly emphasized in Tinto's recent revision (1987), it is reviewed here in more detail. In addition, because many re-entry adult students enroll with prior college credit, the impact of this previous experience upon persistence will also be addressed.

#### High School achievement.

Astin (1975) notes "that students' choice either of stopping out or dropping out of college increase consistently as their high school grades decrease" (p. 31). He cites as an example of this, the 87 percent persistence rate of college students who had a high school grade point average of "A" or "A+", as compared to the 44 percent retention of those college students who only maintained a "C" average in high school. Other studies and reviews of literature also support the positive relationship between high school achievement and academic persistence (Bean & Metzner, 1985; Lenning, Beal, & Sauer, 1980; Morrisey, 1971; Pascarella & Chapman, 1983). Stoecker et al. (1988) observe in their study that this high school achievement may have a greater impact upon the

persistence of African American and Caucasian men rather than their female counterparts.

Although high school academic achievement may be measured by scores on ability tests, rank, and grade point average (GPA), Pantages and Creedon (1978) indicate that the latter two are better predictions of academic persistence. In this regard, Metzner and Bean (1987) note that the high school rank of nontraditional age college students is the second best predictor of their GPA; and when considering the total effects on withdrawal, ranks as number 5 out of the 26 variables studied.

#### Previous college attendance.

Although the study of previous college attendance in terms of its effect upon persistence seems to be as important an aspect of investigation as high school achievement, very little research is currently completed in this area of investigation. However, in their study of returning adult students over a 9 year period who have stopped out of college, Smart and Pascarella (1987) note that the previous number of colleges attended does have a significant positive influence on completing a college education. Thus, individuals who originally leave college are more likely to complete their degree if they continue to enroll at various other colleges. Their original intention to complete a degree is thus reflected in their

motivation to persist towards their goals, while attaining academic success through their grades during this process.

### Goals and Commitments

As was noted earlier in this study, the expectations and motivations of students are translated in Tinto's initial model as goal and institutional commitments, and in his more recent version (1987) as intentions and goal and institutional commitments. Although the addition of intentions is made to help differentiate desires and actual commitments to attain a goal, most of the research investigating Tinto's theory focuses upon only these more measurable commitments (Pascarella & Chapman, 1983; Pascarella, Duby, Miller, & Rasher, 1981; Pascarella & Terenzini, 1980; Stoecker, Pascarella, & Wolfe, 1988; Terenzini & Pascarella, 1984).

In regard to these two aspects of commitment, Dom (1986) notes that career goals are influencing an individual's life even greater today than in the past. In their review of the literature, Cope and Hannah (1975) stress the importance of the relationship between these goals and retention in college. Their conclusions indicate that an individual's commitment to a vocational or academic goal, "is the single most important determinant of persistence in college" (p. 19).

However, Tinto (1987, p. 111) suggests that neither enrollment in professional preparatory programs, nor general liberal arts studies is in itself directly related to decisions of departure. Indeed, as potentially important as goals are, they may form an inverse relationship to persistence at a particular institution should their attainment be in question. Thus, the more sensitive one is to pursuing an educational or vocational goal, the more likely he or she may do so at another institution should the importance of attending that particular college be minimal. On the contrary, an individual's commitment to graduate from a particular institution is related to persistence at and graduation from that institution (Terenzini, Lorang, & Pascarella, 1981).

Although much supporting evidence is available to demonstrate the relationship between certainty in selection of a major and retention (Bean & Metzner, 1985), the field selected does not appear to be a significant factor related to persistence (Pascarella & Terenzini, 1980; Pascarella et al., 1981; Terenzini & Pascarella, 1984). Utilizing a large sample of respondents, the only major that is found to directly and significantly affect academic persistence is Social Sciences (Stoecker et al. 1988). The author further notes that whereas majoring in Social Sciences enhances Caucasian women's persistence, it

is associated with a higher rate of withdrawal for the African American men participating in this study.

Tinto's longitudinal model (1975, 1987) allows for the measurement of goals and commitments prior to entrance in college and also after being influenced by the academic and social system of the institution (see Figures 3 & 4 earlier in this chapter). The pre-entry variables are measured by assessing the highest level of college education sought by the student; the importance of graduating from college, and this institution in particular; and the level of confidence and choice in attending this institution. Several studies indicate that these pre-entry commitments are not directly related to academic persistence (Pascarella & Terenzini, 1980; Terenzini & Pascarella, 1984), and suggest that "voluntary withdrawal is less a function of preenrollment tracts than of postenrollment experiences" (Pascarella et al., 1981).

Incorporated into their measurement of academic and social integration, Pascarella and Terenzini (1980) utilize three questions assessing goal commitments and another three assessing institutional commitments in devising a scale to study these postenrollment experiences (Table 2, Scale 5). Utilizing discriminant analysis, they find this scale measuring commitments making the greatest

Table 2

Pascarella and Terenzini's Scales for Measuring  
Persistence/Voluntary Withdrawal Decisions

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Scale 1: Peer-Group Interactions

Since coming to this university I have developed close personal relationships with other students.  
 The student friendships I have developed at this university have been personally satisfying.  
 My interpersonal relationships with other students have had a positive influence on my personal growth, attitudes, and values.  
 My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas.  
 It has been difficult for me to meet and make friends with other student.  
 Few of the students I know would be willing to listen to me and help me if I had a personal problem.  
 Most students at this university have values and attitudes different from my own.

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Scale 2: Interactions with Faculty

My nonclassroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes.  
 My nonclassroom interactions with faculty have had a positive influence on my intellectual growth and interest in ideas.  
 My nonclassroom interactions with faculty have had a positive influence on my career goals and aspirations.  
 Since coming to this university I have developed a close, personal relationship with at least one faculty member.  
 I am satisfied with the opportunities to meet and interact informally with faculty members.

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Scale 3: Faculty Concern for Student  
Development and Teaching

Few of the faculty members I have had contact with are generally interested in students

Few of the faculty members I have had contact with are generally outstanding or superior teachers.  
 Few of the faculty members I have had contact with are willing to spend time out-side of class to discuss issues of interest and importance to students.  
 Most of the faculty I have had contact with are interested in helping students grow in more than just academic areas.  
 Most faculty members I have had contact with are genuinely interested in teaching.

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#### Scale 4: Academic and Intellectual Development

I am satisfied with the extent of my intellectual development since enrolling in this university.  
 My academic experience has had a positive influence on my intellectual growth and interest in ideas.  
 I am satisfied with my academic experience at this university.  
 Few of my courses this year have been intellectually stimulating.  
 My interest in ideas and intellectual matters has increased since coming to this university.  
 I am more likely to attend a cultural event (for example, a concert, lecture, or art show) now than I was before coming to this university.  
 I have performed academically as well as I anticipated I would

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#### Scale 5: Institutional and Goal Commitments

It is important for me to graduate from college.  
 I am confident that I made the right decision in choosing to attend this university.  
 It is likely that I will register at this university next fall.  
 It is not important to me to graduate from this university.  
 I have no idea at all what I want to major in.  
 Getting good grades is not important to me.

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Note. From Pascarella and Terenzini, 1980, pp. 66-67.



significant contribution to group discrimination between persisters and voluntary withdrawals (Pascarella & Terenzini, 1980). Terenzini and Pascarella (1984) also find that when studying resident students; "men living in a residential environment characterized by a comparatively higher level of institutional and goal commitment among the residents are more likely to continue their education than are men living in residential units whose occupants have lower commitment levels" (Terenzini & Pascarella, 1984, p. 121).

Employing path analysis, studies have compared the various aspects of Tinto's model (1975) with attrition rates at four-year residential, four-year commuter, and two-year commuter institutions (Pascarella, 1982; Pascarella & Chapman, 1983). While the overall data was supportive of Tinto's model, factors related to institutional commitment in both four-year residential and commuter college had a stronger influence on persistence than did goal commitment.

Tinto (1987) also suggests that part-time enrollment may have a negative effect upon integrating into and persisting at an institution. A review of the literature indeed indicates a greater degree of attrition occurring among part-time students when compared to those who are enrolled full-time (Bean & Metzner, 1985; Lenning et al.

1980). A similar association between amount of hours enrolled and persistence is found when studying adult students (Metzner & Bean, 1987; Staman, 1980).

### Systems of Integration

Although the aforementioned pre-entry attributes and entering intentions and commitments are important elements in decisions of persistence, it is the student's integration into the academic and social systems of the institution, "that most directly relates to his continuance into that college" (Tinto, 1975, p. 96). According to Tinto, one's initial entering goal commitments (e.g., the importance of graduating from college, the highest degree expected to attain, etc.) may become modified by aspects of the academic system such as measured by college grades, intellectual development, and faculty interaction. Likewise, an entering student's commitment to the selection of his/her college or university may be reevaluated due to the level of peer group interactions which are aspects of the social system. Although it is not necessary for a student to be fully integrated into both of these systems, "some degree of social and intellectual integration must exist as a condition for continued persistence" (1987, p. 119).

While Tinto further acknowledges (1987, p. 110) that lack of academic integration into a college may lead to dismissal, decisions of voluntary withdrawal are affected by both of these systems. Since most of the activities of each system occur within the same collegiate environment, they are "mutually interdependent" (p. 118). For purposes of study, however, they will be considered separately.

### Academic System

In his revised model (1987), Tinto divided the measurements in the college's academic system into both a formal and informal aspect. The former primarily focuses on the student's academic performance in college (grade point average, or GPA). In addition, several studies supporting this model also utilize items measuring intellectual and academic development (Allen & Nelson, 1989; Pascarella & Terenzini, 1980; Terenzini & Pascarella, 1984).

Although it is proposed that faculty (and more recently, staff) contact outside of the classroom affects both systems, Tinto (1987) currently places it as an informal aspect of the academic system. Since he stresses its importance in his sociological model, this aspect will be considered separately.

### GPA and intellectual development.

A review of many studies show a positive relationship

between a student's college grade point average and their persistence at that institution (Bean & Metzner, 1985; Lenning, et al., 1980; Pantages & Creedon, 1978; Tinto, 1975). In one study, Pascarella et al. (1981) note that the pre-entry attributes of students only account for 3.6 percent of the variance existing among persisters, stop-outs, and withdrawals when stepwise discriminant analysis is employed. However, when their college GPA is added (persisters displaying the highest grade average and withdrawals the lowest among the three groups), this difference is increased to 15.8 percent. Likewise, the classification analysis for the pre-entry variables yields an overall percentage of 56.77 percent of the cases correctly classified among the three groups. However, when Pascarella et al. add both the variables of college GPA and credit hours earned as a measurement of academic integration, this percentage increases to 65.40 percent. Thus undergraduate GPA as a measurable link in the academic system appears to be highly correlated with academic persistence (Astin, 1975; Odutola, 1983; Rodney, 1983). In Astin's review (1975) the rate of dropout for students with a college GPA of below 1.75 ranges from 88 percent to 97 percent. In his study, Summerskill (1962) states that up to one third of dropouts from college are due to

academic failure and poor grades. The predictive correlation is said to be especially strong for those students at the lower end of the grading curve.

Considering this correlation, Rodney (1983) compares the first-quarter academic performance of 287 students who either voluntarily withdraw from college or successfully complete their baccalaureate degree. Her results indicate that 51 percent of entering freshmen withdraw before graduation with the GPA appearing as the single most significant predictor of attrition (accounting for approximately 24 percent of the variance).

Stoecker et al. (1988) investigate the correlates of persistence in an extensive multi-institutional 9 year follow-up study of African American and Caucasian male and female students. In terms of the fourteen variables studied, they note that the undergraduate grades of all four of these cohorts had the strongest direct effect on academic persistence.

Although Tinto (1987, p. 51) does not believe that voluntary withdrawals actually demonstrate a lower degree of achievement potential, Getzlaf, Sedlacek, Kearney, and Blackwell (1984), study this possibility by comparing high school and college grades of same persisters, transfer persisters, and dropouts. Stepwise multiple regression is

used to differentiate between an attrition sample and a control sample of persisters.

The results indicate that in comparison to the same persisters, the attrition sample demonstrates a lower measurable ability both at high school and college, has a lower institutional commitment (as measured by comparing the college the student was presently enrolled in with the one that the student preferred to attend) and has a greater drop in grades from high school to college. The latter measures the student's perceived academic and intellectual development. As the authors state, "if a student perceives too great a decrease in performance (evidence of lack of development) he/she is more likely to drop out" (p. 265).

The results also indicate that in comparison to the transfer persisters, the dropout has lower academic ability (as measured on the weighted average of scores on the Vocabulary, English Usage, Spelling and Reading Comprehensive subtests of the Washington Pre-College Test), and an overall lower college academic performance (as measured by the number of semesters deficient). Dropouts are also found to be less academically and socially integrated and less goal committed than their transfer persister counterparts. However, dropouts are

found to have a higher institutional commitment than those who transferred to another institution.

Again, as suggested by Tinto (1987), not all studies support a strong direct relationship between a student's academic achievement in college and persistence (Pascarella & Chapman, 1983; Pascarella & Terenzini, 1980). Limiting their study to Caucasian residential freshmen women at both a two-year and a four-year institutions, Allen and Nelson (1989) also do not find a positive relationship between academic integration and retention using path analysis.

Using a combination of freshman year cumulative GPA, the responses to several questions which are variations of Pascarella and Terenzini's (1980) scales to measure integration (see Table 1, Scales III and IV), and outside of the class faculty contact regarding intellectual and academic matters; Allen and Nelson discover no positive relationship among these measurements and academic persistence. More specifically, neither an indirect nor direct relationship was found when studying those students from the four-year institution. Those from the two-year college actually demonstrate a direct negative relationship between the measurements of academic integration and persistence. This supports the findings and suggestions of others who believe that students who demonstrate

excellent academic ability may not remain at a college that they perceive does not challenge this ability (Pascarella, Duby, & Iveson, 1983; Tinto, 1987).

The findings concerning the relationship between academic achievement and the persistence of adult students is also mixed. Some studies and reviews indicate little relationship between these factors (Bean & Metzner, 1985; Staman, 1980). However, college GPA is found to be the most significant variable associated with persistence in Metzner & Bean's (1987) study of adult students.

#### Interaction with faculty.

Tinto (1975, 1987) suggests strong linkage between informal faculty contact with students and retention. Although it was moved from the social system to an informal manifestation of the academic system in his later writings, its impact continues to be associated with both "heightened intellectual and social development" (Tinto, 1987, p. 66).

Because of the potential strength of this relationship, it is the focus of, or at least included in, several studies of attrition (Pascarella, 1982; Pascarella & Chapman, 1983; Pascarella & Terenzini, 1976, 1977, 1978, 1979b, 1980; Stoecker et al., 1988; Terenzini & Pascarella, 1977). Through these studies, student/faculty



contact (10 minutes or longer) outside of the classroom is investigated as it relates to academic achievement, academic and social integration, and decisions of withdrawal.

Utilizing stepwise discriminant analysis in an early study (1976), Pascarella and Terenzini do not discover any significant correlation between student and faculty informal contacts and levels of academic achievement. However, high and moderate interactors (students who had contact with faculty outside of the classroom) rate their academic programs and non-academic student life higher. High interactors also rank faculty higher as a source of positive influence on their personal and intellectual development and satisfaction. In addition, as Table 3 illustrates, as the contacts increase in number, there is a statistically positive increase in the tendency to persist at the institution.

Controlling for background characteristics, Pascarella and Terenzini (1977) further investigate the types of student and faculty interaction which possibly relate to retention. A series of multiple regression analyses are performed on each of the following six designated reasons for such informal contacts:

Table 3

Distribution of "Persisters" and "Leavers" Among Low, Moderate and High Interactor Groups

Group	Low Interactors	Moderate Interactors	High Interactors	Raw Totals
Persisters	102 (72.9%)	113 (86.3%)	96 (90.6%)	311
Leavers	38 (27.1%)	18 (13.7%)	10 ( 9.4%)	66
COLUMN TOTALS	140	131	106	377

Note. Chi-Square Value = 15.04 with 2 degrees of freedom (p<.001). From Pascarella and Terenzini, 1976, p. 39.

1. To get basic information and advice about my academic program.
2. To discuss matters related to my future career.
3. To help resolve a disturbing personal problem.
4. To discuss intellectual or course-related matters.
5. To discuss a campus issue or problem.
6. To socialize informally (p. 543).

After controlling for the variables of set, academic aptitude (SAT scores), and various personality attributes, they find that contacts focusing upon intellectual or course-related matters (and to a lesser extent the

question related to career concerns) significantly contribute to academic persistence. It is further noted (Pascarella & Terenzini, 1978) that the intellectual /course-related interactions have the strongest positive association with grade performance and self-perceived intellectual development, and to a lesser extent self-perceived personal development. Those related to career concerns have the strongest correlation with self-perceived personal growth.

The strength of influence of these six types of interactions appear to be sex-linked. Out of classroom, informal interactions with faculty concerning career decisions and information about courses and academic programs more positively relate to freshman persistence for male students. For female students, faculty interactions relating to campus issues and informal socializing appear to be more significantly related to retention (Pascarella & Terenzini, 1979b).

With a change in research design (adding measures of students' peer relationships and assessing the influence of the quality as well as quantity of student/faculty contacts), these intercorrelations show some change (Terenzini & Pascarella, 1980). Intellectual/course-related contacts are still the most significantly related

interactions positively associated with grade performance and self-perceived intellectual development. However, this type of interaction is not (as it is on the aforementioned 1978 study) significantly correlated with the students' self-perceived personal development. Also, the interactions that relate to career concerns significantly relate to either the students' self-perceived intellectual or personal development.

The quality of contact as measured by the Faculty Relations Scale is positively correlated to students' self-perceived personal development, whereas the Faculty Concern for Student Development and Teaching Scale is positively associated with self-perceived intellectual development. Although neither of these measures of quality of contact are significantly related to academic performance, they are found to be significant factors differentiating between persisters and dropouts in a further study that Pascarella and Terenzini (1980) conduct on academic persistence.

Whereas informal interaction with faculty continues to demonstrate a significant relationship in their persistence of many students (Stoecker et al., 1988), it may not demonstrate the same strength or need among some of the more autonomous adult students Hodgson (1989). Although they warn that their finding be "treated with

caution" because of weak related correlations Metzner and Bean (1987) note that adult students' informal contacts with faculty are actually correlated positively with the variable of "intent to leave" (p. 25). This does suggest, however, further study in understanding the relationship of informal contacts between faculty and nontraditional age students and its impact on academic persistence.

### Social System

Research regarding the effects of involvement in the social system of academic institutions of higher learning (leading to institutional commitment) has provided mixed results. Whereas Summerskill's (1962, p. 45) early review of the literature casts some doubt upon the harmful effects of involvement in extracurricular activities, it also reveals a "dearth of research" relating specific aspects of college involvement with attrition. Although Sexton's (1975) review suggests that dropouts appear to occur from either being greatly involved or not involved at all in student activities, Pantages and Creedon's (1978) survey dismisses such factors as not a primary function in attrition.

Astin (1975) reviews the relationship between involvement of full-time students during their first two years of college in varsity sports and fraternities and sororities

and academic persistence. The results of this investigation indicates some minimal linkage between such involvement and retention, although these were further affected by racial/gender variables:

Participation in varsity athletics reduces chances of dropping out by 1 percent for white men and 5 percent for white women and blacks in white colleges. Membership in fraternities or sororities is associated with even further reduction from 6 to 9 percent for all four groups. The only exception to these trends occur among black students who participate in varsity athletics at black colleges. For them, participation is associated with a small increase in dropout probabilities (about 2 percent) (p. 107).

Residing on campus may allow students to have more opportunity for integrating into the social system of that institution, and thus enhance their opportunity to persist (Aitken, 1982; Astin, 1975; Galicki & McEwen, 1989). This factor appears across many institutions and populations. As Astin (1975) states: "These positive effects exist for men and women, for blacks and whites, and in nearly every type of institution" (p. 158).

As Tinto (1987) suggests, a student need not be equally invested in both the social and academic system to persist at that institution. Indeed, academic integration

may play a more influential role in the personal and academic development of students in their first two years in college, while social integration has an increasingly more significant role in the junior and senior years within a traditional four-year period (Terenzini & Wright, 1987a, 1987b, 1987c). When considering the impact of residential colleges, social integration has a stronger impact upon academic persistence there than at commuter institutions (Pascarella, 1982; Pascarella & Chapman, 1983). Among female residents, factors measuring social integration have a stronger positive direct effect upon retention than do variables measuring academic integration (Allen & Nelson, 1989; Pascarella & Terenzini, 1983). Other differences emerge in further studies investigating factors influencing social integration.

In an extensive, multi-institutional study of academic persistence, social leadership in student life (as-well-as informal contact with faculty) positively relate to retention (Stoecker et al., 1988). Although this association is significant for both male and female Caucasian students, the authors find an especially strong relationship among African American men.

As was previously noted when reviewing studies of academic integration, not all research findings result in

positive relationships occurring between investment in the social system and academic persistence (Pascarella, Duby, and Iverson, 1983; Staman, 1980). Results from studies investigating the relationship of these two factors for nontraditional age students are also mixed.

Some articles and surveys indicate a need for adult integration into the college social system (Creange, 1980; Dwinell, 1980; Gustafson & Sorsman, 1983; Pennington & Harris, 1980; Schlossberg, Lynch, & Chickering, 1989; Uncapher, Attenburger, Regner, Quinlan, & Carnahan, 1983). Others have suggested that social integration is not a significant factor related to adult persistence (Bean & Metzner, 1985; Metzner & Bean, 1987).

Having a profile of 25 years of age or older, nonresident, part-time commuter students, and perhaps desiring only a short-term commitment to enrolling in select courses, adults may not display the same need for social investment in the college as traditional age students. It may be that the adult student's social milieu external to the institution substitutes for the campus social system (Bean & Metzner, 1985). Supporting this concept, it appears that neither the amount of campus organizations students belong to, nor the number of their best friends attending their institution, indirectly or directly effect their withdrawal decisions (Metzner & Bean, 1987).



Similar to the previously cited faculty interactions with traditional age students (Pascarella & Terenzini, 1978, 1983), the older female student may also express this social need more than her male counterpart. In a survey of full-time nontraditional age students (age 30-54), Galliano and Gildea (1982) find that whereas the majority of women listed "meeting new friends" as being improved with their attendance at college, only 19 percent of the men surveyed indicate some improvement in this area of social integration.

#### Impediments to Adult Persistence

As noted in earlier sections of this study, the research using Tinto's model (1975, 1987) primarily focuses upon the use of traditional age college students. Within this context, there is a lack of an in-depth consideration of many of the unique circumstances surrounding the retention and attrition of older individuals enrolled in undergraduate classes. Related to this is Tinto's focus upon entering variables and those occurring within the institution. However, although his is not a systems model, he does acknowledge the existence of "external commitments" in his later writings (1987, p. 114). He also indicates that with older students, the outside support of family, friends and work colleagues may

be enabling factors for persistence (p. 124). Again, however, Tinto does not emphasize these variables in the discussion of his model.

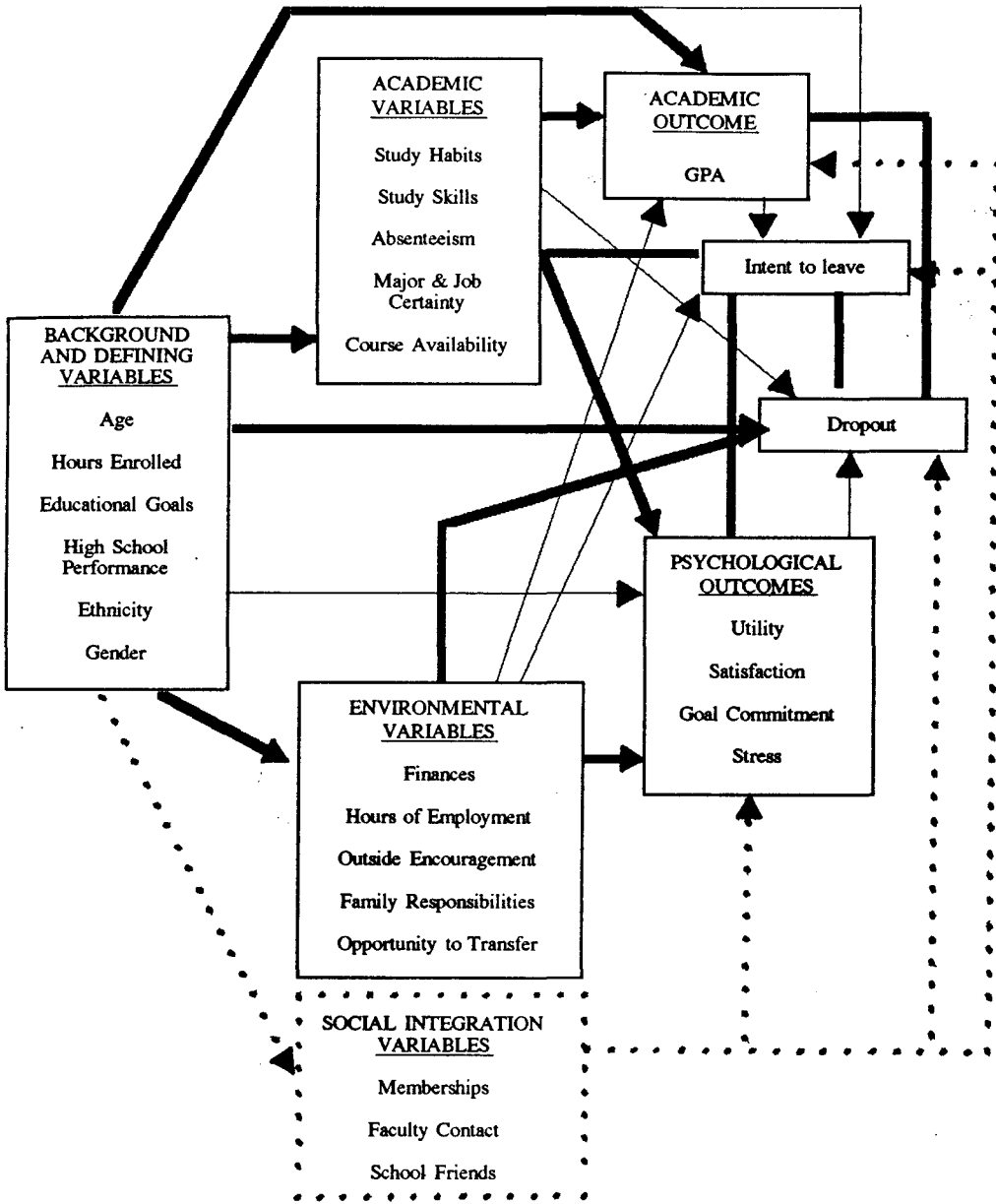
One of the difficulties in studying adult students in general is their diverse background. A wide difference in age, family and work responsibilities, make the "typical" adult student almost nonexistent (Marlow, 1989; Spratt, 1984). In addition, a lack of a wide range of multi-institutional studies has resulted in not producing "clear-cut patterns" of adult behavior in college (Marlow, 1989, p. 273). Indeed, it was not until 1976 that the U.S. Bureau of the Census collected college status information on those over the age of 34 (The Pew Higher Education Research Program, 1990). What does seem apparent, however, is that due to family and employment obligations adults form a composite different from many of the traditional age students found in attrition studies. Thus, most adults appear to be commuter students pursuing their education on a part-time basis (Bean & Metzner, 1985; Byrne, 1989; Kayla et al., 1982). As with other primarily commuter students, they also may be pursuing the completion of one or a few particular courses rather than a degree program (Avakian et al., 1984; Bean & Metzner, 1985; Japely, Kennedy & Walleri, 1987; Walleri, 1989).

Considering this dearth of research on adult attrition, there have been a few recent studies which broadly explain variables related to adult college retention. Utilizing multiple regression in a path analytic framework, Metzner and Bean (1987) study the retention of 642 part-time freshman commuter students at a primarily commuter institution over a one-year period. In this study they utilize a slightly revised model of nontraditional age student attrition (Figure 5) based on their earlier work (Bean & Metzner, 1985). Information concerning related variables is obtained through the registrar's office and a questionnaire is distributed late in their first term of study. One third of the participants in this study are 25 years of age and older, while their average age is 23.8 years.

Of the numerous variables accounting for the 29 percent variance between the 382 persisters and 242 withdrawals, several of the highest ranked factors are significant. Persisters are found to have a high grade point average, enroll in more hours, and have a greater degree of stated intent to return to the institution. Numerous indirect relationships to persistence are also noted including an older student population, a lack of

Figure 5

A Conceptual Model of Nontraditional Student Retention



Key:  
 — Direct effects  
 — Direct effects presumed to be most important  
 . . . Possible effects

Note. Adapted from Metzner and Bean, 1987, p. 17.

classroom absenteeism and a lower amount of outside employment.

For purposes of comparison with Tinto's (1975) model, questions measuring social integration are asked of the participants concerning their membership in campus organizations, and amount of contact with faculty and students. None of these factors prove significant except for informal, out-of-classroom contact with faculty. However, it is noted that this variable actually demonstrates a significant positive relationship with "intent to leave" college. However, as previously stated, the importance of this finding is treated with caution since, "the simple correlation between dropout and faculty contact ( $r = -.01$ ) and between intent to leave and faculty contact ( $r = -.03$ ) was small" (p. 25).

In another study of adult students, Walleri and Peglow-Moch (1988) investigate the success of students enrolled in a developmental education program due to academic deficiencies in one or more of the following: reading, writing and math. A follow-up survey (partially adapted from Pascarella and Terenzini's 1980 study) as well as personal interviews are administered to 20 students. Seven of these students (five of whom are 22 years of age and older) are identified as personally and

academically successful based upon a self report as well as maintaining an institutional grade point average of 2.0 and above.

Collectively these successful students are found to have clear career goals not necessitating a change in their academic major. Differing from the results of Metzner and Bean's study (1987), all the students report to have made close personal contact with faculty outside of the classroom. Furthermore, this group of students believe that their instructors are interested in teaching and working with their students. They also are satisfied with the access to and services of the college's counseling center, and more than half of these individuals report to have satisfying relationships with other students.

Five students (four of whom are 22 years of age and older) are found to be unsuccessful both in terms of their low grade point average of below 2.0, as well as their own personal assessment of academic and personal success. These students report to lack positive relationships with other students, counselors, and especially the institution. It is also noted that "career indecision" was a key factor for these students to experience failure (p. 11).

Weidman (1985) reviews a study of academic persistence among nontraditional age students (defined in this re-

search as 24 years of age and older) conducted at Youngstown State University by Haggerty. Utilizing conventional scores and demographic information from over a nine year period, this study compares 141 adult persisters (those who graduate or are still enrolled) with 583 non-persisters. Of this latter group, only 19 are academically dismissed. Using stepwise discriminant analysis, 81 percent of the population are correctly classified through four variables: age, financial aid, grade point average, and matriculation status. Persisters are found more likely to be younger adults, enrolled full-time, receiving financial aid, and having achieved a higher grade point average than their non-persister peers. However, it is noted in this study that it is easier to correctly identify non-persisters (88 percent) than persisters (57 percent).

Weidman concludes the review of this and another special vocational program for adults by stressing the fact that there are many "personal contingencies" (p. 14) which can interfere with an adult student's successful completion of their academic program. To help reduce the impact of these factors, he states that institutions enrolling adult students should provide them with personal

and career counseling, flexibility in meeting institutional demands, financial aid, and day care assistance.

These services and special arrangements for adults, along with additional areas of outreach and assistance reflect the needs of adult students in college. When these needs are not met by the institution, it is hypothesized in this study that they become impediments for an adult student's academic persistence at that institution. These impediments are further defined in four areas of study: the general acceptance of non-traditional age students; the availability of classes and special services; personal development and affiliation needs and services; and returning adult students' special needs and services. The following review of literature forms the basis for these areas of study and the development of scales which are assessed in this dissertation. However, since there is not a great amount of research which has been conducted in adult retention studies, much of this is based on the observations of professionals in the field rather than large scale causal studies.

#### Acceptance of Adults

In general the "caring attitude of faculty and staff" is acknowledged by many colleges as the most important factor associated with academic persistence (Beal & Noel, 1980). Citing earlier studies of adult students by



Bruffee, Houle, and Rosenmeier, Byrne (1981) discusses the need for college faculty and administrators to develop an empathy for nontraditional age individuals entering college. Since these individuals face the development of new skills necessary to be successful, she suggests the importance of this empathic outreach by college personnel in the "adult socialization" process. Other studies also support the importance of "feeling understood" as a function of college success (Champagne & Petitpas 1989; Spratt, 1984).

Research on both adolescents and retired adults notes that those individuals who express more behavioral difficulties are those who don't feel that they "matter" to others. Feeling that a faculty member and the institution cares and appreciates their existence within the college, also assists students to be successful in their educational pursuits (Schlossberg, Lynch et al., 1989, pp. 21-23). Thus, acceptance of adults by both the faculty and institution appears to be related to academic persistence at the college.

#### Availability of Classes and Entering Services

Spratt (1984) suggests that the adult student's "multiple roles as spouse, parent, and employee" encourage these individuals to seek more flexible scheduling of

classes (p. 5). In studies targeting nontraditional age populations, both the need for such scheduling of classes (Dwinell, 1980; Gustafson & Sorsman, 1983), and services (Hughes, 1983; Trussler, 1983) are related to student satisfaction.

However, not all such studies indicate a need for flexible scheduling. Freidman (1980) found that traditional, as well as nontraditional (23 years of age and older) students (along with faculty), continue to prefer a more traditional mode of class meetings: i.e., two to three times per week during the morning and early afternoon hours.

In regard to having financial aid services available, a significant positive relationship between receiving such aid and academic persistence has been documented by Murdock, 1987; and Nora and Horvath, 1989. As previously stated, Weidman (1985) also notes the importance of this relationship in nontraditional age students. However, Holliday (1985) notes that female adult students in need of such assistance, do not always find information readily available to them.

Schlossberg, et al. (1989) suggest that this difficulty is partly inherent in the governmental forms and format of acquiring information more suitable for younger students (i.e., information regarding their

parent's financial status). However, these authors also state that some of these roadblocks to receiving adequate financial aid information may be due to the part-time status of most adult students, and the focus of the work load of financial aid counselors. "Going through the whole financial aid process for two or three part-time adult learners instead of one full-time traditional-age student requires more work" (p. 75). Nonetheless, having financial aid assistance available to adult students appears to reduce this impediment to their educational pursuits (Gustafson & Sorsman, 1983; Hengstler, Haas, Lovacchini, 1984; Solomon & Gordon, 1980).

#### Development/Affiliation Needs and Services

As noted earlier in this chapter, actively caring and attending to students needs is related to both their satisfaction and success in college (Beal & Noel, 1980; Schlossberg et al., 1989; Tinto, 1987). Furthermore, when reviewing studies related to the college's social system, the relative importance of social integration for traditional age students was supported (Allen & Nelson, 1989; Pascarella & Terenzini, 1983; Stoecker et al. 1988), but was questioned in relationship to its retention value among adult students (Bean & Metzner, 1985; Metzner & Bean, 1987).

The studies questioning the importance of this social system for adults, however, do not focus on adult peer contact nor adult activities within the institution. In regard to the latter, it is important to assess if the college is offering activities which are both "appropriate for, and accessible to" adult students (Schlossberg et al., 1989). This absence of focus, as-well-as Tinto's (1975, 1987) emphasis on the importance of such social integration in relationship to academic persistence, warrants further assessment of adult peer contact and activities.

As important as such adult peer contact and development may be, assistance in the form of professional counseling and advising is also a vital linkage for academic persistence. In regard to counseling, a review of several studies indicate a strong relationship between using this college service and remaining at the institution (Bishop & Brenneman, 1986; Callis & DePauw, 1985). When reviewing the students' explanations for this outcome, providing a listening ear, support, and assistance with the fear of failure all are cited as important elements in this retention process (Bishop & Walker, 1990).

Overall, the need for counseling services for the nontraditional age college student is well documented and

appears at least as great as for that of the traditional age student (Ancheta, 1980; Champagne & Petitpas, 1989; Kidd, 1980; Thiele, 1981; Warchal & Southern, 1986). Proposing a systems approach, Schlossberg et al. (1989) states that counselors in college can assist "adult learners identify and build on their strengths and see themselves as part of a support group or system" (p. 134). Counseling departments may also utilize adult peer counselors to help augment and act as referrals to these services (Chickering & Clement, 1987).

The increasing use of career and placement services in college (Evangelaut, 1984) demonstrates students' interest in this component of counseling. Even in their informal discussions with faculty, students demonstrate an interest in seeking career advice (Pascarella & Terenzini, 1977, 1978, 1979b; Terenzini & Pascarella, 1980). Although they may not be aware of services available to them (Augustin, 1985), adult students also reflect a high level of interest in seeking career information (Galliano & Gildea, 1982; Lance, Lourie, & Mayo, 1979; Schlossberg et al., 1989; Solomon & Gordon, 1980).

Whether they are preparing to enter an occupational field, maintaining and developing within their area of employment, or exploring and beginning a new one; adults

face life/career planning issues throughout much of their adulthood (Hodgson, 1989). Supporting this concept, Ito (1985, p. 204) notes in a survey of a large population of 25 to 64 year old adults, that the two most highly rated reasons for taking courses by nontraditional age students are the "need for academic credentials for career advancement" and "for career change".

Tinto (1987) supports the importance of both counseling and academic advising programs in relationship to retention of college students. In regard to the latter, Crockett (1978) notes that students' expectations of academic advising focuses on four major needs: "accessibility, specific and accurate information, advise and counsel, and caring and personal relationship with their advisor" (p. 138). Since some adults have been away from educational services for a period of time, they may demonstrate even a greater need for such advising

Although there appears to be some statistical inconsistencies and no significant differences among various age groups, the results of several studies of non-traditional age students indicate that: "improved advising services would have assisted them [the student] in remaining in college" (Bean & Metzner, 1985). Approaching significance ( $p = .06$ ), Metzner and Bean (1987) find a positive relationship between those adults

who persist in college and their perception of both the quality of advising and the individual concern shown by the advisor.

### Adult Special Needs and Services

Adult college students seek assistance in developing their skills in mathematics, reading, and other basic skills (Spratt, 1984). Whether this need is based on previous deficits in their education, the length of time since they were last enrolled in an educational program, or simply perceived myths concerning "rusty brains" or "old dogs" (Schlossberg, et al., 1989, p. 126). They appear to lack confidence in demonstrating both basic academic and study skills (Crawford, 1980; Prahl, 1980; Solomon & Gordon, 1980). This concern is also mirrored by educators who find that many of these entering students have not had a strong academic foundation.

Studies demonstrate that many nontraditional age students read at levels from the fourth to the ninth grades, making them unable to handle college-level textbooks. Such individuals may further exhibit serious deficiencies in writing and math abilities, problem solving and critical thinking skills (McIntyre, 1981, p. 2).

The deficiencies lead to academic failure, dismissal, and withdrawal from the institution. In a three year

longitudinal study of 217 adult returning entering juniors, 71 of these individuals demonstrate a deficiency in at least one of two areas of competency: English usage, and algebra. While the attrition rates were only 29 percent for those adults demonstrating basic competency in both English usage and Algebra, it was up to 95 percent among those who demonstrate a deficiency in at least one of these areas (Suddick & Collins, 1984).

Developing the adult student's self-concept (and thereby decreasing the feeling of powerlessness and alienation that may occur) can occur by proper placement in appropriate skill building classes (Bauer, 1981). The resulting remediation does lead to academic success. Supporting this, Suddick and Collins (1984) note that those adults who demonstrate a minimum competency level in both English and Algebra have a 54 percent lower attrition rate than those who do not exhibit this skill.

As previously noted, the effect of the external milieu, such as family commitments, has a greater impact upon the nontraditional age student (Bean & Metzner, 1985; Tinto, 1987), than their traditional age counterparts. With the increase in the number of nontraditional age women attending college (Magarrell, 1981) the need for child care services becomes an important factor in this process (Hooper & March, 1980; Hughes, 1983; Keyes, 1990;



Weidman, 1985). Indeed, some women can not return to college unless, "they find good, inexpensive, and convenient child-care services" (Schlossberg, 1989, p. 141). The fact that over 50 percent of the colleges in Illinois now report that they have at least one program for young children on campus attests to the importance of such services (Corder, 1988).

Although parenting does not always equate to a need for on-campus child care services (Dwinell, 1980), it appears more significant with those female parents who either have very young children and/or enroll in heavier credit-hour schedules (Smallwood, 1980). However, this situation is also complicated by the fact that; "Many nontraditional women, due to attendant child care responsibilities, are unable to maintain a full-time schedule and consequently are unable to obtain financial assistance" (Galliano & Gildea, 1982, p. 4). Such women face the financial obligations of a student and the responsibilities of parenthood, but are unable to receive much college financial aid to assist them. Low-cost daycare at the college may, thus, be associated with their continued retention.

### Summary

Interest in exploring the causes of college student attrition continues to be on the rise. Unsatisfied with mere descriptive findings, researchers are using models to give direction to these explorations. Because of the extensive research it has generated, Tinto's model (1975, 1987) was selected to form the basis of investigation for this dissertation.

With the many studies conducted by researchers such as Pascarella, Terenzini and others (Pascarella, 1982; Pascarella & Terenzini, 1976, 1977, 1978, 1979b, 1980, 1983; Pascarella, Duby, Iverson, 1983; Pascarella & Chapman, 1983; Terenzini & Pascarella, 1977, 1980, 1984,; Stoecker, et al. 1988), much data was available to support the basic tenets of Tinto's model. The results indicated in varying degrees of significance that an entering student's pre-entry attributes, as well as initial intentions and institutional and goal commitments, affected his or her ability to become integrated into the college or university, and persist at that institution.

Furthermore, the student's ability to become academically integrated (validated by increasing academic achievement and self-perception of intellectual development) and socially integrated (studied through peer relationships and involvement in student life) in turn

influenced their future goal and institutional commitments and an eventual decision to dropout or persist. As an informal measurement of academic integration, out-of-classroom contacts with faculty were also found to be a major component of integration and persistence.

Supporting Tinto's (1987) addition of "external commitments", marital state, number of dependents, employment, and previous college attendance were also investigated as pre-entry attributes relevant to adult students. In addition, utilizing studies focused on nontraditional age student needs and models of retention (Bean & Metzner, 1985; Metzner & Bean, 1987), four areas endogenous to the institution which may form possible impediments to adult education were explored. These areas of investigation focused on: acceptance of adults, availability of classes and entering services, development/affiliation needs and services, and, returning adult special needs and services.

The impact of these pre-entry attributes, intentions and commitments, academic and social integration, and impediments to adult persistence will be explored in the remainder of this dissertation.

## CHAPTER III

### RESEARCH METHODOLOGY

#### Introduction

The purpose of this research is to examine the relationship among the variables affecting the academic persistence of nontraditional age students. This is accomplished by using Tinto's model of student attrition (1975, 1987), and augmenting it with constructs based on the unique needs of nontraditional age students. This chapter describes the research hypotheses, design and procedures employed in this study, with attention given to the instrumentation adapted for use with an adult population.

#### Research Hypotheses

For this investigation, the following hypotheses are proposed:

1. There are no significant relationships among the independent variables measuring pre-entry attributes and the dependent variable categories of same persister, same stopout and withdrawal.
2. There are no significant relationships among the independent variables measuring goals and commitments and

the dependent variable categories of same persister, same stopout, and withdrawal.

3. There are no significant relationships among the independent variables measuring academic integration and dependent variable categories of same persister, same stopout, and withdrawal.

4. There are no significant relationships among the independent variables measuring social integration and the dependent variable categories of same persister, same stopout, and withdrawal.

5. There are no significant relationships among the independent variables measuring impediments to adult persistence and the dependent variable categories of same persister, same stopout, and withdrawal.

## Design

### Selection of Population

In order to help avoid the sampling limitations when only one institution is used (see Eckland, 1965), as well as to develop an adequate sample size, four Chicago area institutions of higher learning were selected as population sites for this study. To provide control for the variations in tuition costs and institutional size, all four were private institutions with undergraduate enrollment below 10,000.

Each institution was rated as "competitive" by Barron's Profiles in America's Colleges (1986). However, two of these ("A" and "B" in Table 4), which were larger institutions designated as universities, were given the slightly higher competitive status of "+".<sup>4</sup> The total head count for the fall of 1985 (including part and full-time students) was listed for the two smaller colleges as 628 and 2,202; while the two universities' undergraduate student population was 4,394 and 8,621. Institution "A" granted doctoral degrees, "B" and "C" granted master degrees, and institution "D" conferred only bachelor's degrees.

Since institutional differences are not part of the hypotheses studies in this research, they were not seriously investigated. However, categorical differences in relationship to enrollment status were rated for future research.

Utilizing students with no prior college experience helps control for biasing attitudes and expectations based on their earlier institutional exposure. Although this may not be difficult when studying traditional age students graduating from high school, many adults are stop-outs with previous college experience (Smart & Pascarella, 1987). Reviewing the 1983 entrance files of the largest

Table 4

Comparative Review of Status and Research Mailing Results for  
Institutional Sites

	STATUS	UNDERGRADUATE (Fall, 1985) HEAD COUNT	RESEARCH MAILING 1 (General Information, Consent & Background Info. Quest.)	RETURNS FROM MAILING 1	RESEARCH MAILING 2 (TAP Research Questionnaire)	RETURNS FROM MAILING 2	RESEARCH MAILING 3 (Enrollment Status Questionnaire)	RETURNS FROM MAILING 3
Institution A	U	8621	518	79	76	52	50	50
Institution B	U	4394	594	122	99	87	72	71
Institution C	C	2202	207	42	37	31	31	31
Institution C	C	628	83	19	19	14	14	12
College not Identified				15	9	4	3	1
<b>Total Number</b>			1402	277	240	188	170	165

Note. "U" = University status, and "C" = college status.

institution used in this study, confirms that the vast majority of adult students enrolled as transfers. Thus, this study includes adult students with varying degrees of exposure to college, and is a variable assessed in relationship to academic persistence.

The population parameters include full and part-time adults age 25 and older who are enrolled in day and/or evening traditional college-level classes. Students who are enrolled in special adult field experience or adult-only specialized college programs are excluded from this study.

Since this research employs three separate questionnaires and mailings, the procedures section is presented next. This provides a context for the further discussion of these questionnaires in relation to this study.

#### Procedures

The appropriate administrative office was contacted at each college and university which handled the registration information for entering adult students. Since the aspect of subject confidentiality and signed consent are important considerations for conducting this research, each institution carefully controlled the access available for subject selection. Utilizing the previously stated criteria, each potential adult participant was to receive from his or her institution an initial mailing



which included the following: a cover letter explaining the research project, a consent form, and the Background Information Questionnaire (see Appendix A).

The research protocol for this study called for all packets to be mailed prior to the start of the fall semester, 1984. This procedure is based on those utilized in studying pre-enrollment characteristics, such as those related to initial intentions and commitments (Pascarella et al, 1981; Pascarella & Terenzini, 1980; Terenzini & Pascarella, 1984); which control for institutional influences.

However, the participating institutions were still processing the application and registration materials of their new adult students after classes began. Also, because the names and addresses of students were considered confidential directory information by each of the institutions, and these private institutions were unable to assist with their staff until after late registration was completed; this initial research mailing was delayed. Potential student participants began to receive these packets several weeks after classes began, and this initial mailing continued until the end of November, 1984.

The restricted use of this student directory information also prevented the possibility for follow-up to

those not responding to the initial mailing. A total of 1,402 packets were sent in this first mailing, and 277, or approximately 20 percent, were returned (see Table 4). Of these, 37 individuals were not eligible for further participation: i.e., they were not at least 25 years of age, were enrolled in only graduate classes, or did not wish to participate further in this study.

The second questionnaire, the TAP Research Questionnaire, was mailed to 240 participants at the end of the spring term, 1985 (see Appendix B). Since several follow-up mailings were now able to be conducted, this increased the return of this second questionnaire to 188, or a 75 percent rate of return.

Several questions at the beginning of the TAP Research Questionnaire are designed to further eliminate students from participating who are enrolled in only graduate courses. Of those responding to this second mailing, 18 were dropped from further study because of their graduate study enrollment status.

A final questionnaire, the Enrollment Status Questionnaire, was mailed to the remaining 170 participants after the beginning of the fall, 1985 term (see Appendix C). With the assistance of a follow-up mailing, 165 (a 97 percent return rate) was achieved for this final research

instrument (see Table 4 for a comparative review of the results of all mailings).

The small sample size of this study is a noted limitation. Typically, a minimum of five cases per observed variable is recommended when considering the stability of each factor studied (Tabachnik & Fidell, 1989). Since 82 questions are assessed in these three questionnaires, over 400 respondents would be needed to test the reliability of each item; far more than the 165 individuals who participated in this research study. However, 30 of these items were already tested in other studies (Pascarella & Terenzini, 1980; Terenzini & Pascarella, 1984). Also, many of the pre-entry variables have been investigated in previous studies (Bean & Metzner, 1985; Tinto, 1987).

Also, although a release form was signed by all participants to have the researcher obtain his or her GPA and enrollment status, such information was acquired from the self-disclosed responses in these final two questionnaires. This was necessitated by the previously disclosed difficulty in attaining assistance at the four college sites, as well as the decision by one institution not to provide this information even with the signed consent form. Since it has been reported, however, that

college students are considered to be "conscientious and generally accurate reporters" in regard to their college achievement (Pace, 1985, p. 13), such self-reporting was considered a viable alternative for obtaining such information.

#### Use of Longitudinal/Autopsy Design

The research benefits in utilizing a longitudinal design for attrition studies is documented in Chapter II (Astin, 1975; Pantages & Creedon, 1978; Stoecker et al., 1988; Terenzini, 1980). Since attrition appears to be most pronounced at the end of the freshman year (Eckland, 1964; Pantages & Creedon, 1978), many of the studies cited in Chapter II appear to track their student subjects from just prior to entering their first year of college to the beginning of the fall term of their sophomore year. Although this research studies adults -many of whom have credits beyond the freshman year- it follows a similar design format from the fall semester of one year through the fall of the following year.

In many of the previous studies and reviews of traditional age students described in Chapter II (Allen & Nelson, 1989; Pantages & Creedon, 1978; Pascarella & Chapman, 1983; Pascarella & Terenzini, 1977, 1978, 1979b, 1980; Terenzini & Pascarella, 1984) the numbers of persisters and dropouts were determined by reviewing class

registration lists and student files. In this research, an autopsy questionnaire was designed and distributed during the fall of 1985 to obtain further information from students. With an awareness of Astin's (1975) stated limitations concerning post hoc interpretations, this questionnaire sought to clarify the educational experiences of participants during this study as well as their matriculation goals. This final questionnaire, in combination with the longitudinal design, also allowed for the further classification of students. All of these groupings refer to the institution in which the student entered at the beginning of this study.

1. Same persister: a student who at the conclusion of this study continued to be a student at that institution.

2. Transfer persister: a student who, by the conclusion of this study, transferred to another college or university.

3. Same stopout: a student who voluntarily left the institution, but planned to resume studies there at a later date.

4. Transfer stopout: a student who voluntarily left the institution, but planned to resume studies at another college or university at a later date.

5. Dropout: a student who voluntarily left the institution with no stated plans to resume a college education.

#### Survey Questions and Related Instruments

Based upon Tinto's (1975) model, extensive research on this theory of attrition, and studies on adult student needs reviewed in Chapter II; three questionnaires were formulated for testing the validity of the research hypotheses: The Background Information Questionnaire, the TAP Research Questionnaire, and The Enrollment Status Questionnaire.

After evaluating the responses of the first questionnaire distributed, (The Background Information Questionnaire) additional questions were added to the second questionnaire (The TAP Research Questionnaire) to further identify those individuals who were enrolled only in graduate classes, and were thus, disqualified from continuing this study. Also, additional questions were added to the other two questionnaire to expand the detailed investigation of each hypothesis.

The following three subsections further explain the development and distribution sequence of each of the questions found in the three questionnaires as they

pertain to the various aspects of Tinto's (1975, 1987) model used as the basis of this study.

### Test Items

#### Pre-Entry Attributes and Entering

##### Goals and Commitments (Table 5)

According to Tinto's (1975, 1987) attrition model (see Figures 3 & 4, Chapter II), pre-entrance characteristics, goals, and commitments affect later college attrition. Pascarella and Terenzini's (1980) research validating Tinto's model was used as a basis for formulating questions related to these variables. With the few exceptions cited later, the questions reviewed in this section compose the body of the Background Information Questionnaire (Appendix A), which was distributed during the first term of this study.

#### Pre-entry Attributes

Pascarella and Terenzini (1980) ask three questions about family background: parents' combined annual income, the level of the mother's and also the father's formal educational background. These questions were modified to reflect the life of an adult. Since they would no longer be dependent upon their parents' income, a question concerning their annual household income was included.

Table 5

Description of Measures for Pre-Entry Attributes, and Entering Goals and Commitments, and Expectation of College

Variable	No. of Items	Item Description	Appendix D <sup>a</sup> Location
<b>Pre-Entry Attributes</b>			
<b>Individual characteristics</b>			
age	1	Age at beginning of study	1. a.
gender	1	Respondent's sex	1. b.
race	1	Racial/ethnic group	1. c.
<b>Family background and responsibilities</b>			
dependents	4	No. of dependents (child, teen, adult, elderly)	2. a.
employment	1	Hours employed	2. b.
family's college education	1	Immediate family's college experience	2. c.
household income	1	Income of respondent's total household income	2. d.
marital status	1	Respondent's marital status	2. e.



Table 5, Continued

Variable	No. of Items	Item Description	Appendix D <sup>a</sup> Location
Prior schooling and achievement			
High School achievement	1	High school GPA	3. a.
High School activities	1	Involvement in high school extracurricular activities	3. b.
prior college achievement	1	Prior college GPA	3. c.
prior college credit	1	Hours completed prior to study	3. d.
prior college withdrawal	1	Major reasons indicated for prior withdrawal	3. e.

Entering Goals and Commitments

Choice	1	Ranking of choice in attending current college	4. a.
Class load	1	Full-time vs. part-time enrollment	4. b.
Initial commitment	1	Respondent's initial commitment to completing a bachelor's degree at current institution	4. c.
Initial one-year commitment	1	Respondent's initial commitment to continuing his or her education at current institution during this study	4. d.
Level of confidence	1	Rating level of confidence in in college selection	4. e.
Major	1	Initial academic program of enrollment (professional or liberal arts)	4. f.

Table 5, Continued

Variable	No. of Items	Item Description	Appendix D <sup>a</sup> Location
Time since prior enrollment	1	Length of time since last enrolled in college	4. g.
Clarification of goals, and commitments	2 <sup>b</sup>	Spring term clarification of bachelor's level enrollment, intentions and commitments	4. h.
Entering importance of academic, social, and career development	5	Ranking factors from least important to most important	4. i.

<sup>a</sup> Questions and response choices as appear in the research questionnaires with their coding used in statistical analyses.

<sup>b</sup> Participant may respond to more than one response item available from the six offered within two categories.

Also, since many adults may have other immediate family members who have attended college (including a spouse or children), the two questions concerning the parents' educational background were combined to reflect the possible influence from all immediate family members.

Other questions were formulated to obtain further information on adult's family background and external commitments (Tinto, 1987): i.e., marital status, the number and age of dependents, and the amount of employment. These questions were pursued in order to measure the impact that they might have upon an adult's ability to successfully pursue a college education.

Similar to Pascarella and Terenzini's (1980) research, descriptive information about the participants was gathered including gender and race. In addition, respondents were asked to indicate their age. Although each college site limits the distribution of this research to newly entering students 25 years of age and older, this question further controlled for this variable. This also allowed for testing the further impact of belonging to a particular age bracket within the general nontraditional age category.

In regard to past educational experiences, students were asked to indicate their overall high school grade

average. However, because of the years that have passed since this data was relevant, neither the class rank nor the ACT/SAT scores was obtained from the adult students.

Reflecting an interest in high school social integration patterns, students were asked to indicate the number of hours spent in their high school extracurricular activities. However, since adult students were further removed in time from such experiences, an additional question was asked of the adult student participants concerning their current involvement in leisure and recreational activities outside of work. Although such involvement is exogenous to the institutions and, therefore, Tinto's model (1975, 1987), this investigation may help clarify the role of social integration for an adult student.

Because this research design is altered to include transfer students, several questions were added to these entering factors. These include the number of previous college-level credits earned, the grade average of these credits, the major reason for discontinuing the previous college attended, and the length of time elapsed since this prior college enrollment.

#### Entering Goals and Institutional Commitments

To measure entering goals and institutional

commitments, student participants in this study were asked their initial program of enrollment and where their current institution ranked in their choice of colleges to attend, the level of confidence they had that choosing their institution was the right choice, and whether they planned on completing a bachelor's degree.

In addition to this latter question, one was added which reflects the possible short-term goals of some adult students to complete only a small segment of courses from college; i.e., to acknowledge if they plan to continue enrollment through the spring term (thus completing the 1984-5 academic year) and enroll in the fall of 1985 when the study was to be completed. Although keeping with Tinto's model (1975, 1987) in defining these terms broadly as aspects of goal and institutional commitment, these two questions assessing the baccalaureate and short-term responses could also be more specifically termed as intentions. Because of the difficulty of differentiating between intentions and commitments in this study, the terms will be used interchangeably.

Related to measuring the entering goals and institutional commitments of students was a question ranking the most important and the least important aspects of college life they expect at the institution they are just beginning to attend. This question is also related to

academic and social integration. Also, in order to determine whether the class load has an impact upon an adult's commitment to persistence, a question was added to compare part-time versus full-time enrollment.

Upon reviewing the returns, it appeared that a few of the adult students to whom the college sites mailed the Background Research Questionnaire might be enrolled only in graduate classes, and thus be ineligible to be included in this study. Six additional questions clarifying the student's enrollment intentions and institutional commitment were asked in the spring term mailing of the TAP Research Questionnaire. Since these questions were intended to clarify entering enrollment status and goals, student participants were asked to respond to these questions as they would have when they entered their institution in the fall of 1984. Students who indicated that they were graduate students were deleted from the study.

As previously stated, one of the limitations of this research is the delay incurred in mailing the Background Information Questionnaire to entering adult students until after the beginning of the fall semester of 1984. Thus, the question concerning the anticipated number of informal contacts with faculty found in Pascarella and Terenzini's

work (1980) was eliminated from this research, since such a question would need to have been asked prior to the start of classes. The question concerning the highest expected degree sought by the individual was asked, but not until the Enrollment Status Questionnaire. Thus it was used to assess the postmatriculation intentions of students.<sup>5</sup>

Factors of Academic and Social Integration, Continuing Goals and Commitments (Table 6)

A major portion of the Testing for Adult Persistence (TAP) Research Questionnaire (Appendix B) is focused upon testing the validity of Tinto's attrition model with nontraditional age students. This was primarily accomplished by replicating the five research scales constructed by Pascarella and Terenzini (1980). As found in Table 2, these scales are: Scale I - Peer-Group Interactions; Scale II - Interactions with Faculty; Scale III - Faculty Concern for Student Development and Teaching; Scale IV - Academic and Intellectual Development; and Scale V - Intellectual and Goal Commitments. The range of response to these questions is on a five-point Likert scale ranging from strongly disagree to strongly agree. To help ensure research validity by avoiding response set of the participant, nine questions were negatively posed.

Table 6

Description of Measures for Integration and Continuing Goals and Commitments

Variable	No. of Items	Item Description	Appendix D <sup>a</sup> Location
Academic Integration			
Formal assessment			
academic and intellectual development	7	Pascarella and Terenzini's (1980) Scale IV	5. a.
college grades	1	Self-reported 1st year GPA	5. b.
Informal assessment			
faculty contact	10	Pascarella and Terenzini's (1980) Scales II and III	5. c.
Social Integration			
Formal			
cocurricular activities	1	Involvement in college sponsored activities	6. a.
Informal			
adult peer group contact	1	Informal contacts with adult student peers	6. b.
all-student peer contact	7	Pascarella and Terenzini's (1980) Scale I <sup>b</sup>	6. c.
leisure activities	1	Leisure activities outside college	6. d.



Table 6, Continued

Variable	No. of Items	Item Description	Appendix D <sup>a</sup> Location
Continuing Goals and Commitments			
Commitments	6	Pascarella and Terenzini's (1980) Scale V	7. a.
Highest expected degree	1	Highest degree intentions ranging from no degree to doctoral or professional level	7. b.

<sup>a</sup> Questions and response choices as appear in the research questionnaires with their coding used in statistical analyses.

<sup>b</sup> Revised items as stated in Chapter III of this study.

The predictive ability of these questions were validated through multivariate analyses of covariance and discriminate analysis through a yearlong study of some 763 freshman students at Syracuse University. The resulting scores on these five scales taken as a whole, "correctly identified 78.9 percent of the cross-validation persisters and 75.8 percent of the students in the cross-validation sample who later dropped out" (p.72).

These scales were utilized in their entirety in this dissertation research except for the deletion of one question from Scale I: "My interpersonal relationships with other students have had a positive influence on my personal growth, attitudes and values." However, this question was similar to one in this scale which measures personal satisfaction with student friendships. It also had a slightly lower factor loading (.76 versus .82) than that of this similar question retained on this Scale.

In place of this omitted question, the following statement was asked a second time within the TAP Research Questionnaire: "My interpersonal relationship with other students have had a positive influence on my intellectual growth and interest in ideas." This replication was helpful in evaluating for possible error in response of the participants.

In Pascarella and Terenzini's (1980) research, two additional related variables are considered when studying academic persistence: the student's grade point average (GPA) and their level of involvement in extracurricular activities during their freshman year. These factors were said to be "Potentially significant aspects of academic and social integration" (p. 64). Similarly in this research, students were asked to indicate their GPA for the 1984-5 academic year, as well as the number of hours that they spend in college sponsored or related extracurricular student activities. In addition, in order to combine possible nontraditional age student needs and the informal aspects of social integration, a question was asked concerning their outside of classroom contact with other adult students.

In order to assess the impact of adult student involvement in activities outside of college, a question was asked concerning these leisure events. Also, although all participants in this study were voluntary withdrawals, a change in major to one which the college did not offer could be a strong influence for withdrawing from that institution. Thus this question was asked of entering students. As previously stated, a question concerning their highest degree aspirations was also asked.

Impediments to Adult Persistence (Table 7)

Upon review of the literature (see Chapter II), it appears that additional needs exist (many of which are influenced by factors external to the campus environment) that could impede, if not met, a nontraditional age student in becoming integrated and committed to his or her earlier institutional and educational goals. Thus, 14 additional questions, reflecting these impediments to adult higher education, were developed as a supplement to Pascarella and Terenzini's (1980) original questionnaire, and presented in the TAP Research Questionnaire (Appendix B).<sup>6</sup>

Two of these items focused upon the adult student's need for acceptance into the institution. The remaining 12 were formulated to reflect the following special adult needs for: the scheduling and availability of classes and entering services; institutional and social integration, and the offering of advising, counseling, and career services; and the presenting of academic support assistance and child care service.

In order to assess the readability and understanding of these supplemental questions, they were field-tested on adult students from several local colleges not participating in this study. Eight of these were negatively posed.

Table 7

Impediments to Adult Persistence

Variable	No. of Items	Item Description	Appendix D <sup>a</sup> Location
Acceptance of adults	2	assessment of faculty and institutional interest in adults	8. a.
Availability of classes and entering services	3	Assessment of registration process, convenience of classes and financial aid information	8. b.
Personal development/ affiliation needs and services	7	Assessment of support services and social needs including counseling, advising, and career assistance	8. c.
Returning adult student needs and Services	2	Assessment of special adult needs of basic skill development and child care	8. d.

<sup>a</sup> Questions and response choices as appear in the research questionnaires with their coding used in statistical analyses.

After interviewing the respondents, the questions were then modified when necessary to reflect an accurate understanding of the content of the item. Using an appropriate table (Churchill, J., 1979, p. 315-317), each of the items from the previously stated Scales and the additional 14 adult variables were randomly ordered for placement in the TAP Research Questionnaire.

#### Enrollment Status and Future Academic Goals (Table 8)

A final questionnaire, the Enrollment Status Questionnaire (Appendix C) was developed to obtain additional information concerning the student's past academic year, future goals and academic plans, and current enrollment status. This final questionnaire allows for more elaborate feedback concerning this dependent variable of student status than would be possible by simply reviewing the list of registrants for the fall, 1985 term in each institutional site. This questionnaire also helps confirm the anticipated commuter status of the adult student and the number of hours and terms of study they earned prior to the completion of this study.

One of the primary goals of this final questionnaire is to obtain a clearer understanding of the intentions regarding a student's enrollment status. To this extent, participants were asked to indicate whether they were a same persister, transfer persister, transfer stopout,

Table 8

Description of Measures for Enrollment Status

Variable	No. of Items	Item Description	Appendix D <sup>a</sup> Location
Credit/terms completed	2	No. of hours and terms at entering institution at completion of study	9. a.
Commuter enrollment	1	Clarification of commuter status	9. b.
Current status	1 <sup>b</sup>	Status of academic persistence (persister, stopout, withdrawal, dismissed)	9. c.
Clarification of status	1	Listing most important reason for remaining, wishing to return, or withdrawing from college	9. d.
Status of major	2	Transfer due to selection of new major	9. e.

<sup>a</sup> Questions and response choices as appear in the research questionnaires with their coding used in statistical analyses.

<sup>b</sup> Participant chooses one response from six categories indicating enrollment status.

withdrawn or dismissed from college. Since this is a study of voluntary attrition, students were deleted from further consideration when they responded to this latter question.

Some persisters were further asked to clarify their academic goals at that institution; while students who withdrew and did not indicate a desire to return, were asked if the reason for this withdrawal was due to a change in their academic major since they first attended this institution in the fall of 1984.<sup>7</sup> Each category of students was also asked to state one reason for their continuation or withdrawal (even temporarily) from that institution. These reasons were later coded to determine whether any pattern of reasons might emerge for persistence, withdrawal, and planned return to the institution in the future.

### Analyses

Since this investigation utilizing nontraditional age students presents novel research in the field of attrition studies, several statistical procedures were utilized to allow for a wide range of data collection and analyses. Whenever possible, data was coded to reflect a progressive sequence of responses: i.e., "no" was coded 1, and "yes"



was coded 2; and the larger the amount within a category or the higher the letter grade, the larger the coded number. In order to develop an overall understanding of the outcome of this study, an overview of the results was pursued.

An investigation of the six categories of enrollment status composing the dependent variables was first explored. With a total of only 165 participants completing this study, it was necessary to collapse several of these groups for further statistical study. Once determined, a frequency percentage of group enrollment per each of the four research institutions was completed.

A brief assessment was also made of the participants' reasons for withdrawal from their previous institution, expectations of college life, change in major field of study not offered at the entering institution, and subjective statements concerning their enrollment status at the conclusion of the study. Although these factors were not directly related to Tinto's model (1975, 1987), they give a more clear understanding of the adult participant's decisions related to attrition and retention.

An analysis of the variables associated with assessing the five stated hypotheses was then performed. Initially, an assessment utilizing one way analysis of

variance was used to study the association of each item individually among the dependent variables of classification. Since these classification groups comprise independent categories of enrollment, the ratio of between to within variance produces an F distribution (Downie & Heath, 1970, p. 220). Although the participants in this study were not composed of a random sampling of a larger population, but instead were those who voluntarily completed the study, such analysis helps to clarify the importance of certain items among the numerous variables being studied in this research. Also, since the responses of some participants (due to missing values) were not included in the discriminant analyses discussed later in this section, the full impact of each item is more easily assessed through this statistical procedure. A significant F-ratio for a particular variable would indicate that the group means among the dependent variables are not estimates of a common population mean, and that the corresponding null hypothesis being investigated is rejected.

Since this is an exploratory study, the investigator chose to reduce the likelihood of committing a Type II error (Folks, 1981, p. 170; Downie & Heath, 1970, p. 168), and set the level of minimum significance for the F-ratio

at .05. More conservative measures of significance might result in the rejection of relationships between variables and the criteria that merit further study. However, to add more rigor to the analyses and to allow for a comparison among pairs of means, Tukey's HSD test (cited in Harber, A., & Runyan R., 1984, p. 320) is also performed on relationships that were at or below the .05 level.

Since the items utilized in testing the validity of Hypothesis V are novel and not tested in prior research, additional statistics (factor analysis, alpha coefficient and Pearson product-moment correlations) were calculated to aid in the development of sets of questions for further statistical evaluation. This procedure also assists in reducing the concern for multicollinearity of the items entering the later discriminant analyses.

In order to more readily differentiate among the many factors studied associated with each of the dependent research groups, unordered stepwise discriminant analyses based upon Wilk's lambda (Folks, 1981, pp. 337-342; Klecka, 1975) was also employed. The many items assessed and limitations in computer space necessitated running five sets of analyses.

The first set of items, based on Pascarella and Terenzini's (1980) study and the inclusion of additional

items related to adults, assessed pre-entry attributes, various individual items associated with evaluating Hypotheses II through IV. The second set focused on the integration/commitment scales of Pascarella and Terenzini (1980). A set of items associated with evaluating the possible impediments to adult academic persistence (Hypothesis V) was also subjected to discriminant analyses. Since both the integration/commitment scales and the impediment scales are more rigorously analyzed instruments of study, their sets were entered in another discriminant analyses for evaluation on the significance of their relationship to the study of academic persistence.

Classification analysis was performed on all of the items entering the equations of the five sets of discriminant analyses. This procedure produces percentages of prediction accuracy for factors associated with each of the research groups.

Since adults may enroll in college only to pursue a limited number of courses (Avakian et al., 1984; Bean & Metzner, 1985; Japley et al. 1987; Walleri, 1989), it may be that this limited intention contributes excessive influence on the differences among the research categories of academic persistence. Thus, further statistical study

of the previously stated integration/commitment and impediment scales was performed through multivariate analysis of covariance controlling for this intention to withdraw prior to the completion of this study.

All the statistics are carried out with the SPSSx pc program (Norusis, 1986).

### Summary

This chapter described the general design of this study, with special emphasis given to the survey items and related instruments utilized in this research. Also included in this section was a description of the study's procedures and statistical methodology.

Chapter IV will present and analyze the data obtained through this research. It contains an overview of the sample and results, and an analyses of the data affecting five research hypotheses. These analyses includes analysis of variance, multivariate analyses of covariance and discriminant analysis.

## CHAPTER IV

### RESEARCH FINDINGS

This chapter addresses the data collected in this longitudinal study. It is presented in the following sections: an overview of sample and results, analysis of data, and a brief summary of the chapter.

#### Overview of Sample and Results

A large quantity of information is collected in this exploratory, longitudinal study of academic persistence. Much of this data was utilized to test the stated research hypotheses, and thus was discussed in the next section of this chapter. However, since this is a complex study, an overview of the data will first be presented. This will help clarify the dependent variables of academic persistence, give an overview of the resulting retention and attrition at the participating institutions, and briefly review the results of the additional data collected supporting the constructs of this study.

#### Categorization of the Participants

As stated in Chapter III, the research participants who received the Enrollment Status Questionnaire were asked to indicate their status as of the fall term, 1985: i.e., same persister, same stopout, transfer persister, transfer stopout, dropout, or advised to withdraw/

dismissed. Since this is an investigation of voluntary attrition, the single participant who indicated this latter category was dropped from further statistical consideration in this study. Table 9 summarizes the category membership for the remaining 165 participants.

The two largest subgroups of participants are in the categories of same persisters (N = 97) and same stopouts (N = 26). The other 42 individuals are transfers to another college, dropouts from college with no further plans to continue their education, or, as penciled in by one participant, completed the goals set prior to attending the college. Considered separately, each of these categories of voluntary dropout is small in number. Since they all indicate that they withdrew from the college that they entered at the beginning of this study and gave no indication of plans to return there, they are studied as a single group. Furthermore, since these categories have now been reduced to the aforesaid criteria, they are now simply termed "persisters", "stopouts", and "withdrawals".

#### Comparison to National Norm

The national rate of attrition differs among the various types of institutions. Private institutions granting doctoral degrees have an average dropout rate from undergraduate freshman to sophomore year of 16.2

percent, while master level private institutions have a rate of 22.7 percent during this same year. This rate of attrition rises to 26 percent for those institutions conferring only bachelor's degrees ("National Dropout," 1989).

Table 9

The Number of Participants Analyzed per Research Group

Research Group	n	% <sup>a</sup>
Same persister	97	59%
Same stopout	26	16%
Voluntary dropout	42	25%
completed goal	(1) <sup>b</sup>	
dropout	(6)	
transfer persister	(21)	
transfer stopout	(14)	
Total	165	100%

<sup>a</sup> Rounded to the nearest integer, <sup>b</sup> Number of participants per subcategory

When both the stopouts and withdrawals are considered as a single group, the attrition rate for this study during the same approximate timeframe was 41 percent, closer to that of Tinto's (1987) estimate of those



dropouts who never attain a college degree. As described in the next section, only one of these institutions (Institution "C") appears to have a significantly lower attrition rate than the other three institutions. The remaining three demonstrate a closer degree of similarity in the rate of persistence and stopout.

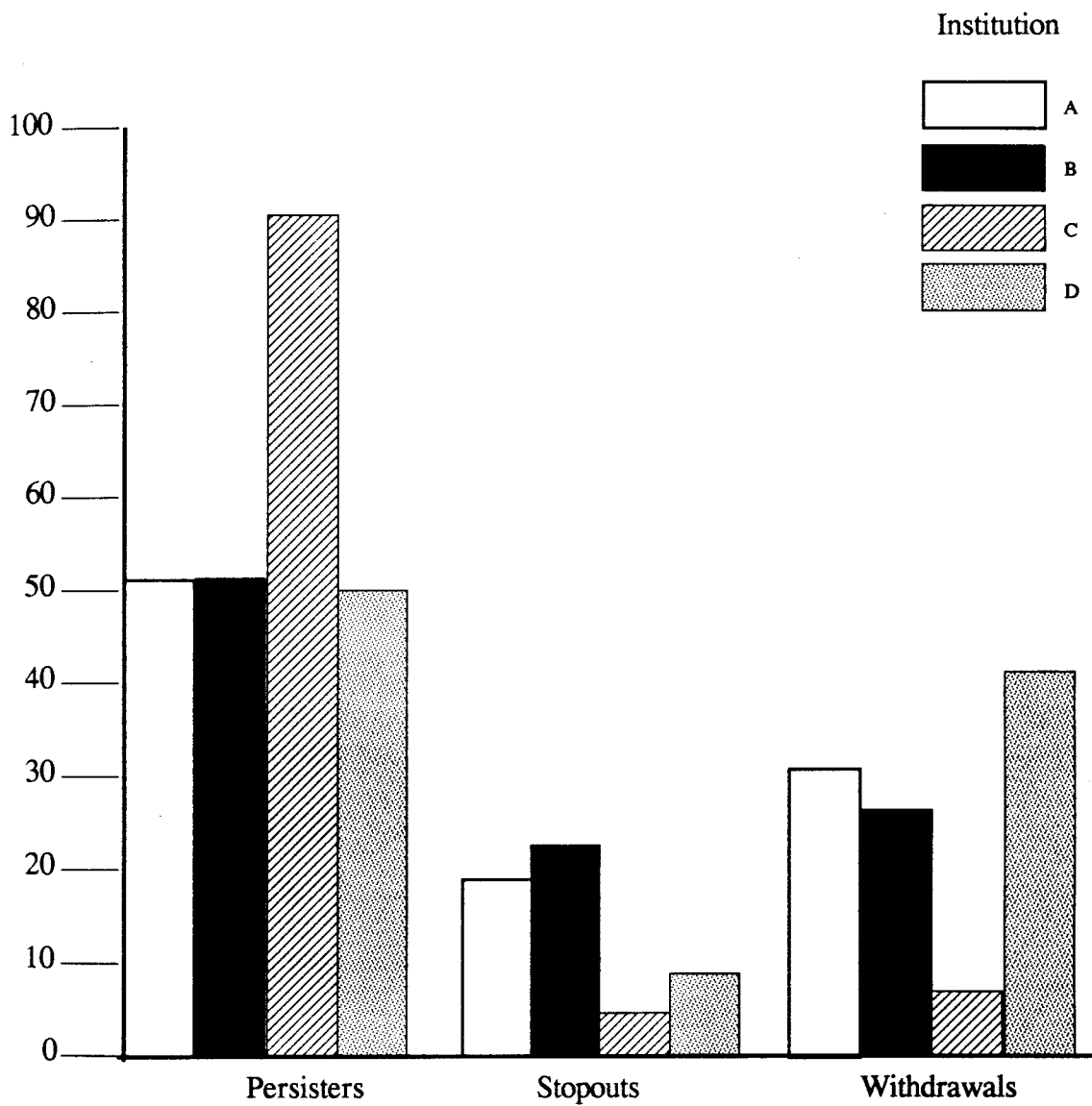
#### Comparison of Research Groups Among Institutions

Figure 6 compares the three research groups of persisters, stopouts and withdrawals with the four institutions used in this study. The two larger institutions ("A" and "B") with the greatest number of students completing this study and the slightly higher competitive status (Table 2, Chapter III), have similar persistence rates. The smallest institution ("D") has a similar percentage of persisters. However, it also has the largest percentage of withdrawals (42 percent) in comparison to the other three institutions (see Appendix E, Table 1 for specific data).

It is also noted that with 90 percent of the respondents categorized as same persisters, institutions "C" has the highest overall rate of persistence. Thus, only a small percentage of participants from this institution enter into the category of stopout or withdrawal. It is not known whether this is simply an artifact caused

Figure 6

Comparison of the Frequency Percentage of Enrollment Status per Research Group



by a lack of response from those who withdrew from this institution. However, since it is the intent of this research to study the participants as belonging to a single population of adult students, no further analysis is reported here concerning the specific data found at each of the four institutions.

#### Supportive Data

The data from four sets of questions are briefly reviewed in this section. Although this information is not directly related to the integration model driving this study (and thus is not subjected to the rigor of the data analysis described in the later part of this chapter), it helps support the future research postulated in Chapter V. This information also assists to further define and clarify the educational concerns and pursuits of the adult students studied in this research.

These sets of questions are the major reason why the participants left their previous college; expectations of college life at the beginning of this study; the impact of changing majors on academic persistence; and the results of a brief autopsy survey of the reasons why they remain, stopout, or withdraw from their stated institution.

#### Prior College Withdrawal

As previously reported from the stated pilot study conducted at one of the larger institutions used in this

research, the majority of the participants had attended college in the past. With only nine persisters, four stopouts, and one withdrawal listing no prior college credit, only eight percent of the participants appeared to be newly entering freshmen.

Since most of the participants in this study were continuing or returning adult college students and all reported to be new to their current institution, it was of related interest to further explore the reason for discontinuing their enrollment at their prior college. Of the 130 responses<sup>8</sup>, the mode for all three indicates that the single most prominent reason for withdrawal was due to the completion of the participant's academic program at his or her prior four year institution, community college or nursing school; or at least the completion of this individual's stated educational goals at these colleges. This response was indicated by 40 percent of the current persisters (39 out of 97), and 31 percent of the stopouts (8 out of 26) and withdrawals (13 out of 42). The other indicated responses by at least one or more individuals within all of the three groups were: personal/family concerns, financial, the need to relocate, the lack of academic stimulation/challenge, and a change in the academic major (Appendix E, Table 2).

Associated with initial intentions and commitments, another related area that was investigated focused on the length of time that elapsed since the participant's previous college education (Appendix E, Table 3). The modal response for all three criteria groups was less than one year. With 21 persisters and 9 withdrawals indicating a time lapse of five to ten years, this time interval was the second most frequent response. The stopouts' second most frequently indicated category, though, was the slightly more recent time span of two to five years. However, a close degree of similarity does exist among the three research groups concerning this variable of time, and was made clear when an analysis of variance among the means of these groups indicated a very low  $F$  ratio; ( $F = .17$ ,  $df = 2$  and  $161$ ,  $P = .85$ ).

Thus, the participant in this study was likely to be an individual with prior college credit up to and including a college degree, and among the vast majority of these individuals, has been away from college no more than 10 years.

#### Expectations of College Life

Also associated with initial intentions and commitments, the participants in this study were asked to rank five statements as to their level of importance regarding college life. To compare the results of this

question, the data was arranged according to the most important and the least important factors (Appendix E, Table 4).

Overall, the academic and intellectual development of the student was ranked as most important by over one half of the participants, with persisters and stopouts ranking it the highest. Career development ranked as the most important factor among the withdrawals. Since seven of the 20 withdrawals were found to already have a bachelor's degree (as described later in this chapter), this factor may help to explain why such individuals returned to pursue further undergraduate coursework. They may have wished to either pursue another career or at least strengthen their current area via additional instruction.

The personal, social and recreational development of the participants and the interaction with other students was considered at this stage of the study to be the least important aspect of college life. With only one participant ranking the interaction of faculty and staff as the most important factor of college life, it, too, was not considered a highly important variable. These factors, however, were again studied through the various integration and impediment scales and are further scrutinized for their validity in the next section of this

chapter. In addition, the results of this investigation are discussed and comparisons made to this preliminary information stated here in Chapter V.

#### Change in Major

Transfer persisters, transfer stopouts, and dropouts from their institution were asked in the final questionnaire (Appendix C, question 7) to indicate if a change in major affected their choice to leave college. Of the 42 withdrawals, 5 indicated that such a change was one reason for their discontinuation. However, reviewing each participant's responses given in the Background Information Questionnaire (Appendix A), it was noted that two of these stated their intention to receive their four-year degree from this institution, while four of the five indicated their intent to at least enroll through the course of this study. Since such responses suggested that other factors might be influencing these decisions to withdraw, and since the question left other factors as possible reasons, these five students were kept in this study.

#### Survey of Enrollment Status

The participants were asked in the Enrollment Status Questionnaire to indicate and briefly discuss the major reason for remaining in their particular college, desiring to return, or withdrawing from that institution (Appendix

E, Table 5). Although only asked to elicit one response, 39 persisters, 8 stopouts, and 8 withdrawals gave more than one statement to this fill-in question. Although these multiple statements decrease the validity of interpreting the responses, certain patterns emerged. Also, whereas this coded information is beyond the focus of this current study, it lends insight into the analyses in the next section, as well as the discussion in Chapter V.

The institution's convenient location for offering classes, and a high level of satisfaction both with the institution and the participant's academic program were reasons stated by persisters -and to a lesser extent by stopouts- for continuing or wanting to return to their particular institution. Whereas having a convenient class schedule and being satisfied with instructor(s) at the institution also appeared as important factors associated with persisting, neither were noted by more than a few withdrawals and stopouts as being associated with the decision to leave the institution nor desire to return.

The cost of attending college was noted as a contributing factor by both persisters and withdrawals. Whereas for the former group of individuals this reflects the support of continuing by way of financial assistance, the cost for the latter appeared to be a reason for



withdrawal. Also, nearly one-third of the withdrawals stated that leaving college was associated with achieving their academic goals. Except for one individual who was able to graduate within the length of this study, the other withdrawals appeared to satisfy a short-term matriculation plan of course completion with no mention of graduation.

Although seven persisters indicated nearing completion of a goal as a reason for persisting, only one stopout listed this response. This may indicate that stopouts were further from completion of their degree than either of the other two research groups.

### Analyses of Data

This section reviews the results of analysis of the individual items within the modified constructs of Tinto's model (1975, 1987) used in this study (see Chapter III) affecting the acceptance or rejection of the five research hypotheses. It also reports on the relationship of these items as predictors of persistence, stopout, and withdrawal among the nontraditional age participants of this study.

#### Assessment of Construct Items

##### Pre-Entry Attributes and Entering Goals and Commitments

Most of the items discussed in this section were

presented to the participants at the beginning of this study within the Background Information Questionnaire (Appendix A), and are considered initial constructs of Tinto's model (1975, 1987). The relationship between these factors and the dependent variables, as outlined in Hypotheses I and II, are examined here.

Analysis of variance was employed to determine the effects of the 15 pre-entry variables upon the dependent variables. Only two factors approached the level of minimal statistical significance: the amount of employment and the number of previous credits earned by the participants (Table 10). Although not found to be statistically significant, a review of those results helps to further clarify the population and research groups assessed in this study.

#### Individual characteristics.

Sixty individuals fell within the age range of 25 to 30 years old, and thus constituted the largest single group of participants. Forty-four individuals were between 31-35, fifty-three were between 36-50 and only eight were 50 years of age or older. Only 37 percent or 61 out of 165 of the participants are 36 years of age or older. With 36 percent of all persisters belonging to this age group, these 35 students formed the largest number of older participants. A smaller percentage of

Table 10

Analysis of Variance Among Persisters, Stopouts, and Withdrawals and the Variables Assessing Pre-Entry Attributes

Variable	DF	1	2	3	F-ratio
Individual characteristics					
Age	2,162	2.13	2.04	1.86	1.25
Gender	2,162	1.79	1.77	.162	1.21
Race	2,162	1.82	1.85	1.88	.35
Family background and responsibilities					
Dependents					
child	2,157	.44	.46	.46	.01
teen	2,161	.41	.73	.36	1.63
adult	2,156	.55	1.19	.51	1.47
elderly	2,161	.06	.12	.10	.24
Employment	2,161	3.36	3.80	3.88	2.68 <sup>b</sup>
Family college education	2,157	1.78	1.80	1.78	.03
Household income	2,158	3.11	3.27	3.24	.25
Marital status	2,162	1.47	1.46	1.36	.79
Prior schooling and achievement					
H.S. GPA	2,161	2.85	2.64	2.86	.87
H.S. activities	2,158	3.03	3.04	2.98	.02
Prior college credit	2,160	3.93	3.50	4.29	2.65 <sup>b</sup>
Prior college GPA	2,147	3.00	3.43	2.95	1.46

<sup>a</sup> Group mean for 1=persister, 2=stopouts, 3=withdrawals

<sup>b</sup>  $p = .07$

older participants in this study was found among the stopouts (31 percent or 8 out of 26), and withdrawals (19 percent or 8 out of 42).

Upon closer investigation, it was noted that the percentage of individuals within all four age groups were similar for both persisters and stopouts, with the largest percentage of both actually occurring among the older age range of 36-50. Withdrawals were composed of slightly younger students, with their largest single group occurring within the 25-30 year old age category. However, these age differences were not found to be significant when related to academic persistence: ( $F = 1.25$ ,  $df = 2$  and 162).

With 124 women involved in this study, men composed only slightly less than 25 percent of the participants. Approximately the same percentage of each sex was found among the persisters and stopouts. However, the percentage of men increased from 21 percent for persisters to 36 percent for withdrawals. Again, this difference in the percentage of male participants by itself did not prove a significant factor affecting academic persistence; ( $F = 1.21$ ,  $df = 2$  and 162).

The 139 individuals who indicated that they are Caucasian Americans compose 84 percent of the sample population of this study, and were also the largest group

of participants among each of the research groups. Some differences were noted, however, with the smaller number of responses from the other racial categories decreasing from 20 percent among the persisters to 12 percent among the withdrawals.

The second largest racial group in the sample was composed of African American students. Of the 17 persisters who were not Caucasian, 12 indicated that they were from this category. Likewise, three of the five non-Caucasian participants who were withdrawals were African American. All four of the minority stopouts were also members of this racial category. Even when the 26 non-Caucasian participants were grouped as a single minority category, however, the F-ratio of race was below 1.00, and not significant; ( $F = .35$ ,  $df = 2$  and 162).

Although none of these individual characteristics proved significant, they indicated that most participants were Caucasian, most were female, and the majority were under the age of 36. When viewed as a composite, 53 percent of the sample (87 participants) were Caucasian women. When additionally paired with the factor of age, 41 percent (68 participants), were Caucasian women under the age of 36. However when both sexes were considered,

57 percent of the participants (93 individuals) were Caucasian and under the age of 36.

Family background and responsibilities.

Like other pre-entry characteristics, none of the family life factors were correlated with the types of academic persistence. The mean for the families' college education was nearly identical for all three groups indicating that most of the participants in the study were not the first members of their family to attend college.

In regard to household income, all three groups had moderate incomes, with persisters exhibiting the lowest level of earnings. Thus, individuals who withdrew from college in this study did not come from families with a significantly lower levels of economic resources.

Marital status was also found not to be related to academic persistence. It was noted, however, that more than one half of the participants (91 out of 165, or approximately 55 percent of the sample), indicated that they were unmarried or separated when these two categories were considered as a single factor. When each research group was considered separately, the lowest percentage of married participants were withdrawals (38 percent, or 15 out of 42). Persisters and stopouts both exhibited a greater percentage of married students within their sample

groups (48 percent, or 47 out of 97; and 46 percent, or 12 out of 26 respectively).

The number of dependents compared among the research groups was not statistically significant. This may be influenced, however, by the large number of reported dependents that occurred among several of the participants. When reviewing the number of participants in each group having responsibility for dependents irregardless of their age, withdrawals have proportionally fewer dependents within their care (Appendix E, Table 6).

The number of hours employed at the beginning of this study, may have some relationship to attrition. As the number of hours of work increased approaching full-time employment, so did the likelihood of stopping out and withdrawing, nearly approaching a minimal level of significance; ( $F = 2.68$ ,  $df = 2$  and  $161$ ,  $p = .07$ ). Thus, persisters were employed the least number of hours when they began their course of studies.

Although it has not been directly investigated in this study, it is assumed that because of their predominantly part-time status (see Table 11), much of this employment occurred off-campus. This was supported by a report from each college site used in this research that less than 25 percent of all their adult students were employed on their campus.

Prior schooling and achievement.

Although exhibiting a lower mean for High School GPA among the stopouts, neither this factor nor involvement in High School activities were found to be statistically significant. Although some differences - notably higher GPAs among stopouts - were found when comparing previous post-secondary achievement, the amount of prior college credit approached a minimal level of significant difference among the research groups; ( $F = 2.65$ ,  $df = 2$  and  $160$ ,  $p = .07$ ). The relationship, however, was not intuitive. Stopouts entered with the least amount of prior credit, while those who withdrew during this study had the greatest amount of such credit, averaging more than 31-59 hours of previous college enrollment.

Though not reported in Table 10, an additional variable related to prior college education was noted when reviewing unsolicited remarks occurring within the responses to the three research questionnaires used in this study. Twenty participants revealed that while they were currently pursuing undergraduate courses, they already obtained at least a bachelor's degree from another institution prior to the beginning of this study. Twelve of these were withdrawals, five were persisters and three were stopouts. In order to investigate the effect of this



factor upon persistence, these twenty individuals were coded as "2" and the other 145 participants in this study who did not voluntarily indicate that they already completed a prior bachelor's degree were coded "1". As might be expected from these numbers, the withdrawals had a significantly greater mean (1.26) than either the persisters (1.05) or the stopouts (1.12); ( $F = 6.77$ ,  $df = 2$  and  $162$ ,  $p < .01$ ).

When this factor was compared to the entering intention of the participants (see Appendix A, question Q), it was noted that 13 of these participants (all but two of the stopouts and five of the withdrawals) intended to continue enrollment throughout this study. However, only two persisters, one stopout, and one withdrawal planned to complete another bachelor's degree at their institution.

Since this variable assessed an a posteriori factor and comparison among the research groups, and since it was constructed from statements elicited by only slightly less than 12 percent of the participants; it was not included for further analysis. However, when this information is coupled with the fact that 64 percent of the withdrawals (27 out of 42), 51 percent of the persisters (49 out of 97), and 36 percent of the stopouts (10 out of 26) indicated that they have earned 60 hours or more at other

institutions (Appendix A, question M), it appears that this research sample included many experienced college students.

Entering goals and commitments.

The effect of goals and commitments upon academic persistence was investigated at several points throughout this study. Of the seven entering variables, all but two-choice and class load- were found to be statistically significant differentiating items (Table 11). However, even these two items demonstrated some differences, with persisters exhibiting a slightly higher probability that attendance at their current college was closer to that of their first choice.

Also, although class load was not found to be a statistically significant item by itself, it further clarifies the sample population of this study. Of the 165 participants, 133 or approximately 81 percent, enrolled as part-time students. Although only a small percentage of stopouts (3 out of 26 or 12 percent) and withdrawals (6 out of 42 or 14 percent) enrolled as full-time students, the largest percentage of full-time students were found to be persisters (22 out of 97 or 23 percent).

Table 11

Analysis of Variance Among Persisters, Stopouts, and Withdrawals and  
the Variables Assessing Entering Goals and Commitments

Variable	Df	Group <sup>a</sup>			F-ratio	HSD <sup>b</sup>
		1	2	3		
Initial assessment						
Choice	2,154	3.75	3.64	3.59	.87	-
Class load	2,161	1.21	1.12	1.14	.67	-
Baccalaureate goal/institutional commitment	2,157	1.94	1.72	1.43	26.12*	.17
One-year commitment	2,160	1.97	1.81	1.68	11.62*	.14
Confidence	2,159	3.43	3.52	3.07	4.33*	.31
Major	2,104	1.67	1.94	1.89	4.08*	.25
Clarification of commitments						
Clarification of goal/commitment	2,142	1.06	1.30	1.61	20.83*	.20
Clarification of short-term commitments	2,123	.99	1.00	1.19	10.37*	.10

<sup>a</sup> Group mean for 1 = persisters, 2 = stopouts, 3 = withdrawals, <sup>b</sup>

Tuckey's Honestly Significant Difference test for comparison among  
pairs of means, \* Significant difference found among the means, p

< .001 except for Major (p = .02) and Confidence (p = .01).

All three research groups exhibited confidence in the original selection of the college that they entered at the beginning of this study. However, withdrawals demonstrated a significantly lower level of confidence when compared to the other two research groups.

In regard to evaluating the impact of participant's major upon academic persistence, only those students who declared a major were considered. Thus 58 individuals who were undeclared or who listed more than one major area of study were deleted from this analysis. Of the 107 students who were studied, 80 declared a professional major (55 in Business, 20 in Nursing, and 5 in Education). Investigating the 27 liberal arts majors studying the Humanities and Social Sciences, only two were found within the withdrawal group, and only one among the stopouts. However, 24 persisters (a total of 25 percent of the entire population of this group) were found to be liberal arts majors. Of these, 17 were women and 7 were men. Thus, a statistical difference was found among these research groups concerning their intended major.

Both the short-term commitment to continue an education throughout this 16 month study, as well as the commitment to complete a degree at the institution entered at the start of this study, were strong differentiating factors among the three groups of academic persistence

studied in this research. In terms of the former intent, all but one of the 97 persisters indicated their desire to enroll in classes through the spring term of 1985. The other two research groups displayed a reduced commitment to this goal, with 81 percent of the stopouts (21 out of 26) stating their desire to continue, and only 64 percent of the withdrawals (27 out of 42) preferring this goal. Thus, persisters demonstrated a significantly greater initial degree of commitment to enrollment than that of the stopouts. Since such short-term goals were again noted as an influencing and differentiating characteristic among the research groups, this factor will be controlled in the later investigation of the integration/commitment and impediment scales.

The intention to complete a baccalaureate degree at their stated institution demonstrated a similar pattern of significant differences among the three research groups. With 94 percent (91 out of 97) of the persisters stating that they were interested in completing a bachelor's degree at their stated institution, this compares closely with the intent of this group to enroll through the next spring. Stopouts exhibited a slightly lower rate of interest in completing their degree from their current institution (18 out of 26 or 69 percent) than their intent

of continuing to enroll throughout the study. However, the greatest degree of difference between these two variables was exhibited among the withdrawals. The percentage dropped from 64 percent who intended to continue enrolling to 43 percent (18 out of 42) who had a stated goal of completing a baccalaureate degree at this institution. The clarification of both of these within the second questionnaire (Appendix B) also confirmed a like pattern in their significance among the research groups of persisters, stopouts, and withdrawals.

#### Factors of Integration and Continuing Goals and Commitments

Items measuring academic integration, social integration, and continuing goals and commitments are investigated in this section. Since many of these items will be subjected, as sets within scales, to more rigorous assessment of discriminant analyses, they will only be briefly reviewed as individual factors influencing academic persistence.

##### Academic integration.

Measuring the formal aspects of the institution's academic system, and therefore the student's integration, to this system, was accomplished through his or her self-reported grade average for the first academic year of this study, as well as their responses to Pascarella and

Terenzini's (1908) Scale IV. The informal aspect of integration was concerned with the participant's assessment of interactions with the faculty and their concern for teaching and student development, and was measured using items from Pascarella and Terenzini's Scales II and III (1980). These items for these Scales are listed in Table 2 of this study.

The result of this analysis indicated that there was mixed support for both the formal and informal items measuring academic integration. Neither the participant's GPA nor any of the factors assessing the faculty's concern for student development (Scale III) proved significant in an initial one-way analysis of variance (Table 12). However, persisters did demonstrate a higher first-year GPA, as well as a greater degree of satisfaction with outside class contact with faculty than either stopouts or withdrawals.

In assessing items from Scale IV, persisters exhibited a statistically higher level of satisfaction than the other two research groups in relationship to their intellectual development, academic experience, and academic performance. With the exception of one item, factors measuring interactions with faculty (Scale II) also proved significant. Withdrawals exhibited the lowest

level of satisfaction with these items of integration ( $p \leq .05$ ).

Table 12

Analysis of Variance Among Persisters, Stopouts, and Withdrawals and the Variables Assessing Factors of Integration

Variable	Df	Group <sup>a</sup>			F-ratio	HSD <sup>b</sup>
		1	2	3		
Academic integration						
Formal assessment						
College GPA	2,157	3.33	3.00	3.08	2.44	-
Academic/intellectual development (Scale IV)						
intellectual development	2,158	4.06	3.84	3.33	9.75 <sup>***</sup>	.39
intellectual growth	2,154	4.20	3.82	3.93	2.00	-
academic experience	2,158	4.20	3.96	3.44	8.98 <sup>***</sup>	.43
intellectual stimulation	2,157	3.86	3.84	3.64	.60 <sup>***</sup>	-
ideas/intellectual matters	2,154	3.82	3.82	3.30	3.28	-
cultural development	2,156	2.57	2.54	2.05	2.89	-
academic performance	2,159	4.10	3.85	3.54	4.05 <sup>*</sup>	.06



Table 12, Continued

Variable	Df	1	2	3	F-ratio	HSD <sup>b</sup>
Informal assessment						
Interactions with faculty (Scale III)						
personal growth, values, attitudes	2,156	3.01	3.24	2.87	1.83	-
intellectual growth/interest in ideas	2,152	3.52	3.36	3.03	3.63*	.46
career goals/ aspirations	2,153	3.34	2.91	2.80	4.66**	.49
developing student/faculty relationship(s)	2,153	2.72	2.55	2.17	3.10*	.53
informal interactions with faculty	2,156	3.23	3.65	3.07	3.03*	.41
Faculty concern for student development (Scale III)						
interest in students	2,153	3.72	3.75	3.52	.44	-
faculty rated as outstanding/ superior	2,154	3.51	3.39	3.29	.91	-
outside class interaction	2,160	4.08	4.12	3.73	2.48	-
interest in students growth	2,156	3.53	3.75	3.54	.46	-
interest in teaching	2,152	3.15	3.25	3.30	.20	-

Table 12, Continued

Variable	Df	1	2	3	F-ratio	HSD <sup>b</sup>
Social integration						
Formal assessment						
Cocurricular involvement	2,159	.29	.42	.13	1.02	-
Informal assessment						
Adult peer contact	2,160	.75	.58	.43	1.43	-
Peer-group interactions (Scale I)						
developing close student relationships	2,154	2.90	2.77	2.63	.82	-
developing satisfying student friendships	2,156	3.72	3.58	3.20	4.03*	.43
intellectual growth/interest in ideas	2,2,155	3.55	3.41	2.95	4.63*	.47
intellectual growth/interest in ideas (repeat)	2,156	3.53	3.44	3.05	2.66	-
meeting/developing friendships	2,158	3.86	4.00	3.62	1.18	-
student help with personal problems	2,154	3.39	3.43	3.29	.19	-
comparison of peer attitudes	2,155	3.39	3.43	3.07	1.75	-
Leisure activities	2,160	3.96	4.04	3.76	.36	-

Table 12, Continued

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Note: Scales adapted from Pascarella and Terenzini's (1980) research (see Table 2 in text); revisions noted in text. <sup>a</sup> Group mean for 1 = persisters, 2 = stopouts, 3 = withdrawals. <sup>b</sup> Tuckey's Honestly Significant Difference Test for comparison among pairs of means. \*  $p < .05$ , \*\*  $p = .01$ , \*\*\*  $p < .001$ .

### Social integration.

As with academic integration, both the formal and informal aspects of the institutional social system were considered when measuring social integration. The formal aspect focused on the participant's involvement in cocurricular activities, while the informal integration was measured using items listed in Pascarella and Terenzini's (1980) Scale I (see Table 2). Also, another supplemental question measuring this informal dimension was utilized concerning adult peer-group interactions. Since adult commuter students may be more invested in the social dimensions outside college, this factor -as asked in the beginning of this study- was also reviewed here.

In investigating the results concerning the amount of time spent in participating in college-sponsored activities, all three research groups averaged less than one hour per week of involvement. The results of an initial one-way analysis of variance also did not prove significant to this item among the three groups. Of the 134 part-time students in this study, four persisters, two stopouts, and only one withdrawal indicated more than one hour per week of involvement in campus activities. Even when the 31 full-time participants were considered, only an additional four persisters listed more than one hour per week of participation in campus activities, with none

of the stopouts nor withdrawals listing more than an insignificant amount of time spent in campus activities.

Of the seven items from Scale I measuring the informal aspects of the social system, only two produced a significant F-ratio. The persisters demonstrated a significantly greater degree of satisfaction with the college friendships they developed than that of the other research groups, especially that of the withdrawals. Likewise, persisters differed significantly from withdrawals in the belief that their relationships with other students had a positive influence on their intellectual growth and interest in ideas. Although it did not quite reach significance, a similar difference was found from this question when it was repeated as a control for response error later in this study ( $F = 3.05$ ,  $df = 2$  and  $156$ ,  $p = .07$ ). The results of the means from the stopouts for all three of these aforestated factors fell between the two other research groups, but in all items, closer to that of the persisters.

The responses to the question concerning adult peer-group interactions did not reveal a significant difference among the three research groups. Although there was a steady decline in these peer contacts from persisters,

through stopouts to withdrawals, the differences among these groups were not significant.

Investigating the amount of time spent in leisure activities outside of the college revealed that the adults in this sample spent much more time invested in these activities than that of college-sponsored activities, with all participants averaging nearly 3 hours per week in such involvement. Although withdrawals averaged the least amount of time in such activities, this difference was not found to be significant.

It is also noted, however, that the amount of involvement in outside of college activities was not negatively correlated with the amount of involvement in college sponsored activities; i.e., students who were active in college student activities were not less involved in leisure activities away from campus. Indeed, the 20 individuals who indicated that they were involved in one or more hours of student activities per week, still averaged approximately four hours of outside leisure activities each week; thus demonstrating that individuals who are active are simply more likely to get involved in whatever they do. Since these leisure hours are obtained only at the beginning of this study, while the involvement in student activities are collected at the end of the

first year of this research, this data needs to be interpreted with caution.

Continuing goals and commitments.

The participants' continuing goals and commitments were measured in the second questionnaire (Appendix B) using items from Pascarella and Terenzini's (1980) Scale 2 listed in Table 2 of this study. Also, within the final questionnaire (Appendix C), they were asked to indicate their highest degree aspirations. All but one of these items, assessing the importance of grades, were found to be highly significant differentiating factors among the three research groups (Table 13).

Although all three groups aspired to the level of at least a bachelor's degree, persisters averaged the highest degree goal, nearing that of the master's degree, while the stopouts results indicated the lowest level of degree objectives. Persisters also indicated a significantly greater level of importance in the goal of graduating from college, a higher level in confidence in choosing this particular institution, and a higher level of commitment in continuing to register and graduate from this institution.

Both persisters and withdrawals exhibited a high level of goal commitment towards a major field of study.

Table 13

Analysis of Variance Among Persisters, Stopouts, and Withdrawals and  
the Variables Assessing Continuing Goals and Commitments

Variable	Df	Group <sup>a</sup>			F-ratio	HSD <sup>b</sup>
		1	2	3		
Highest expected degree	2,162	2.90	2.27	2.64	6.19*	.35
Institutional and goal commitments (Scale V)						
importance of graduating college	2,153	4.56	3.96	3.95	6.23*	.48
confidence in selection	2,156	4.14	4.04	3.20	14.49*	.40
registration plans at current college	2,159	4.43	3.85	2.31	61.85*	.45
importance of graduating at current college	2,157	4.13	3.63	2.51	24.17*	.52
selection of major	2,157	4.68	4.20	4.68	3.65*	.37
importance of grades	2,159	4.47	4.15	4.41	1.26	-

Note: Scale constructed from Pascarella and Terenzini's (1980) research (see Table 2 in text). <sup>a</sup> Group mean for 1 = persisters, 2 = stopouts, 3 = withdrawals. <sup>b</sup> Tuckey's Honestly Significant Difference test for comparison among pairs of means. \*  $p < .001$  except for selection of major ( $p = .03$ ), and highest expected degree ( $p = .003$ ).



stopouts, however, whose initial commitments indicated that most of them are involved in professional programs of study, averaged a statistically lower degree of commitment towards a major than that of the other two research groups.

#### Impediments to Adult Persistence

Fourteen questions were asked in the TAP Research Questionnaire (Appendix B) assessing possible impediments to adult persistence, and were initially evaluated through a one-way analysis of variance (Table 14). Only five of these proved significant, with four of these at the minimal level set in this analysis ( $p \leq .05$ ). These items measured overall satisfaction with the college's welcome and assistance with integration into its institution, as well as with the following services: counseling, career development, basic skill development, and child care assistance. With all of these items, persisters demonstrated the statistically highest degree of satisfaction and the withdrawals the lowest amount of satisfaction among the three research groups. Similar results were found among the groups in the degree of satisfaction toward academic advising which approached significance ( $F = 2.66$ ,  $df = 2$  and  $156$ ,  $p = .07$ ).

Since there were 124 females participating in this study, most of whom were young enough to be parents of

Table 14

Analysis of Variance Among Persisters, Stopouts, and Withdrawals and  
the Variables Assessing Impediments to Adult Persistence

Variable	Df	Group <sup>a</sup>			F-ratio	HSD <sup>b</sup>
		1	2	3		
Acceptance of adults (Scale I)						
By faculty	2,157	3.78	3.79	3.61	.47	-
By institution	2,152	3.63	3.73	3.34	1.18	-
Availability of classes and entering services (Scale II)						
Classes	2,157	3.66	3.92	3.51	1.07	-
Financial assistance information	2,153	3.27	3.48	3.18	.58	-
Registration	2,159	3.66	3.50	3.33	1.08	-
Personal development/affiliation needs and services (Scale III)						
Institutional welcome and integration	2,158	3.69	3.44	3.13	3.87 <sup>*</sup>	.48
Opportunities for peer support	2,155	3.66	3.61	3.37	.96	-
Satisfaction with counseling services	2,153	3.58	3.22	3.00	7.14 <sup>**</sup>	.38
Satisfaction with academic advising	2,156	3.53	3.44	3.05	2.66	-
Satisfaction with career counseling	2,155	3.50	3.26	3.05	3.59 <sup>*</sup>	.39

Table 14, Continued

Variable	Df	1	2	3	F-ratio	HSD <sup>b</sup>
Availability of support services	2,153	3.40	3.77	3.10	2.49	-
Adult cocurricular needs	2,157	3.66	3.92	3.51	1.07	-
Returning adult needs and services (Scale III)						
Basic skills	2,154	3.67	3.45	3.24	3.48*	.39
Child care	2,141	2.99	2.91	2.68	3.65*	.28

Note. Scales constructed from Factor Analysis (see Table 15). <sup>a</sup>

Group mean for 1 = persisters, 2 = stopouts, 3 = withdrawals. <sup>b</sup>

Tuckey's Honesty Significant Difference test for comparison among

pairs of means. \*  $p = .03$ , \*\*  $p = .001$ .

young children, the results of the one question concerning the satisfaction the institution's response to their child care needs was more closely investigated. It was discovered that 24 individuals responded to this question with some level of dissatisfaction or satisfaction apart from the midpoint of this 5-point scale. Of these, 13 indicated that they had young children living with them. This simply may have indicated errors in the participants' response. However, since none of the other 11 were beyond the 36-50 age category, it may also mean that they were potential parents. Of the 24 respondents, five persisters, one stopout and seven withdrawals demonstrated a level of dissatisfaction below the midpoint of the scale. On the other end of this scale, however, nine persisters, one stopout, and no withdrawals indicated a positive level of satisfaction with the institution's response to their child care needs.

Since this particular area of investigation did not lend itself to the extensive work of Pascarella and Terenzini's (1980) aforestated studies, more rigor was needed in establishing the sets of questions for further discriminant analysis, and helping reduce the concern for multicollinearity of the items which will later be entered in sets of discriminant analysis.

### Results from the factor analysis.

Using principal-component analysis, the responses from these previously stated questions regarding impediments (based on a 5-point Likert scale of response) were factor analyzed (Table 15). Four factors were derived from these loadings and labeled for their similar characteristics: acceptance of adults, availability of classes and entering services, personal development /affiliation needs and services, and returning adult needs and services. The alpha reliabilities of the scales, ranging from .32 to .78, were judged at least minimally sufficient and thus, these scales were used in the further discriminant analysis. The factors covered are utilized to enter the items in the discriminant analysis, described later in this chapter, as weighted variables in a set.

An analysis of intercorrelations among the four scales indicated a range from .16 to .46 with a median correlation of .35 (Table 16). Scales I through III are moderately correlated with each other and thus are measuring some similar aspects of impediments to adult persistence. Scale IV demonstrates the most independent factor of this assessment, demonstrating only a minimal correlation with the needs and services evaluated in Scale III.

Table 15

Item Factor Loadings and Scores and Alpha Reliabilities for the  
Scales Measuring Impediments to Academic Persistence

Scale/Item	Loading	Factor Score	Scale Alpha
Scale I : Acceptance of adults			.64
by faculty	.87	.65	
by Institution	.53	.25	
Scale II : Availability of classes and entering services			.59
classes	.70	.42	
financial assistance information	.66	.38	
registration	.62	.35	
Scale III: Personal development/affiliation needs and services			.78
institutional welcome and integration	.80	.39	
opportunities for peer adult support	.72	.34	
satisfaction with counseling services	.65	.24	
satisfaction with academic advising	.53	.15	
satisfaction with career counseling	.48	.11	
availability of support services	.45	.26	
adult cocurricular needs	.37	.09	
Scale IV : Returning adult needs and services			.32
basic skills	.79	.68	
child care	.44	.30	

Table 16

Pearson Correlations Among the Four Scales Measuring Impediments to Academic Persistence

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Scales	Scales			
	I	II	III	IV
I	1.00	.39	.41	.16
II	.39	1.00	.46	.16
III	.41	.46	1.00	.31
IV	.16	.16	.31	1.00

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Note: Scale I = Acceptance of adults, Scale II = Availability of classes and entering services, Scale III = Personal development/affiliation needs and services, and Scale IV = Returning adult needs and services.

### Investigating the Probability of Group Membership

As stated in Chapter III, stepwise discriminant analyses based upon the value of Wilk's Lambda was utilized in order to ascertain which variables and sets of variables were associated with the three groups of students studied in the research: persisters, stopouts, and withdrawals. These variables in turn were utilized to develop a predictive scale for academic persistence and to further subject the hypotheses developed for this investigation to the rigors of analyses. A minimum  $F$  to enter the equation was established at 1.0, and a minimum tolerance level was set at .001.

The first analysis assesses pre-entry attributes and entering goals and commitments, as well as certain individual items linked to Hypotheses II, III and IV. The second, third and fourth sets of analyses investigates these sets of data associated with Hypotheses II through IV and the most significant sets of these variables when all are combined. The final set of discriminant analysis combined the most significant sets of all of these analyses to obtain the best combined predictor of academic persistence, stopout and withdrawal. Controlling for the influence of a short-term commitment to continue enrolling through the course of this study, multivariate analyses of



covariance was also performed on the combination of integration/commitment and impediment scales.

### Background Variables

Based upon Pascarella and Terenzini's study (1980) and adult student considerations, a stepwise discriminant analysis was completed on individual background items discussed in the previous section of this chapter. Included in this analysis were all items measuring the pre-entry attributes of the participants (Table 10). Dependents were included as a single item of assessment, combining each of the four age levels assessed in this study. Except for the variable measuring short-term commitment and clarification of this and the participant's baccalaureate goal and institutional commitment, the items assessing entering goals and commitments (Table 11) were also included in this analysis. In addition, the items measuring the participant's first year GPA, involvement in college activities and highest degree aspirations (Tables 12 and 13 respectively) were also included. Nine of the 20 variables assessed entered the equation (Table 17).

With an F-ratio of 11.20, the goal commitment of completing a bachelor's degree at the institution entered at the beginning of this study was found to be the most significant discriminating factor among these background

Table 17

Stepwise Discriminant Analysis of Significant Background Variables

Step Variable	Persisters		Stopouts		Withdrawals		F ratio	Standardized Discriminant weight	
	M	SD	M	SD	M	SD		1	2
1. Baccalaureate goal/ institutional commitment	1.90	.13	1.91	.30	1.62	.51	11.20	.75	.24
2. Major	1.63	.49	1.91	.30	2.00	.00	7.18	-.38	-.03
3. Prior college credit	4.37	.90	3.73	1.19	4.54	.66	5.84	.33	-.64
4. Choice	3.82	.38	3.73	.47	3.46	.52	4.79	.33	.13
5. Employment	3.23	1.50	4.18	.60	4.00	1.15	4.11	-.29	.58
6. Family's college education	1.75	.43	1.91	.30	1.69	.48	3.67	.07	.61
7. Class load	1.21	.41	1.18	.40	1.08	.28	3.31	-.29	.70
8. Household income	3.12	1.32	3.55	1.29	3.15	.90	3.07	-.28	.53
9. College GPA	3.39	.67	3.09	.83	3.23	1.01	2.87	.21	-.36

Note. 165 cases are processed, 97 are used in the analysis; persisters (N = 67), stopouts (N = 15), withdrawals (N = 15). Prior to any function removed: df = 18, chi square = 46.93,  $p \leq .001$ .

variables. As in the aforestated preliminary analysis of the data, the persisters were found to be the most committed to this goal, and the withdrawals the least committed.

The participant's prior college credit, level of employment at the beginning of this study, family's college education, and household income all entered the equation as pre-entry attributes. However, since only 97 cases were selected for this analysis, a slightly different relationship occurred among the means. From the sample used, withdrawals were still found to have the largest number of prior credit, and persisters demonstrated the least number of hours of employment. As discovered earlier in this chapter, stopouts tended to have the highest level of household income and greatest likelihood of other family members having attended college. However, with the participants selected for this analyses, these differences were exaggerated towards a significant difference from the other two groups, both of whom shared a more similar and lower mean.

Also entering the equation were other factors related to assessing entering goals and commitments: the type of major selected, the measurement of the participant's choice in selecting this college, and the class load or status of attendance. Upon further investigation, this

variable demonstrated a noted relationship to the hours of employment which also enters this equation. The greatest percentage of full-time participants in this study were found among persisters. However, when compared to the two other research groups, these full-time persisters also exhibited the lowest percentage of employment averaging 30 or more hours per week, when compared to stopouts and withdrawals (3 out of 22, or 14 percent for persisters; 3 out of 3, or 100 percent for stopouts; and 3 out of 6, or 50 percent for withdrawals). Approximately 72 percent of all the part-time participants from all research groups were found to be employed 30 or more hours per week.

Again, as in the results of the ANOVAs, the persisters selected demonstrated a greater degree of liberal arts majors than the other two groups, as well as a greater percentage of individuals who enrolled into the college of their first choice. Concerning the latter item, withdrawals again exhibited the lowest degree of selection concerning their first choice institution among the three research groups. Also, withdrawals again demonstrated a lower percentage of full-time attendance when compared to persisters, while persisters composed the greatest degree of full-time enrolled participants.

### Commitment/Integration Scales

The scales measuring institutional and goal commitments, faculty concern for student development and academic and intellectual development were each correlated with academic persistence; with the former producing a very large F-ratio of 23.04 (Table 18).

Table 18

#### Stepwise Discriminant Analysis of Significant Commitment/Integration Scale

Step Variable	Persisters		Stopouts		Withdrawals		F ratio	Standardized Discriminant weight	
	M	SD	M	SD	M	SD		Func. 1	Func. 2
	1. Scale V: <sup>a</sup> Institutional/ goal commitments	26.49	2.85	23.50	3.65	21.33		2.99	23.04
2. Scale III: Faculty concern for student development	10.08	3.54	18.67	2.59	16.87	3.48	12.04	-.50	1.11
3. Scale IV: Academic/ intellectual development	26.89	4.06	25.22	5.08	23.00	4.98	8.37	.32	-.19

Note. 165 cases are processed, 118 are used in the analysis; persisters (N = 85), STOPOUTS (n = 18), withdrawals (N = 15). Prior to any function removed: df = 6, chi square = 45.76, p = < .001. <sup>a</sup> Scales derived from Pascarella and Terenzini's (1980) research, see Table 2 in text.

Similar to the previous results investigating individual items, persisters were found to demonstrate stronger goal commitments, as well as a higher degree of satisfaction with their college. Persisters were found in this discriminant analysis to demonstrate the highest level of satisfaction with their formal academic and intellectual development and withdrawals, the lowest level of satisfaction.

Although the scale measuring outside of class interpersonal contact did not enter this equation, the one assessing the faculty's concern for their students' development was found to be a significant factor in this analysis. Although none of the items from this latter scale were found to be significant in the ANOVAs, the pattern of relationship among the research groups was similar for both these ANOVAs and this discriminant analysis. The stopouts exhibited a slightly greater degree of satisfaction with faculty concern for student development than the persisters, with both groups exceeding the satisfaction level of the withdrawals.

As was previously reported in the ANOVAs, peer-group interactions did not appear as significant factors in measuring adult decisions of academic persistence. This set of items did not enter the equation as a significant

differentiating factor among the three nontraditional age research groups.

### Impediment Scales

Of the four impediment scales (Table 19), only Scale IV which measured the needs and services particular to that of the adult student -i.e., child care needs and basic skill development- entered the final equation. Thus, only one canonical discriminant function remained in the later predictive analysis.

Table 19

### Stepwise Discriminant Analysis of Significant Impediment Scales

Step Variable							F	Standardized Discriminant weight Func.
	Persisters		Stopouts		Withdrawals			
	M	SD	M	SD	M	SD		
1. Scale IV: <sup>a</sup> Returning adult needs/services	3.12	.45	3.14	.35	2.73	.58	4.24	1.00

Note: 165 cases are processed, 112 are used in the analysis; persisters (N = 82), stopouts (N = 17), withdrawals (N = 13). Prior to any function removed: df = 2, chi square = 8.17,  $pp = .02$ .

<sup>a</sup> Scale derived from measurements of impediments on adult persistence, see Table 15 in text.

Differing slightly from the ANOVAs which reported on these two items individually, both persisters and stopouts demonstrated a similar degree of satisfaction with these services. However, like the previous analyses of variance, withdrawals demonstrated the least amount of satisfaction with their institution's service in these areas of adult needs. Again, the importance of the child care assistance item in this analysis may have resulted from the fact that over one quarter of all the participants indicated that they had children under the age of 13 relying on their support.

It was also noted that of the remaining three scales that did not enter this equation, Scale III (measuring personal development and affiliation needs and services) had the largest F-ratio to enter this equation ( $F = .93$ ). As was previously noted, of the other scales in this measurement, Scale IV had the highest degree of correlations ( $r = 7.91$ ) with Scale III.

#### Combined Analyses

In order to develop the best set of predictors among the three groups of academic persistence, several combinations of analyses were performed on items and scales.



Integration/commitment and impediment scales.

The nine scales assessed in Tables 18 and 19 were combined in an unordered stepwise discriminant analysis. The results were similar to those occurring in the separate sets of analyses (Table 20). However, the impediment Scale III did demonstrate a stronger F-ratio when combined with the integration/commitment scales ( $F = 7.91$ ).

Also, in order to add further rigor to the importance of these two sets of scales, an additional analysis was pursued. As stated in an earlier section of this chapter, one quarter of the withdrawals indicated that they left college because they already had achieved their goal. Controlling for the participant's plan in the beginning of this research to continue enrolling in classes throughout the length of the study (Background Information Questionnaire, Question Q, Appendix A), a multivariate analysis of covariance was performed on the two sets of scales (Table 21).

The results of this analysis on these scales yielded an overall multivariate F of 2.07 with 18 and 188 degrees of freedom ( $p = < .01$ ). Of the four significant scales in Table 21, only the integration scale measuring institutional and goal commitments yielded a significant F-ratio, demonstrating its ability to differentiate among the three research groups of academic persistence.

Table 20

Stepwise Discriminant Analysis of Significant Commitment/Integration  
and Impediment Scales

Step Variable	Persisters		Stopouts		Withdrawals		F ratio	Standardized Discriminant weight Func.	
	M	SD	M	SD	M	SD		1	2
	1. Scale V: Institutional/goal commitments	26.44	2.87	23.60	3.89	21.15		3.13	19.76
2. Scale III: Faculty concern for student development	17.89	3.47	18.80	2.76	16.92	3.62	10.43	-.50	-.92
3. Impediment Scale III: Returning adult needs/services	3.13	.44	3.10	.30	2.73	.58	7.91	.32	.61
4. Scale IV: Academic/ Intellectual development	26.82	4.03	24.80	5.41	23.23	5.31	6.25	.26	-.68

Note. 165 cases were processed; 107 were used in the analysis; persisters (N = 79), stopouts (N = 15), withdrawals (N = 13). Prior to any function removed: df = 8, chi square = 45.32, p = < .001. <sup>a</sup> Scales derived from Pascarella and Terenzini's (1980) research, see Table 2 in text. Impediment scale derived from measurements of impediments on adult persistence, see Table 15 in text.

Table 21

Multivariate Analysis of Covariance of Integration/Commitment and  
Impediment Scales when Plans for Continued Study are Controlled

Variable	Univariate F-ratio	F-probability
Institutional/goal commitments	13.93	<.001
Faculty concern for student development	.69	.50
Academic/intellectual development	2.76	.07
Interactions with faculty	1.21	.30
Peer interactions	.76	.47
Acceptance of adults	.15	.86
Availability of classes/entering services	.07	.94
Personal development, affiliation needs and services	1.48	.23
Returning adult needs/services	2.52	.09

Note. df = 2,102

However, two of the remaining three scales in this Table -the Integration Scale measuring academic and intellectual development, and the Impediment Scale measuring returning adult needs and services- did approach significance. Thus, these scales indicated that they may measure academic persistence even with the addition of this control variable. They merit consideration in further studies of adult student persistence.

Combination of significant variables.

In order to explore the best set of predictors for discriminating among the research groups, the integration/commitment scales of Table 18, and the impediment Scale IV from Table 19 were combined with the background variables from Table 17. Although a slightly different grouping of participants was produced because of missing data in this combined analysis, a similar pattern of relationships was demonstrated among the significant variables entering the equation (Table 22).

Four of the 7 significant variables entering the equation were measurements of initial goals and commitments: the goal commitment of completing a baccalaureate degree at the stated institution, the type of major selected, the measurement of the participant's choice in selecting this stated college, and the class load or status of attendance. In addition, two pre-entry

Table 22

Stepwise Discriminant Analysis of Combined Significant Background Variables, Integration/Commitment and Impediment Scales

Step Variable	Persisters		Stopouts		Withdrawals		F ratio	Standardized Discriminant weight	
	M	SD	M	SD	M	SD		Func. 1	Func. 2
1. Baccalaureate goal/institutional commitment	1.98	.13	2.00	.00	1.77	.44	5.97	.54	.37
2. Scale V: <sup>a</sup> Institutional/goal commitments	20.77	1.72	20.64	2.20	19.15	1.07	5.30	.51	.24
3. Major	1.68	.47	1.91	.30	2.00	.00	4.65	-.41	.17
4. Prior college credit	4.16	1.19	3.27	1.62	4.23	1.17	4.01	.19	-.60
5. Choice	3.86	.40	3.73	.47	3.46	.52	3.65	.39	-.20
6. Employment	3.30	1.44	4.27	.47	4.00	1.08	3.26	-.09	.74
7. Class load	1.25	.44	1.27	.47	1.07	.28	2.95	-.07	.52

Note. 165 cases are processed; 96 are used in the analysis; persisters (N = 69), stopouts (N = 13), withdrawals (N = 14). Prior to any function removed: df = 14, chi square = 37.77, p = < .001. <sup>a</sup> Scale derived from Pascarella and Terenzini's (1980) research, see Table 2 in text.

attributes -prior college credit, and level of employment- entered this equation. Of the four scales assessed, only Scale V measuring continuing institutional and goal commitments entered this final scale. Thus, of those found significant among the 13 variables investigated in this discriminant analysis, two were associated with pre-entry attributes and the remaining five were related to both entering and continuing goals and commitments.

#### Classification Analyses

Table 23 summarizes and compares the classification analysis performed on the significant discriminating variables presented in Tables 17, 18, 19, 20, and 22. The overall percent of cases correctly classified ranges from slightly higher than chance (i.e., 3.33 percent correct, based on 3 groups), to approximately 70 percent.

The analyses of background variables yielded the second highest percentage of cases correctly classified. Of this overall 68.04 percent, the two greatest prediction percentages were from the persisters and stopouts. Less than 50 percent of the withdrawals can be correctly predicted to be in this criteria group from the group controls.

Although the integration scales resulted in a slightly lower overall percentage of correct predictions,

Table 23

Comparison of Classification Analysis of Tables 17, 18, 19, 20 and 22

Table/actual group	Predicted group membership		
	1	2	3
<b>Table 17 (background variables)</b>			
1 (N = 67)	70.1% (47)	25.4% (17)	4.5% (4)
2 (N = 15)	6.7% (1)	80.0% (12)	13.3% (2)
3 (N = 15)	13.3% (2)	40.0% (6)	46.7% (7)
		68.04% <sup>a</sup>	
<b>Table 18 (integration/commitment scales)</b>			
1 (N = 87)	75.9% (66)	13.8% (12)	10.3% (9)
2 (N = 20)	35.0% (7)	25.0% (5)	40.0% (8)
3 (N = 15)	13.3% (2)	26.7% (4)	60.0% (9)
		65.57% <sup>a</sup>	
<b>Table 19 (impediment scales)</b>			
1 (N = 86)	30.2% (26)	59.3% (51)	10.5% (9)
2 (N = 20)	40.0% (8)	50.0% (10)	10.0% (2)
3 (N = 14)	30.0% (6)	40.0% (8)	30.0% (6)
		34.17% <sup>a</sup>	
<b>Table 20 (combined integration/commitment and impediment scales)</b>			
1 (N = 81)	71.6% (58)	19.8% (16)	8.6% (7)
2 (N = 18)	33.3% (6)	33.3% (6)	33.3% (6)
3 (N = 14)	7.1% (1)	28.6% (4)	64.3% (9)
		64.60% <sup>a</sup>	
<b>Table 22 (background variables and combined integration/commitment and impediment scales)</b>			
1 (N = 69)	68.1% (47)	20.3% (14)	11.6% (8)
2 (N = 13)	7.7% (1)	76.9% (10)	15.4% (2)
3 (N = 14)	14.3% (2)	14.3% (2)	71.4% (10)
		69.79% <sup>a</sup>	

<sup>a</sup> Overall percentage of cases correctly classified.

the stopout group was accurately placed in 75 percent of the cases. As indicated in Table 19, the results from assessing the impediment scales yielded an overall percentage of cases correctly classified only slightly above chance. The most accurate of these was the result of correctly classifying 50 percent of the stopouts.

Although Tables 18 and 19 did not appear to yield any high levels of accurate classification predictions, more promising results across the three criteria groups were displayed when the significant variables were included in combination with each other. The first of these -the combined integration and impediment scales- resulted in a prediction percentage of 64.60 percent. Although this was slightly lower than the previously higher level of prediction when assessing the integration scales by themselves, this combined analysis resulted in a slightly more balanced rate of prediction among the three groups; i.e., the stopouts went from 25.0 percent to 33.3 percent (at least equaling the rate of chance).

However, when the background variables from Table 17 were added to the above two tables, the overall percentage was increased to nearly 70 percent; a moderate improvement in correct classification. The range of correct predictions based on these discriminating variables was



also more evenly distributed, resulting in a 68.1 percent prediction rate for persisters, a 76.9 percent rate for stopouts, and a 71.4 percent rate for withdrawals. All of these are well over the rate of prediction based on chance as discussed earlier in this section.

#### Assessing the Research Hypotheses

Many types and levels of analyses were performed on this research data to assess the accuracy of the five stated hypotheses. These analyses resulted in certain conclusions.

Assessing the 12 variables associated with pre-entry attributes individually, only employment and prior college credit approached significance. These two items also entered into the final equation (Table 22) of combined assessment as discriminating items among the research groups. Thus, to a limited extent, there was support to reject Hypothesis 1 if these two items are considered; i.e. there was a significant relationship between a participant's level of employment, prior college credit, and the dependent variables of same persister, same stopout, and withdrawal.

The largest degree of significant results throughout this research supports the disproving of Hypothesis 2; i.e., there was a significant relationship between a

participant's institutional and goal commitments and the dependent variables associated with academic persistence. With 5 of the 7 significant variables entering the analyses reported in Table 22 supporting this conclusion, both entering and continuing commitments were found to be significant differentiating factors. In regard to the former, the participant's intention of completing a baccalaureate degree at the college entered at the beginning of this study and the types of major selected demonstrated a consistent level of significance throughout levels and sets of analyses. To a lesser degree, the participant's choice in selecting his or her stated college, as well as the class load or status of attendance also proved to be significant variables in this study.

In regard to continuing goals and commitments, Pascarella and Terenzini's (1980) Scale V was found to be constructed with highly significant items of assessment. The relationship between this scale and persistence remained significant when multivariate analyses of covariance was performed, (Table 21) controlling for the early plans of the participants to continue enrolling throughout the study.

A moderate degree of evidence was found in this study to reject Hypothesis 3; i.e., there was a significant

relationship between certain variables measuring academic integration and the dependent variable categories of same persister, same stopout, and withdrawal. Although not found to reach significance when studied individually, college GPA did enter the discriminant equation when measuring background variables (Table 17).

The items found in Pascarella and Terenzini's (1980) Scale IV also proved to be a significant formal assessment of measuring academic integration as it entered the equation of several sets of discriminant analyses (Table 18 and 20), and approached significance in the multivariate analysis of covariance previously described (Table 21). Although demonstrating some variability in significance, the informal assessment of integration -especially as it related to family concern for student development in Pascarella and Terenzini's (1980) Scale III- entered the equation of several sets of discriminant analyses (Tables 18 and 20). However, none of the items measuring Hypothesis 3 entered the final equation demonstrating the best set of predictor variables (Table 22).

There was some minimal support found for the rejection of Hypothesis 5 i.e., there was a tendency for one area of impediments to influence adult education and

the dependent variable categories of academic persistence. Although several items assessed individually which were related to personal development/affiliation needs and services were found to be significant, only the scale of impediments measuring returning adult student needs and services (specifically child care and basic skill developmental needs) entered the equation of several discriminant analyses performed. However, since this factor remained significant throughout the several combinations of these analyses and even approached significance in the aforestated multivariate analysis of covariance, there was some support for rejecting at least a focused segment of this hypothesis.

Very few factors were found significant when measuring Hypothesis 4 entered individually or within sets of discriminant analyses. This supports the aforestated initial analysis concerning the participant's ranking of personal/social and recreational development as the least important aspects of college life. The discovery that a much higher level of involvement in leisure activities outside the college was shared by the constituents of all three research groups helped to further explain these results. Neither the formal measurement of cocurricular involvement nor the integration scale measuring the informal system of social integration proved significant

in any of the discriminant runs of analyses. Thus, within the limitations of this study, Hypothesis 4 was proved: that is, the data from this study indicates that there were no significant relationships among the independent variables measuring social integration and the dependent variable categories of same persister, same stopout, and withdrawal.

#### Chapter Summary

The five original entering groups were divided into three sets for statistical investigation: persisters, stopouts and withdrawals. The participants were largely found to be between the ages of 25-35 years old. Over 75 percent of the participants in this study were women, with 53 percent of these Caucasians who were pursuing their education on a part-time basis. Fifty-five percent of all the participants indicated that they were unmarried or separated. With only 8 percent of the participants entering as first time college students, most had attended another college not more than 10 years prior to the beginning of this study.

In the early stage of this study, the participants rated academic and intellectual development as the most important aspect of college life; and personal, social, and recreational development as the least important.

Support for these findings and some of the variables measuring the research hypotheses was obtained in the initial assessment of analysis of variance, with more rigor added through discriminant analysis and multiple analysis of covariance.

There was moderate support for rejecting at least aspects of Hypothesis 1. The results of this study indicate that the pre-entry variables of employment and prior college credit did statistically differentiate and discriminate among the categories of persister, stopout, and withdrawal.

The strongest support for rejecting any of the five hypotheses was associated with the variables measuring the institutional and goal commitments of Hypothesis 2. Factors associated with completing a baccalaureate degree, the type of major, class load, the choice within the college selection process, and the measurement of continuing commitments lent support to discriminating among the groups of academic persistence.

Whereas moderate support existed for rejecting Hypothesis 3, which posits that a relationship exists between academic integration and academic persistence; no substantial support was found for the importance of social integration in an adult students retention in college.

Thus, Hypothesis 4 was supported in its null form, i.e., there was no significant relationship between variables measuring social integration and academic persistence.

The items testing Hypothesis 5 - concerned with impediments to adult persisters - were first subject to various tests of factor analyses to develop research scales. Analyses demonstrated limited significance emphasizing the adult student's need for child care and basic skill development as factors affecting academic persistence. Thus weak to moderate support was discovered through these factors to reject Hypothesis 5.

Chapter V contains a discussion of the implications of these results, recommendations for modifying Tinto's (1975, 1987) model for studying adult students will be presented, as well as suggestions for further investigation of academic persistence among nontraditional age students.

## CHAPTER V

## SUMMARY AND DISCUSSION

## Purpose

This study investigated factors associated with the academic persistence of nontraditional age college students twenty-five years of age and older. To sharpen this investigation, the use of Tinto's model (1975, 1987) of institutional departure -expanded with research concerning adult student needs and possible impediments to their further education- was utilized as a framework for this study. Entering adult student participants were obtained from four Chicago area private colleges and universities.

Although many studies of academic persistence among traditional age students have been conducted (Allen & Nelson, 1989; Astin, 1975; Pascarella & Terenzini, 1977, 1978, 1979, 1980; Stoecker, Pascarella & Wolfe, 1988; Terenzini & Pascarella, 1977, 1984; and others) similar published research of older adult students are less common. Since the enrollment of nontraditional age students has now become commonplace in most colleges and universities, this study provided useful insights into the factors affecting the academic persistence of adult students.



### Research Objectives

The research objectives for this study were as follows:

1. To conduct a longitudinal study of factors affecting the undergraduate students enrolled in Chicago area private four-year senior colleges and universities.
2. To assess the explanatory power of Tinto's model of student departure on the academic persistence of nontraditional age students.

### Research Hypotheses

Utilizing these objectives, five hypotheses stated in null form, were utilized in this study.

1. There are no significant relationships among the independent variables measuring pre-entry attributes and the dependent variables of same persister, same stopout, and withdrawal.
2. There are no significant relationships between the independent variables measuring goals and commitments and the dependent variables of same persister, same stopout, and withdrawal.
3. There are no significant relationships among the independent variables measuring academic integration and the dependent variables of same persister, same stopout, and withdrawal.

4. There are no significant relationships among the independent variables measuring social integration and the dependent variables of same persister, same stopout and withdrawal.

5. There are no significant relationships among the independent variables measuring impediments to adult persistence and the dependent variables of same persister, same stopout, and withdrawal.

#### Method

The research for this study on nontraditional age college students was gathered over a 16-month period during the mid-1980's from four Chicago-area private institutions. These colleges and universities ranged in enrollment from 625 to over 8,500 students.

Beginning with a population of 1,402 adult students, 165 of them were successfully tracked during the duration of this research. Each participant was then mailed information on the study, a consent form and an initial questionnaire concerning background information.

A second questionnaire, the TAP Research Questionnaire, was mailed in the next Spring term in order to assess factors related to the student's goal and institutional commitments, integration into college, and possible impediments to this integration. A final

questionnaire assessing enrollment status was completed during the Fall, 1985 term to identify each participant as being a member of the three research groups: persister, stopout, and withdrawal.

Although originally subdivided into categories of persisters, the small number of respondents continuing through the course of this study necessitated a focus on only on persisters continuing to remain throughout this study at the institution they entered at the start of this research. Likewise, stopouts referred only to those individuals who indicated their desire to return to the institution they entered at the beginning of this study. Withdrawals included all those participants who were continuing their studies at other institutions; who stopped out of their education, but planned to resume their studies at another institution; and those who had dropped out of the college they entered at the beginning of this study, but with no further plans to continue their education at any institution.

The items from these questionnaires were utilized to obtain an overview and description of the population and each of the research groups, as well as assess the five research hypotheses. Most of the factors used to test Hypotheses 1, 2, 3, and 4 were derived from the work of Pascarella and Terenzini (1980). The factors which were

tested in Hypothesis 5, were constructed from a more recent review of the needs of adult students.

Employing frequency distributions and tables, an overview of 82 items obtained from the three questionnaires were analyzed. One-way analyses of variance (ANOVA) and the HSD test were carried out for all 82 items to initially determine the significance of all five hypotheses. Since the items for Hypothesis 5 were novel, they were factor analyzed. Alpha reliabilities, and a Pearson Correlation coefficient were also calculated for the four scales. The alpha reliabilities were judged at least minimally sufficient to have confidence in the adequacy of the scales.

In addition, using the survey items, five sets of discriminant analyses were performed. The first of these combinations assessed the impact of individual background variables, initial goals and commitments, the academic year GPA and involvement in campus activities, and the participant's highest degree goals. The second, third, and fourth sets of analyses investigated several different sets of variables in scales, associated with Hypotheses 1, 2, 3, and 4. A final set combined the most significant discriminant items from the previously stated four

analyses to obtain the best predictors of those who persist, stopout or withdraw.

After reviewing the initial results of this study, the significance of these commitment/integration and impediment scales were tested through multivariate analyses of covariance, controlling the participants initial educational plan as stated in the Background Information Questionnaire. Classification analysis was performed on all these discriminant analyses to obtain the percentage of cases correctly classified.

## Results

The results of the great amount of data gathered through this research were divided into four areas of study: an overview of the population, research group, and supportive data; an analyses of the individual items measuring the constructs of the model directing this study; identification of the variables which provided the best discrimination among the three research groups; and an assessment of the research hypotheses based on the results of these analyses.

### Overview of Sample and Results

The five original entering groups are divided into three sets of statistical investigation: persisters, stopouts and withdrawals. Except for the results from one

institution, the representations from each of these groups were similar among the participating colleges. With only eight percent of the participants entering as first semester freshmen, the most prominent reason given by the participants for leaving their former institution was completion of a degree or academic goal. Although stopouts, as a group, have attended their previous colleges more recently than the other two research groups, the average length of time for all three groups since matriculating at their former institution was between one and five years prior to the beginning of this study. The majority of both persisters and stopouts rank their academic and intellectual development as the most important aspect of college life, while a majority of withdrawals rank career development as highest among those statements given.

In terms of statements clarifying their enrollment status, persisters noted that among other factors, convenient location of classes, and high level of satisfaction with their institution and particular academic program were reasons to remain in college. These factors were also found to be reasons for stopouts to wish to return to the college they entered when beginning this study. Although the dissatisfaction with these factors were associated with several students who withdrew, their

most frequently stated reason was based on the achievement of their educational goals.

Although both persisters and withdrawals listed financial reasons for remaining or leaving the institution, only one stopout identified financial reasons for wishing to continue at this institution in the future. A change in major during the course of the study was noted by only 5 of the 42 withdrawals.

#### Assessment of Construct Items

Analyses of variance demonstrated that only 2 of the 15 pre-entry items assessed even approached the minimal level of significance set in this study ( $p \leq .05$ ): amount of employment, and previous college credit. Regarding the former, persisters were found to work the least number of hours, whereas the withdrawals were employed the greatest amount of time among these research groups. While withdrawals entered this study with the greatest number of prior credits, the persisters indicated the least amount of hours enrolled at prior institutions. Again, these differences were not found at the level of significance set for this analyses ( $p \leq .05$ ).

However, a further clarification of the sample was made during the investigation of these attributes. With approximately 80 percent of the sample population enrolled

as part-time students, the largest group of participants ranged in age from 25 through 35 years of age. Also, the majority of those participating in the study were found to be Caucasian women.

Twenty participants, twelve of whom were withdrawals, revealed during the course of this study that they already obtained at least a bachelor's degree from another institution prior to this study. Although this information was considered outside the course of this research, it did indicate that these, and perhaps other participants, may have enrolled only for short-term goals completing a certain segment of course work, but not a degree.

The results of studying items associated with entering goals and commitments indicated that withdrawals, as a group, were less likely to enter their first choice college, had a greater tendency to be part-time students, averaged a lower level of interest in continuing enrollment throughout this study, and were less likely to plan to complete a baccalaureate degree at their stated institution. They also displayed a lower level of confidence in selecting this institution. All but choice and class load were found to be significant. A significantly greater number of withdrawals, and especially stopouts, were enrolled in professional programs when compared to



persisters who demonstrated a greater interest in majoring in the liberal arts.

Although persisters demonstrated a higher GPA, it was not found to be statistically significant. However, persisters did demonstrate a significantly greater degree of satisfaction with items assessing their intellectual development, academic experience, and academic performance. All but one of the items measuring interactions with faculty exhibited a statistically lower degree of satisfaction among withdrawals. Although differences were found among the individual items measuring faculty concern for student development, none proved statistically significant factors differentiating persisters, stopouts, and withdrawals.

Involvement in college-sponsored student activities averaged less than one hour per week among all the participants of this study, and did not prove to be a statistically significant factor differentiating the three research groups. Although informal adult peer contact averaged a slightly greater amount of time, it was less than one hour per week and also did not prove to be a significant factor. Of the seven items measuring informal peer-group interaction, only two measuring satisfaction with student friendships, and how such satisfaction

positively influenced the participant's level of intellectual growth, proved to be significant. Withdrawals demonstrated the least amount of satisfaction with these two variables.

With the exception of the importance of grades, the other five items quantifying continuing goal and institutional commitments, which were measured later in this study, also proved to be significant. Persisters demonstrated a greater importance of graduating from college in general, and a greater degree of confidence in selecting this particular institution, as well as a higher degree of interest in registering there for the next semester and graduating for this institution. Stopouts indicated a significantly lower degree of clarity in the selection of this major than both persisters and withdrawals. Persisters exhibited the significantly highest level of degree expectation among the three research groups, nearing that of the master's degree, while the stopouts averaged the lowest degree aspirations.

Only five of the fourteen items measuring impediments to adult persistence proved significant. Persisters demonstrated the highest degree and withdrawals the least degree of satisfaction with their institution's welcome and assistance with integration into programs and services, and satisfaction with counseling services,

career exploration and development, basic skill development, and assistance with their child care needs. The fourteen items from these potential impediments to adult persistence were further factor analyzed into four scales for further analyses in this study.

#### Discriminant Factors Among the Research Groups

The variables related to the constructs of the model used in this study, and thus the five research hypotheses, were subjected to five combinations of discriminant analyses. In assessing the effects of individual background variables, nine items entered the equation as significant factors discriminating among the three research groups: baccalaureate goal and institutional commitment, major, prior college credit, choice, employment, family's college education, class load, household income, and college GPA.

Discriminant analyses was performed on the five scales or sets of items derived from Pascarella and Terenzini's (1980) work, as well as the four scales measuring adult impediments to persistence developed in this study. Scales measuring institutional and goal commitments, faculty concern for student development, academic and intellectual development, and returning adult needs and services entered into these equations.

At several points throughout this study, it was noted that the intent to continue enrolling throughout this study may be a strong factor in influencing the outcome of this study. Therefore, a multivariate analyses of covariance was also performed on these scales, controlling for this variable of intent. The scale measuring institutional and goal commitments remained a highly significant variable ( $F = 13.93$ ,  $df = 2$  and  $102$ ,  $p < .001$ ). The scales measuring academic and intellectual development ( $p = .07$ ) and returning adult needs and services ( $p = .09$ ) also approached significance.

A discriminant analysis combining the individual and sets of items that demonstrated significance in these previously stated four assessments was also performed. The individual items measuring baccalaureate goal and institutional commitment, continuing institutional/goal commitments, major, prior college credit, choice, employment and class load entered this final equation as significant factors with the scale measuring institutional and goal commitments.

The results of the classification analysis performed on each of these sets of factors indicates that the highest overall percentage of cases correctly classified, nearly 70 percent, occurred in this latter combination of significant individual background variables impediment

scale and integration and commitment scales. The range of correct predictions is also the most evenly distributed among the five sets of analyses, resulting in approximately a 68 percent prediction rate for persisters, a 71 percent rate for withdrawals, and nearly a 77 percent rate for stopouts.

#### Assessment of Hypotheses

The greatest degree of support throughout this study for rejecting one of the five research hypotheses, emerged from the various analyses performed on items measuring the relationship between goal and institutional commitments and academic persistence. Items measuring both initial and continuing goals and commitments were found to be significant measurements when assessed both through analysis of variance and various sets of discriminant analyses. The scale measuring goals and commitments was also found to have a high probability of significance even when controlling for the initial intent of pursuing course work at the entering institution throughout this study. Thus, Hypothesis 2 was rejected in its null form.

There was also a moderate degree of evidence from this study that indicated that there was a relationship between certain factors measuring academic integration and academic persistence. Seven items from the scales

measuring the formal and informal aspects of this construct were found to be significant when measured by analysis of variance. Although these variables did not reach a level of significance to be included in the final discriminant analysis, measurements of the participant's first year GPA, the scale measuring faculty concern for student development, and the scale measuring academic and intellectual development were found to be significant measurements within several of the analyses. The latter scale also approached significance in the multivariate analyses of covariance controlling for initial intent. Thus, there was some evidence, albeit weaker than that of the previously stated hypothesis, for rejecting Hypothesis 3.

Although there was not enough evidence emerging for this study to reject Hypothesis 1 as stated in its entirety, aspects of this hypotheses have been disproven. Both the level of employment and the amount of prior college credit emerged as significant items within the final discriminant analysis performed. Thus, there was a significant relationship existing for these two measurements of pre-entry attributes and academic persistence.

The items from the scale measuring adult student needs and services, as formulated to assess Hypothesis 5,

were found to be significant when measured by analyses of variance. In particular, these variables measured satisfaction with child care and basic skill development. When combined with other significant scales, this scale also entered a discriminant analysis equation. It also approached significance in the multivariate analyses of covariance which controlled for intent. Therefore, there is a significant relationship between the scale measuring adult needs and services and academic persistence.

There is little proof available in this study to disprove Hypothesis 4. Neither the involvement in college sponsored cocurricular activities, nor five of the seven items measuring peer-group interactions proved significant when assessed individually through analyses of variance. No significant differences were found among the results of the three research groups when adult peer contact and outside leisure activities are evaluated. The scale of peer-group interactions when entered both with other integration and commitment scales, and in combination with these and the independent scales did not prove significant. Thus, Hypothesis 4, stating that there is no significant difference occurring among variables measuring social integration and academic persistence, was supported in the results of this study.

### Limitations

Several factors contributed to limitations in this study. These can be attributed to problems inherent in studies conducted at smaller private institutions, and with nontraditional age students. It was difficult to begin this study, since the distribution of the first questionnaire relied upon the limited resources available at four private institutions occurring at the start of their academic year. Although it was the original intent of this researcher to send the initial acceptance forms and questionnaires prior to the start of fall, this lack of institutional assistance delayed the mailing until well into the first term. Thus, aspects measuring initial goals and commitments were already influenced by several weeks of college attendance.

Also, since the directory information of students was confidential, follow-up requests for mailing back the initial questionnaires were not possible. Thus, the number of potential participants was reduced from the start of this research from 1,402 to 165. This small number is below the minimum typically used in studying such a variety and amount of factors, and reduces the stability of the items assessed. Had sufficient cooperation for further investigation been possible from all of the college sites, a demographic comparison of



these 165 participants with those who had not responded would have helped in further clarifying the results. However, since there was no means to assess those who didn't participate, it is not possible to determine whether the participants truly represent the population of nontraditional students at the colleges. This reduces the reliability of these items in relationship to predicting their results with students from other institutions.

Another difficulty -but also a strength- was the novel nature of this research. Few longitudinal studies have been conducted on the academic persistence of nontraditional age college students. Although a model was utilized and augmented by general research with adults, a number of untested and novel questions outside the parameter of Tinto's model were asked in the questionnaires in order to further investigate this relationship. The insights and enhancements derived from this study, however, will help to improve further investigations of this type.

### Conclusions

With multiple analyses of 82 items measuring the constructs within this longitudinal study, many inferences are made concerning this data. However, six concluding statements emerge which best summarize these results.

1. Items measuring initial intent to seek a bachelor's degree at their stated institution, and continuing goal and institutional commitments were found to be highly significant and differentiating factors associated with adult decisions of persisting, stopping out, and withdrawing. Considering this latter set of items, the results of this research strongly supported Pascarella and Terenzini's (1980) use of Scale V (see Table 2) as a tool for predicting future persistence within the institution. Likewise, the measurement of the intent to continue enrolling throughout this study was found to be a significant and important factor for controlling for the effect of this initial commitment.

2. Nontraditional age students were much more highly invested in the academic rather than the social system of college. Thus, the level of satisfaction they experienced with both the formal and informal aspects of academic integration, especially as measured by Pascarella and Terenzini's (1980) Scales III and IV, influenced their decisions regarding academic persistence at that institution.

3. Nontraditional age students entered and pursued college with special needs and outside commitments. The need for assistance with basic skill development,

assistance with child care needs, and the impact of employment and financial concerns affected their decisions of persisting, stopping out, and withdrawing from college.

4. The choice of college attended and the academic major both were found to influence academic persistence. Persisters had a greater tendency in this study to enroll in colleges representing their first choice and were found more likely to enroll as liberal arts majors than as students in a professional degree program.

5. The number of class hours that nontraditional age students enroll in was associated with their academic persistence. Students who withdrew from college were found in this study to enroll more often in less than 12 hours of classes than either persisters or stopouts.

6. Nontraditional age students who stopped out of their college with plans to return, were found to have entered this institution with significantly less hours of prior college credit than that of their persister and withdrawal counterparts.

#### Implications

Similar to Metzner and Bean's (1987) study, the adult students' intention to continue their studies appears as one of the most significant factors influencing academic persistence. In addition, unlike many of their younger

classmates, these nontraditional age individuals may enter only with short-term goals influenced by the fact that they already possess a bachelor's or higher degree and are interested in enrolling for specific coursework for career advancement. Such findings imply several points of consideration for both researchers and practitioners working with adult students.

Since these items measuring both initial and continuing goals and commitments were found to be such good predictors of persistence, they can be used to help differentiate among those adults who may be more likely to continue with the institution and those who are more likely to stopout or withdraw. The latter scale of items was found to be useful when administered in the Spring term to those who entered in the Fall of that year. Proactive and intrusive outreach counseling can be initiated to further pursue the reasons for these individuals to potentially leave the institution, meeting the needs of some, and resulting in a higher rate of retention of these individuals.

Not all of these individuals though, want to or should remain at their current institution. Some need to be counseled to other colleges to better meet their needs. Some of them, however, have also attained their goals, which were simply a short-term investment at the

institution to complete a certain segment of courses. When considering factors of enrollment management within an institution, these individuals should not be added to the attrition rate, but instead be placed in a similar category with those who have graduated and attained their goals and commitments.

Although Tinto's model (1975, 1987) stressed the importance of both systems of integration, this study supports only the significance of adult student satisfaction with their academic and intellectual development and quality of their interactions with their instructors; especially as measured by their perceptions of faculty concern for student development and teaching. Thus, it would appear that social integration can be removed from further models exploring adult student persistence, much like the finding of Metzner and Bean's (1987) study.

However, before discarding this factor entirely, it might be wise to further investigate social needs as they pertain to an older population. Although not found to be significant, such an investigation was begun in this study with the addition of a question concerning adult peer group interaction. More focused study of adult social needs might incorporate family interests and gatherings of

adults which could yield a different set of results. Since it was found that adult participants averaged nearly three hours a week of involvement at the start of this study in off-campus leisure activities per week, perhaps some of these activities can be sponsored by the college; thus integrating the meeting of social needs within the system of the college and enhancing retention.

That adults have special concerns and commitments was reflected in the results from several items in this study. Financial concerns are listed by 10 withdrawals as reasons for leaving the institution, while receiving some form of assistance was noted by 12 persisters as a reason for remaining at their institution. The impact of these monetary needs are also reflected in the significantly lower level of employment experienced by persisters than that of both stopouts, and withdrawals. Such needs imply a more active role for colleges in assisting nontraditional age students to meet their financial obligations. Not only should more aid be made available to them by the institution, including that of at least moderately paid on-campus employment, but also assistance with their financial planning as students, parents, and income earners for their family.

Although the results of measuring potential impediments to adult persistence did not prove highly

significant, it did demonstrate that certain aspects of special adult services need to be considered in the matriculation, and hopeful retention, of nontraditional age students. With more than one half of the participants in this study expressing a gap of from one to ten or more years of time since their previous college attendance, such a break in formal education can necessitate the need for institutional academic services to enhance basic skill development. Supporting national norms, the large number of women in this study also reinforce the need for the institution to provide adequate child care services to meet the needs of these students. Meeting such needs can make the difference in remaining in the institution, or being forced to leave it in order to care for these family obligations.

Since the participant's persistence is associated with the indicated level of choice in attending this institution, this information is also valuable in predicting outcomes of retention. Given this information, institutions can seek out the reasons why other colleges were ranked higher in choice, and meet some of these factors; thus better retaining these adults.

Initially, the relationship between persister and a greater percentage of liberal arts majors studying the

humanities and social sciences appears to be merely an artifact caused by the higher proportion of women participants in this study, and the knowledge that women are more likely to major in these fields than men (Astin, 1982 et al., p. 207). However, upon closer investigation it is also noted that 7 of the 24 liberal arts majors are represented at a greater proportion (7 out of 41, or 17 percent) than are female participants (17 out of 124 percent).

These differences among the research groups concerning major areas of study also support Tinto's reflection (1987) on such results. As he notes (p. 111), individuals majoring in liberal arts may be pursuing the intellectual rewards of the college program rather than the practical affects of occupational advancement. Thus, the greater number of withdrawals enrolled in professional programs and courses may be reflecting their involvement in classes to enhance their career development or skills, rather than the need to pursue a baccalaureate degree. Knowledge of these differences can assist institutions with encouraging and advising these adults to enhance their career educational framework with liberal arts classes in the humanities and social sciences. Whatever the reason for these differences, they also merits further investigation.



Also supporting Metzner and Bean's (1987) findings, was the conclusion that withdrawals were more frequently enrolled as part-time students. Such enrollment may again reflect the more practical role of those withdrawing to pursue a limited number of classes for their occupational advancement, rather than a degree at the institution. This information can further assist colleges to more actively reach out to such part-time students and better insure that they do not leave the institution because of their feeling isolated from the services, acknowledgement, and care provided to their full-time counterparts.

Supported by their proximity to attaining their goal, both persisters and withdrawals note that this factor influences both their desire to remain at the institution and, if pursuing a short-term goal, their leaving the institution once it is met. Since stopouts entered this study with a significantly lower amount of prior college credit, this factor does not appear to as greatly influence their desire to currently continue in the institution, since the attainment of their goals may be more distant. However, as Smart and Pascarella (1987) note, re-entry and completion of a degree is more likely among students who keep actively invested in college enrollment. Supporting this contention, colleges need to

identify and keep in active contact with their stopouts, seeking ways for them to complete their educational goals. This may even result in encouraging them to continue their enrollment elsewhere, such as a community college, in order to continue the active process of their education and enhancing their return to their stated institution.

### Recommendations

Although this research has been grounded in theory, much has also been learned in the process of studying the nontraditional age student. This information will hopefully assist in the continued further exploration of adult academic persistence. The first five recommendations are focused on research methodology and approaches to this study, the latter two on practical service applications.

1. The limitations caused by delays in the mailing and obstacles preventing follow-up for those not initially responding to the study note the importance of obtaining the full cooperation and commitment of the registrar's office prior to the start of such a study. Although such a statement would appear self-evident, this research has demonstrated how difficult it can be to obtain such assistance at under-staffed private institutions. The late registration of some of these adults -most of whom

are part-time- only exacerbates the problem of obtaining directory information. Although the use of more than one institution would appear to be a more reliable measurement of adults, it is recommended that future research at private institutions seek better cooperation and assistance.

2. A more fluid system is needed to study the academic persistence of adult students. This is especially needed when studying such a heterogeneous population as that of the adult student. Several participants during this study became frustrated with the questionnaire, and requested that this researcher personally visit the adult students to investigate their needs and the institution's lack of concern and services available to them. This supports the suggestion of Walleri and Peglav-Hoch (1988), that the sole use of standardized surveys on such a varied population may produce inconsistent responses. Future research could utilize a more interpersonal research approach, combining certain standardized scales as studied in this research with qualitative research methods. This latter inclusion could help to clarify the many additional factors affecting their decision of persisting, stopping out, and withdrawing. Employing qualitative methods would help to add further important items to surveys and add richness

and depth to this line of inquiry. Continuing to focus at least some of this research on those who are successfully persisting within institutions may also assist in developing a better understanding of this process.

3. It is important to continue to differentiate among the categories of academic persistence such as persisters, stopouts and withdrawals. Simply indicating that a student is currently not enrolled may give the false assumption that he or she is a withdrawal or a dropout, when -as shown in this study- it may only be an indication of temporarily stopping out of the institution.

Since so many adults appear to have entered college with previous credit, and may not have the opportunity to extend their education on a continuous basis, it was important to add the category of stopouts to this research. It was also helpful to differentiate the group of individuals from those who at least stated that they had no desire to return to this institution and were thus more clearly labeled as withdrawals. However, adult stopouts need to be further assessed in a more lengthy longitudinal study. Likewise, factors concerned with the specifics of their temporary leave from the institution need to be studied. Such research may lead to offering more assistance to this group of individuals to both help

prevent such stopouts in their education, as well as encourage their re-entry.

4. In support of the examination of various categories of persistence, longitudinal studies need to be pursued when studying adult students. As difficult as they are to track, such investigations will help to more clearly define these categories. This current study which began in 1984, will be updated this next year to ascertain whether the persisters continued and the same stopouts returned to complete their goals.

5. A more relevant model is also needed when studying such a diverse population as adult students. Included in this model needs to be a greater emphasis upon the influence of external commitments and adult needs, aspects of which need to be included at the beginning of a longitudinal model of study. Although adding some flexibility with the recent acknowledgment of some of the external commitments, Tinto's (1987) model proved to be somewhat constricting and too focused upon the needs of traditional age students. Since his is primarily a social model, demonstrating how the social and intellectual contact of the institution affects student's decision to remain or leave, this milieu needs to be more generously expanded to outside influences if it is to be used to study adult students.

Although Metzner and Bean's (1987) model had not yet been published when this study began, it did lend additional support to environmental variables and utility of education that more closely resembled the adult student's needs and possible impediments to their education. It also gave insight to the importance of recognizing the intent of adult students entering a college program, many of whom may be interested in completing only a limited number of courses rather than a degree.

However, even Metzner and Bean have not considered all of the factors affecting nontraditional students persistence. Special services, modifications, and conveniences needed to offset the adult student's responsibilities of work and family need to be further assessed and added to such a model.

As noted in recent studies (Kaspar & Cleland, 1991; Williams, 1990), the impact of family life on all ages of college students is becoming more highly recognized today. Thus, additional and sometimes competing, responsibilities of adult students needs to continue to be factored in and studied in the investigation of academic persistence.

6. No matter how dedicated an institution is in assessing the needs of adult students, it must also learn

to provide the appropriate atmosphere that these needs engender. As with any minority or expanding population, adults need to feel as if they are a welcomed, accepted, valued, and an empowered part of the college community. Although studying the association regarding the acceptance of adults and persistence was not found to be statistically significant in this research, the library research pursued in this study, as well as the comments of several participants as previously noted (p. 228); strongly suggest further investigation and practical application of what Schlosberg et al. (1989) term as "mattering".

7. Since adults are so diverse, attempting to provide services to meet their needs is a necessary, but difficult challenge. A heterogeneous a population as they are, there may be additional differences and considerations to be acknowledged between the needs of the majority of part-time and smaller groups of full-time adult students. This study gave, for example, some indication that at least a slightly higher percentage of full-time adults were interested in campus activities than their part-time peers. This possibility needs to be explored in more detail.

In regard to integration needs, this study supported the fact that adults who persist maintain a higher degree

of satisfaction with their academic and intellectual development and have better perceptions of interaction with faculty than those who don't. However, it also strongly suggested that social integration has little -if any- impact upon the persistence of adult students. Still, as suggested in the previous paragraph, the need for such aspects may vary with the hourly status of those students.

As was further suggested in the previous section, it may be that factors of social integration have not proven to be significant characteristics for persistence because the aspects measuring this variable are not relevant for adult students. If questions indicating more family interest and needs and promoting adult contact were added, perhaps this variable would take on more significance. Including leisure activities that are more relevant to adult students as part of the college's cocurricular program could also be included. Enhancing the residential life program of college to include adult students, and perhaps their families, would encourage integration as well as reduce financial burdens for the students.

Many of the counseling, career assistance and academic advisory services offered to their younger counterparts also needs to be offered to the adult student



with their special family and employment concerns in mind. However, special services also need to be included to assist in meeting the adult's needs. Basic skill development, which is not always readily available, should be offered to adults whose absence from the educational process may require such additional support.

As indicated in this study, satisfaction with child care services may be related to the persistence of adults. Such a finding supports the rising national concern for such services which has occurred since the start of the research in 1984 ("Reauthorization," 1985; Keyes, 1990). It has recently been estimated that by the mid 1990's, 80 percent of children under the age of six years old will have mothers employed outside of the house ("The Nation," 1990). Such assistance offered within the college setting could help such individuals not only to pursue employment but further their education. This researcher is discovering in a current study that he is conducting on his campus, that offering reasonable and subsidized child care services to single parents who are enrolled in classes has given them their only means to currently pursue a college degree. As an additional benefit of this service, having such a center also furthers the on-campus employment possibilities, and development of parenting skills for traditional age students. Since adult students

may find an increasing need to care for their adult parents and extended family members, the concept of a child care center can be expanded into a family care center to help in meeting these concerns, and allowing for an increased opportunity to attend college.

Although there is some recent indication that the rapid increase in adult students entering college may be slowing, (Levine & associates, 1989), their presence will continue to be a major component of the undergraduate population for many institutions into the future. As heterogeneous a group as they are they may, as Metzner and Bean conclude (1987, p. 35), "bedevil researchers for a long time". The need to study and serve the needs of the adult, however, are a necessary component of any college who wishes to retain this group of students.

## FOOTNOTES

## CHAPTER II

<sup>1</sup> Durkheim, applying one of the earliest statistical research methods, developed a 19th century model for explaining suicide. It's impact upon the study of student attrition will be explained further in the section concerning Tinto's model (p. 25 in text).

<sup>2</sup> Note that Rootman further combined the personality, interests, and values variables into one category to describe the properties of the individual cadet (p. 29 in text).

<sup>3</sup> The predictor variables were (p. 45 in text):

1. Age
2. Secondary school academic performance (product of rank in secondary school class and self-reported secondary school GPA)
3. UICC as a college choice
4. Perceived need for academic remediation in English, reading, or mathematics
5. Parents' total income
6. Sex
7. Racial/ethnic group
8. College of enrollment
9. ACT composite score

10. Father's level of education
11. Mother's level of education
12. Highest expected academic degree
13. Perceived likelihood during college of failing one or more courses
14. Perceived likelihood during college of joining a social fraternity, sorority, or club
15. Perceived likelihood during college of needing extra time to complete a degree
16. Perceived likelihood of working at a job during college
17. Perceived likelihood during college of dropping out temporarily
18. Perceived likelihood during college of dropping out permanently
19. Perceived likelihood of transferring to another college

### CHAPTER III

<sup>4</sup> Barron's categories regarding college admissions selection were: most competitive, highly competitive, very competitive, competitive, less competitive, noncompetitive, and special. In regard to the very broad competitive category in which all four institutions

utilized in this study were listed, the two smaller colleges each had a minimal ACT requirement of 19. The two larger institutions of university status, had a minimal ACT requirement of 21 and 23.

Since the two larger institutions had an additional "+" added to their competitive category, they were said to "admit" fewer than half of their applicants." The two small institutions, without this additional code, were stated to "prefer students in the top 50 percent to 60 percent of the graduating class and accept between 75 percent and 85 percent of their applicants" (p. 104 in text).

<sup>5</sup> Since it was outside the parameter of this research model and was not found to be significant, the question concerning time of day of class enrollment was deleted from this study.

<sup>6</sup> Less extensive support could be found in the literature for other adult needs. One of these, the need for adult health insurance, was originally asked in the TAP Research Questionnaire, but later deleted from this study (p. 126 in text).

<sup>7</sup> Other questions clarifying the participant's major were not assessed in this particular study (p. 130 in text).

## CHAPTER IV

<sup>8</sup> Note that the remaining 35 responses were from those who indicated more than one response or who had no previous college experience (p. 142 in text).

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APPENDIX A  
FIRST RESEARCH MAILING

Fall, 1984

Dear Student:

Hi! I hope this letter finds you settling into your new college experience. I am a doctoral student from Loyola University, and I am conducting a study to explore the factors leading to the retention (academic persistence) of adult college students.

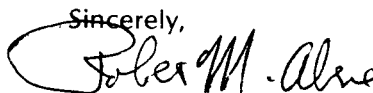
Students will be selected for this study based upon the criteria set regarding their age and past college academic experience. Participants will also be sent a survey in the spring which will assess their attitudes toward their college experience. Finally, they will be asked next fall to report on various aspects of their college enrollment: their status (continuing as a student, dropping out, stopping out, transferring), the pursuit of their academic program (persisting in their academic program, changing majors), etc. Each participant's academic progress will also be assessed via their grade point average.

Throughout this study, the names of all participants will remain anonymous to all but myself and my assistants conducting this research. Only the resulting data will be reported and available for review.

Of course, I cannot complete this study and my doctoral dissertation without the voluntary assistance of students like yourself. If you are interested in being a participant in this study, please sign the enclosed consent form and mail the completed questionnaire to me in the enclosed envelope. If you are selected as a participant, you will be sent the other surveys as stated above. By signing the consent form, you will also be giving me permission to review your enrollment status (enrolled, withdrawn, academically ineligible) and grade point average for the 84-85 academic year.

All those who are selected to participate in this study will be sent an abstract of the results. The purpose and results of this study will also be made available (via my doctoral dissertation and any subsequent publications and presentations) for others to benefit from the knowledge of how to better serve the needs of adult students.

Thank you, and I hope that you will volunteer to participate in my study.

Sincerely,  


Robert M. Abene  
Doctoral Candidate  
Department of Counseling Psychology  
and Higher Education  
Loyola University, Chicago, IL

Please return the written consent form and the background information questionnaire in the enclosed self-addressed, stamped envelope.





**BACKGROUND INFORMATION QUESTIONNAIRE** *Please Return Within*  
 (Abene Dissertation) *One Week*

**Directions:** The information you supply through this questionnaire will be kept confidential as to its source. However, if any item requests information that you do not wish to provide, please feel free to omit it. Your Social Security number is requested for research purposes only and, as with your name, will **not** be listed on any report. For further anonymity, all respondents' questionnaires will be issued a code number.

Please print the following:

Name \_\_\_\_\_

Social Security Number \_\_\_\_\_

Local Address \_\_\_\_\_

Street

\_\_\_\_\_

City

\_\_\_\_\_

State

\_\_\_\_\_

Zip

College Major \_\_\_\_\_

(Write in "Undecided" if you presently are not sure)

**A. YOUR AGE**

- Below 25  
 25-30  
 31-35  
 36-50  
 51 and older

**B. SEX**

- Male  
 Female

**C. MARITAL STATUS**

- Unmarried (including Single, Divorced and Widowed)  
 Married  
 Separated

**D. INDICATE THE NUMBER OF PEOPLE IN EACH OF THE FOLLOWING AGE GROUPS WHO RELY UPON YOUR ASSISTANCE AND SUPPORT. (Place an "X" where it states None)**

\_\_\_\_\_ Under the age of 13  
 \_\_\_\_\_ Ages 13 through 19  
 \_\_\_\_\_ Ages 20 through 64  
 \_\_\_\_\_ Ages 65 and older  
 \_\_\_\_\_ None

**E. YOUR RACIAL/ETHNIC GROUP**

- Black-American  
 Asian American  
 Caucasian American  
 Hispanic American  
 Other \_\_\_\_\_

Please Print

**F. TIME OF COLLEGE ATTENDANCE**

- Day  
 Evening  
 Both

**G. CURRENT COLLEGE ENROLLMENT STATUS**

- Part-Time (11 or less hours)
- Full-Time (12 or more hours)

**H. REGARDING YOUR IMMEDIATE FAMILY MEMBERS WHO HAVE OR ARE LIVING WITH YOU (EXAMPLE: MOTHER, FATHER, SPOUSE, CHILDREN)**

- I am the first member of my immediate family to attend college
- Other members of my immediate family have attended college

**I. AVERAGE NUMBER OF HOURS EMPLOYED EACH WEEK**

- 0 or only occasional jobs
- 1-10
- 11-30
- 31-40
- Over 40

**J. THE APPROXIMATE AMOUNT OF TIME PRESENTLY SPENT OUTSIDE OF WORK IN LEISURE/RECREATIONAL ACTIVITIES**

- Insignificant, only occasional involvement
- 1 hour per week
- 2 hours per week
- 3 hours per week
- 4 or more hours per week

**K. INDICATE YOUR OVERALL HIGH SCHOOL GRADE AVERAGE**

- A
- B
- C
- D
- Below D

**L. INDICATE THE NUMBER OF HOURS SPENT IN YOUR HIGH SCHOOL EXTRACURRICULAR ACTIVITIES (STUDENT ACTIVITIES OUTSIDE OF YOUR HIGH SCHOOL CLASSES)**

- Insignificant, only occasional involvement
- 1 hour per week
- 2 hours per week
- 3 hours per week
- 4 or more hours per week

**M. THE ESTIMATED NUMBER OF COLLEGE LEVEL CREDITS YOU HAVE PREVIOUSLY EARNED FROM OTHER COLLEGES**

- None
- 1-15 Semester hours / 1-24 Quarter hours
- 16-30 Semester hours / 25-45 Quarter hours
- 31-59 Semester hours / 46-89 Quarter hours
- 60 Semester hours or more / 90 Quarter hours or more

**N. INDICATE YOUR OVERALL PREVIOUS COLLEGE GRADE AVERAGE AS CITED IN QUESTION M.**

- A
- B
- C
- D
- I have no previous college credit

**O. THE ESTIMATED LENGTH IN TIME THAT HAS ELAPSED SINCE YOUR LAST COLLEGE ENROLLMENT**

- Less than 1 year
- 1-2 years
- 2-5 years
- 5-10 years
- I have no previous college credits

**P. THE MAJOR REASON THAT YOU DISCONTINUED YOUR EDUCATION IN THE COLLEGE YOU LAST ATTENDED**

- Difficulties in academic progress (grades)
- Financial reasons
- Change in major
- I moved
- I did not feel academically stimulated/challenged
- I did not feel welcomed or part of the college community of students and faculty
- Personal or family reasons
- Other reasons \_\_\_\_\_
- I did not attend another college

**Q. AS OF NOW, DO YOU PLAN TO CONTINUE YOUR ENROLLMENT THROUGH THE SPRING TERM, AS WELL AS ENROLL IN THE FALL TERM OF 1985**

- Yes
- No

**R. DO YOU PLAN TO COMPLETE A BACHELOR'S DEGREE FROM YOUR PRESENT COLLEGE/ UNIVERSITY**

- Yes
- No

**S. INDICATE WHERE THIS INSTITUTION RANKED IN YOUR CHOICE OF COLLEGE TO ATTEND**

- 1st choice
- 2nd choice
- 3rd choice
- 4th choice or lower

**T. INDICATE YOUR LEVEL OF CONFIDENCE THAT CHOOSING THIS INSTITUTION WAS THE RIGHT DECISION**

- Extremely confident
- Confident
- Some lack of confidence
- Not at all confident

**U. USING THE NUMBERS 1 THROUGH 5, PLEASE RANK THE FOLLOWING STATEMENTS ACCORDING TO WHAT YOU BELIEVE WILL BE THE MOST IMPORTANT ASPECT OF COLLEGE LIFE AT THIS INSTITUTION FOR YOU TO WHAT WILL BE THE LEAST IMPORTANT (NOTE: Most - #1, Least - #5)**

- \_\_\_\_\_ Interaction with faculty and staff
- \_\_\_\_\_ Personal/Social/Recreational development
- \_\_\_\_\_ Career development
- \_\_\_\_\_ Interaction with other students
- \_\_\_\_\_ Academic/intellectual development

**V. ESTIMATED ANNUAL HOUSEHOLD INCOME**

- Under 10,000
- 10,000 - 20,000
- 20,000 - 30,000
- 30,000 - 50,000
- Above 50,000

APPENDIX B  
SECOND RESEARCH MAILING

June 1, 1985

Thank you for completing the Background Information Questionnaire which I sent to you last winter. Based upon your responses, you were selected to continue in my study.

Enclosed you will find the TAP Research Questionnaire, and a return envelope. (Some individuals are also being asked to complete certain sections from their first mailing).

Please answer the questionnaire and mail it back to me as soon as possible (within a week of receiving it would be especially helpful). Depending upon your responses, you may receive a final questionnaire in the Fall of 1985.

Without your kind assistance, this important research project would not be possible. Again, thank you for your continued cooperation.

Sincerely,

Robert M. Abene  
Doctoral Candidate  
Loyola University of Chicago



6. Other. If the above statements do not describe your intent and status at the time of enrolling at your college in the fall of 1984, please explain what they were in a brief and concise statement.

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\* (If you enrolled only in a graduate course of studies in the fall of 1984, you should not complete sections II and III. However, please return this questionnaire to me as instructed.)

**Section B - Directions:**

All of the statements in this section pertain to the college in which you enrolled in the fall of 1984. Regardless of your present status (enrolled in the same college, transferred to another college, dropped out of college, etc.), please respond to the statements as they best describe(d) your feelings and beliefs during your enrollment at that college.

Please respond to each of the following statements by placing an "x" in the appropriate box. You have 5 choices of response for each statement ranging from strongly disagree to strongly agree.

1. I have no idea at all what I want to major in.
2. Most faculty members I have had contact with are genuinely interested in teaching.
3. It has been difficult for me to meet and make friends with other students.
4. The student friendships I have developed at this university have been personally satisfying.
5. The college made me feel welcome, and helped me to understand and become integrated into its academic program, support services, and student life.
6. I am not satisfied with the opportunities available to me for meeting and obtaining support from other adult students.

	1	2	3	4	5
	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
1. I have no idea at all what I want to major in.					
2. Most faculty members I have had contact with are genuinely interested in teaching.					
3. It has been difficult for me to meet and make friends with other students.					
4. The student friendships I have developed at this university have been personally satisfying.					
5. The college made me feel welcome, and helped me to understand and become integrated into its academic program, support services, and student life.					
6. I am not satisfied with the opportunities available to me for meeting and obtaining support from other adult students.					

	1	2	3	4	5
	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
7. There are adequate academic support services and tutoring available to assist me in strengthening my skills in reading, writing, math, etc.					
8. My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas.					
9. I am more likely to attend a cultural event (for example, a concert, lecture or art show) now than I was before coming to this university.					
10. The college does not provide adequate assistance to understand the financial aid opportunities that are available to me.					
11. Few of the faculty members I have had contact with are generally interested in students.					
12. Most students at this university have values and attitudes different from my own.					
13. The college does not appear sensitive to the overall needs and concerns of its adult students.					
14. My academic experience has had a positive influence on my intellectual growth and interest in ideas.					
15. My nonclassroom interactions with faculty have had a positive influence on my intellectual growth and interest in ideas.					
16. Support services (bookstore, counseling, financial aid, job placement, health service, learning skills center, library, registrar, etc.) are not available at convenient hours.					
17. Few of the faculty members I have contact with are generally outstanding or superior teachers.					
18. The college provides adequate professional counseling services to meet the adult student's personal and academic needs.					

(OVER)







**Section C - Directions:**

Please answer the following questions as accurately as can be recalled. Again, your responses are to be related only to the term(s) that you attended the college in which you enrolled in the fall of 1984.

1. My grade point average for the 1984-5 academic year was:
  - A
  - B
  - C
  - D or less
  - I can't recall.
  
2. The average number of hours spent in college sponsored or related extra-curricular student activities outside of your classes:
  - Insignificant, only occasional involvement
  - 1 hour per week
  - 2 hours per week
  - 3 hours per week
  - 4 or more hours per week.
  
3. The average number of hours outside of the classroom spent associating with other adult students from that college (in social gatherings, in light conversation, at lunch/dinner, in support groups, in study groups, etc):
  - Insignificant, only occasional contact
  - 1 hour per week
  - 2 hours per week
  - 3 hours per week
  - 4 or more hours per week.

Again, **THANK YOU FOR YOUR ASSISTANCE.** Please return this questionnaire in the enclosed, self-addressed, stamped envelope as soon as possible.

APPENDIX C  
THIRD RESEARCH MAILING

October 30, 1985

Thank you for completing the TAP Research Questionnaire and any revisions which I many have sent to you. Since I have obtained additional volunteer proofreaders, I am confident that there will be no errors to rectify in this final enclosed questionnaire.

Please carefully review ALL of the question and answer statements in the Enrollment Status Questionnaire. Although you will not need to respond to each of them, it is important that you clearly understand their related instructions. Your quick response (within one week of receiving this mailing, if possible) will be especially helpful and appreciated.

Upon completing the analysis of data and subsequent dissertation in the Spring, 1986, I will send to you an abstract of my research study. If you have any questions or wish to receive additional information, please feel free to contact me at (312) 498-2356.

Again, thank you for all your cooperation throughout the past year. Without your generous assistance, I would not have been able to pursue this important area of study in higher education.

Sincerely,

Robert M. Abene  
Doctoral Candidate  
Loyola University of Chicago

Assigned # \_\_\_\_\_

ENROLLMENT STATUS QUESTIONNAIRE  
(Abene Dissertation)

**General Instructions:**

Please answer the following questions as accurately as possible. Although not all the questions will require your response, carefully read the instructions to each (since several are related to previous responses). In order to complete this research in a timely manner, it would be of additional help if you **RETURN THIS COMPLETED QUESTIONNAIRE WITHIN ONE WEEK AFTER YOU RECEIVE IT.** In order for you to receive the abstract of the research results, please complete the address change if you have moved since receiving the TAP Research Questionnaire this past summer.

**CHANGE OF ADDRESS**

New Address: \_\_\_\_\_  
Street

---

City State Zip

**1. In regard to the undergraduate college or university that you entered in the fall of 1984**

**A. How many semesters or quarters (including the summer of 1985) have you completed? (check one)**

Semesters:	<input type="checkbox"/>	1	Quarters:	<input type="checkbox"/>	1
	<input type="checkbox"/>	2		<input type="checkbox"/>	2
	<input type="checkbox"/>	3		<input type="checkbox"/>	3
	<input type="checkbox"/>	4		<input type="checkbox"/>	4

**B. How many hours of credit have you already earned at the above college or university since you enrolled in the fall of 1984 through the summer of 1985? (Do not include the course(s) that you are now enrolled in, nor classes that you have completed or are completing at another college or university.)**

# of hours	Semester/Quarter hours Circle one
------------	--------------------------------------

C. Did you live in the college or university's dormitory system while you earned any of the above credits?

- Yes  
 No

2. The highest degree that you hope to obtain in the future. (This answer is not confined to the college or university that you enrolled in during the fall of 1984.)

- I have no plans to complete a college degree.  
 Bachelor's Degree  
 Master's Degree  
 Doctoral Degree  
 Post-Bachelor's Professional Degree (M.D., J.D., D.D.S., etc.)  
 Other (Please explain \_\_\_\_\_)
- 

3. Please check one of the following.

- A. I have registered for one or more academic classes this fall of 1985 at the same college or university that I entered in the fall of 1984.  
 B. I am not registered this fall of 1985 at the same college or university that I entered in the fall of 1984.

4. If your response to question #3 above was "A", please check one of the following statements. If your response was "B", disregard this question and the next and proceed to Question #6.

- A. I am enrolled in the same academic program this fall of 1985 as I began in the fall of 1984.  
 B. I was undecided in the fall of 1984, but now I have chosen a major. This major area of study is

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Please Print

- C. I have changed my academic program since I began my studies at the college or university in the fall of 1984. My present major area of study is

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Please Print

5. If your response to #3 above was "A", please PRINT the single most important reason for remaining at the college or university that you entered in the fall of 1984. Please limit your response to a brief statement consisting of one or two sentences.

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Please Print

6. If your response to Question #3 above was "B", please check one of the following statements.

- A. I have voluntarily withdrawn from the college or university that I entered in the fall of 1984, but plan to re-enroll at that same college or university in the future.
- B. I have voluntarily withdrawn from the college or university I entered in the fall of 1984, and am presently pursuing my education at another college or university.
- C. I have voluntarily withdrawn from the college or university I entered in the fall of 1984, and plan to continue my education at another college or university in the future.
- D. I have voluntarily withdrawn from the college or university that I entered in the fall of 1984, and do not plan to continue my education at that or any other college or university now nor in the future.
- E. I was dismissed or advised to withdraw from the college or university that I enrolled in during the fall of 1984.

7. If you responded to Question #6 above by checking "B", "C", or "D", please respond to both of the following questions:

- A. One of the reasons that I discontinued my education at the college or university that I entered in the fall of 1984 was my decision to change my area of study to a major that was not offered by that college or university. (Check one).

- True  
This new major area of study is \_\_\_\_\_.
- False

Please Print



- B. In a brief statement consisting of one or two sentences, please PRINT the single most important reason for leaving the college or university that you entered in the fall of 1984.

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Please Print

8. If you responded to Question #6 above by checking "A", please PRINT the single most important reason why you wish to return to the same college or university that you entered in the fall of 1984. Please limit your response to a brief statement consisting of one or two sentences.

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Please Print

Again, **THANK YOU FOR YOUR ASSISTANCE.** Please return the Questionnaire in the enclosed, self-addressed, stamped envelope as soon as possible.

APPENDIX D

SURVEY QUESTIONS AND RESPONSE CODES

1. Individual Characteristics

## a. Your Age

- Below 25 (omitted from this study)  
 25-30 (1)  
 31-35 (2)  
 36-50 (3)  
 51 and older (4)

## b. Sex

- Male (1)  
 Female (2)

## c. Your racial/ethnic group

- Black-American (2)<sup>a</sup>  
 Asian American (2)  
 Caucasian American (1)  
 Hispanic American (2)  
 Other \_\_\_\_\_ (2)

2. Family Background and Responsibilities

## a. Indicate the number of people in each of the following age groups who rely upon your assistance and support. (Place an "X" where it states None).

- Under the age of 13<sup>b</sup>  
 Ages 13 through 19  
 Ages 20 through 64  
 Ages 65 and older  
 None

## b. Average number of hours employed each week.

- 0 or only occasional jobs (1)  
 1-10 (2)  
 11-30 (3)  
 31-40 (4)  
 Over 40 (5)

## c. Regarding you immediate family members who have or are living with you (example; mother, father, spouse, children).

- I am the first member of my immediate family to attend college (2)

\_\_\_\_\_ Other members of my immediate family have  
attended college (1)

d. Estimated annual household income.

\_\_\_\_\_ Under 10,000 (1)  
\_\_\_\_\_ 10,000-20,000 (2)  
\_\_\_\_\_ 20,000-30,000 (3)  
\_\_\_\_\_ 30,000-50,000 (4)  
\_\_\_\_\_ Above 50,000 (5)

e. Marital Status

\_\_\_\_\_ Unmarried (including Single, Divorced and  
Widowed) (1)  
\_\_\_\_\_ Married (2)  
\_\_\_\_\_ Separated (1)

3. Prior Schooling and Achievements

a. Indicate your overall high school grade average.

\_\_\_\_\_ A (4)  
\_\_\_\_\_ B (3)  
\_\_\_\_\_ C (2)  
\_\_\_\_\_ D (1)  
\_\_\_\_\_ Below D (0)

b. Indicate the number of hours spent in your high school extracurricular activities (student activities outside of your high school classes).

\_\_\_\_\_ Insignificant, only occasional involvement  
(1)  
\_\_\_\_\_ 1 hour per week (2)  
\_\_\_\_\_ 2 hours per week (3)  
\_\_\_\_\_ 3 hours per week (4)  
\_\_\_\_\_ 4 or more hours per week (5)

c. Indicate your overall previous college grade average as cited in question 4.

\_\_\_\_\_ A (4)  
\_\_\_\_\_ B (3)  
\_\_\_\_\_ C (2)  
\_\_\_\_\_ D (1)  
\_\_\_\_\_ I have no previous college credit (missing

- value)  
 d. The estimated number of college level credits you have previously earned from other colleges.

None (1)  
 1-15 Semester hours/1-24 Quarter hours (2)  
 16-30 Semester hours/25-45 Quarter hours (3)  
 31-59 Semester hours/46-89 Quarter hours (4)  
 60 Semester hours or more/90 Quarter hours or more (5)

- e. The major reason that you discontinued your education in the college you last attended.

Difficulties in academic progress (grades)<sup>b</sup>  
 Financial reasons  
 Change in major  
 I moved  
 I did not feel academically stimulated/challenged  
 I did not feel welcomed or part of the college community of students and faculty  
 Personal or family reasons  
 Other reasons \_\_\_\_\_  
 I did not attend another college

#### 4. Entering Goals and Commitments

- a. Indicate where this institution ranked in your choice of colleges to attend.

1st choice (4)  
 2nd choice (3)  
 3rd choice (2)  
 4th choice or lower (1)

- b. Current college enrollment status.

Part-time (11 or less hours) (1)  
 Full-time (12 or more hours) (2)

- c. Do you plan to complete a bachelor's degree from your present college/university?

yes (2)  
 No (1)

- d. As of now, do you plan to continue your enrollment through the spring term, as well as enroll in the fall term of 1985?

\_\_\_ Yes (2)  
\_\_\_ No (1)

- e. Indicate your level of confidence that choosing this institution was the right decision.

\_\_\_ Extremely confident (4)  
\_\_\_ Confident (3)  
\_\_\_ Some lack of confidence (2)  
\_\_\_ Not at all confident (1)

- f. College major.

\_\_\_ Liberal Arts (1)<sup>c</sup>  
\_\_\_ Professional  
\_\_\_ Other (missing value)

- g. The estimated length in time that has elapsed since your last college enrollment.

\_\_\_ Less than 1 year (1)  
\_\_\_ 1-2 years (2)  
\_\_\_ 2-5 years (3)  
\_\_\_ 5-10 years (4)  
\_\_\_ I have no previous college credits (0)

- h. Indicate your original intent and status when you entered you college program in the fall of 1984.

\_\_\_ In the fall of 1984, I enrolled in a graduate course of studies. (omitted from this study)

\_\_\_ In the fall of 1984, I enrolled in an undergraduate course of studies, with the intention to continue enrolling in such courses (part or full-time through the beginning of the next academic year (fall of 1985). (measuring one-year commitment - 1)

\_\_\_ In the fall of 1984, I enrolled in an undergraduate course of studies, but did not intend on continuing to enroll in such courses (part or full-time) through the

beginning of the next academic year (fall of 1985). (measuring one-year commitment - 2)

\_\_\_\_\_ When I enrolled in the fall of 1984, I intended on completing my bachelor's degree from this institution. (measuring goal/institutional commitments - 1)

\_\_\_\_\_ When I enrolled in the fall of 1984, I intended on completing only one or two undergraduate courses as a special status student. (measuring goal/institutional commitment - 2)

\_\_\_\_\_ Other. If the above statements do not describe your intent and status at the time of enrolling at your college in the fall of 1984, please explain what they were in a brief and concise statement.<sup>d</sup>

- i. Using the numbers 1 through 5, please rank the following statements according to what you believe will be the most important aspect of college life at this institution for you to what will be the least important (Note: Most = #1 Least = #5).

\_\_\_\_\_ Interaction with faculty and staff<sup>e</sup>  
 \_\_\_\_\_ Personal/social/recreational development  
 \_\_\_\_\_ Career development  
 \_\_\_\_\_ Interaction with other students  
 \_\_\_\_\_ Academic/intellectual development

## 5. Academic Integration

- a. Scale IV: Academic and Intellectual Development.<sup>f</sup>

\_\_\_\_\_ I am satisfied with the extent of my intellectual development since enrolling in this university<sup>g</sup>

\_\_\_\_\_ My academic experience has had a positive influence on my intellectual growth and interest in ideas

\_\_\_\_\_ I am satisfied with my academic experience at this university

\_\_\_\_\_ Few of my courses this year have been

\_\_\_\_\_ intellectually stimulating

\_\_\_\_\_ My interest in ideas and intellectual matters has increased since coming to this university

\_\_\_\_\_ I am more likely to attend a cultural event (for example, a concert, lecture, or art show) now than I was before coming to this university

\_\_\_\_\_ I have performed academically as well as I anticipated I would

- b. My grade point average for the 1984-5 academic year was.

\_\_\_\_\_ A (4)

\_\_\_\_\_ B (3)

\_\_\_\_\_ C (2)

\_\_\_\_\_ D or less (1)

\_\_\_\_\_ I can't recall (missing value)

- c. Scale II: Interactions with Faculty.<sup>f</sup>

\_\_\_\_\_ My non-classroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes<sup>g</sup>

\_\_\_\_\_ My non-classroom interactions with faculty have had a positive influence on my intellectual growth and interest in ideas

\_\_\_\_\_ My non-classroom interactions with faculty have had a positive influence on my career goals and aspirations

\_\_\_\_\_ Since coming to this university I have developed a close, personal relationship with at least one faculty member

\_\_\_\_\_ I am satisfied with the opportunities to meet and interact informally with faculty members

- d. Scale III: Faculty Concern for Student Development and Teaching.<sup>f</sup>



- \_\_\_\_\_ Few of the faculty members I have had contact with are generally interested in students<sup>g</sup>
- \_\_\_\_\_ Few of the faculty members I have had contact with are generally outstanding or superior teachers
- \_\_\_\_\_ Few of the faculty members I have had contact with are willing to spend time outside of class to discuss issues of interest and importance to students
- \_\_\_\_\_ Most of the faculty I have had contact with are interested in helping students grow in more than just academic areas
- \_\_\_\_\_ Most faculty members I have had contact with are genuinely interested in teaching

## 6. Social Integration

- a. The average number of hours spent in college sponsored or related extracurricular student activities outside of your classes.

- \_\_\_\_\_ Insignificant, only occasional involvement (0)
- \_\_\_\_\_ 1 hour per week (1)
- \_\_\_\_\_ 2 hours per week (2)
- \_\_\_\_\_ 3 hours per week (3)
- \_\_\_\_\_ 4 or more hours per week (4)

- b. The average number of hours outside of the classroom spent associating with other adult students from that college (in social gatherings, in light conversation, at lunch/dinner, in support groups, in study groups, etc.).

- \_\_\_\_\_ Insignificant, only occasional involvement (0)
- \_\_\_\_\_ 1 hour per week (1)
- \_\_\_\_\_ 2 hours per week (2)
- \_\_\_\_\_ 3 hours per week (3)
- \_\_\_\_\_ 4 or more hours per week (4)

c. Scale I: Peer-Group Interactions.<sup>f, h</sup>

\_\_\_\_\_ Since coming to this university I have developed close personal relationships with other students<sup>g</sup>

\_\_\_\_\_ The student friendships I have developed at this university have been personally satisfying

\_\_\_\_\_ My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas

\_\_\_\_\_ It has been difficult for me to meet and make friends with other students

\_\_\_\_\_ Few of the students I know would be willing to listen to me and help me if I had a personal problem

\_\_\_\_\_ Most students at this university have values and attitudes different from my own

## d. The approximate amount of time presently spent outside of work in leisure/recreational activities.

\_\_\_\_\_ Insignificant, only occasional involvement (1)

\_\_\_\_\_ 1 hour per week (2)

\_\_\_\_\_ 2 hours per week (3)

\_\_\_\_\_ 3 hours per week (4)

\_\_\_\_\_ 4 or more hours per week (5)

7. Continuing Goals and Commitmentsa. Scale V: Institutional and Goal Commitments.<sup>f</sup>

\_\_\_\_\_ It is important for me to graduate from college

\_\_\_\_\_ I am confident that I made the right decision in choosing to attend this university

\_\_\_\_\_ It is likely that I will register at this university next fall

\_\_\_ It is not important to me to graduate from this university

\_\_\_ I have no idea at all what I want to major in

\_\_\_ Getting good grades is not important to me

- b. The highest degree that you hope to obtain in the future. (This answer is not confined to the college or university that you enrolled in during the fall of 1984).

\_\_\_ I have no plans to complete a college degree (1)

\_\_\_ Bachelor's degree (2)

\_\_\_ Master's degree (3)

\_\_\_ Doctoral degree (4)

\_\_\_ Post-Bachelor's professional degree (M.D., J.D., D.D.S. etc.) (4)

\_\_\_ Other (Please explain)<sup>i</sup>

8. Impediments to Adult Persistence<sup>g, j</sup>

- a. Scale I: Acceptance of Adults.

\_\_\_ Most of the faculty members I have had contact with are generally interested in adult students

\_\_\_ The college does not appear sensitive to the overall needs and concerns of its adult students

- b. Scale II: Availability of Classes and Entering Services.

\_\_\_ Classes are not scheduled at convenient hours

\_\_\_ The college does not provide adequate assistance to understand the financial aid opportunities that are available to me

\_\_\_ I am not satisfied with the ease and convenience of class registration

c. Scale III: Personal Development/Affiliation Needs and Services.

\_\_\_\_\_ The college made me feel welcome, and helped me to understand and become integrated into its academic program, support services, and student life

\_\_\_\_\_ I am not satisfied with the opportunities available to me for meeting and obtaining support from other adult students

\_\_\_\_\_ The college provides adequate professional counseling services to meet the adult student's personal and academic needs

\_\_\_\_\_ I am satisfied with the academic advising that is available to me

\_\_\_\_\_ I am not satisfied with the assistance available to me for exploring and developing a career choice

\_\_\_\_\_ Support services, (bookstore, counseling, financial aid, job placement, health service, learning skills center, library, registrar, etc.) are not available at convenient hours

\_\_\_\_\_ The college does not meet the social, recreational, and cultural activity needs of adult students

d. Scale IV: Returning Adult Student Needs and Services.

\_\_\_\_\_ There are adequate academic support services and tutoring available to assist me in strengthening my skills in reading, writing, math, etc

\_\_\_\_\_ I am satisfied with the college's response to my child care needs while I am attending classes or utilizing the college's facilities

9. Enrollment Status

## a. Credits/Terms Completed.

- 1.) How many semesters or quarters (including the summer of 1985) have you completed? Check one.

Semesters:	_____ 1	Quarters:	_____ 1 (1)
	_____ 2		_____ 2 (2)
	_____ 3		_____ 3 (3)
	_____ 4		_____ 4 (4)

- 2.) How many hours of credit have you already earned at the above college or university since you enrolled in the fall of 1984 throughout the summer 1985? (Do not include the course(s) that you are now enrolled in, nor classes that you have completed or are completing at another college or university.)<sup>1</sup>

	<u>Semester/Quarter hours</u>
_____ # of hours	Circle one

- b. Did you live in the college or university's dormitory system while you earned any of the above credits?

\_\_\_\_\_ Yes (2)  
 \_\_\_\_\_ No (1)

- c. Indication of Enrollment Status (Check one).

\_\_\_\_\_ I have registered for one or more academic classes this fall of 1985 at the same college or university that I entered in the fall of 1984 (Same persister)

\_\_\_\_\_ I have voluntarily withdrawn from the college or university that I entered in the fall of 1984, but plan to re-enroll at that same college or university in the future (Same stopout)

\_\_\_\_\_ I have voluntarily withdrawn from the college or university that I entered in the fall of 1984, and am presently pursuing my

education at another college or university  
(Transfer persister)

\_\_\_\_\_ I have voluntarily withdrawn from the college or university I entered in the fall of 1984, and plan to continue my education at another college or university in the future (Transfer stopout)

\_\_\_\_\_ I have voluntarily withdrawn from the college or university that I entered in the fall of 1984, and do not plan to continue my education at that or any other college or university now nor in the future (Withdrawn)

\_\_\_\_\_ I was dismissed or advised to withdraw from the college or university that I enrolled in during the fall of 1984 (Dismissed)

d. Clarification of Enrollment Status.<sup>k</sup>

1.) For Persisters:

In a brief statement consisting of one or two sentences, please indicate the single most important reason for remaining at the college or university that you entered in the fall of 1984

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2.) For stopouts:

Please indicate the single most important reason why you wish to return to the same college or university that you entered in the fall of 1984. Please limit your response to a brief statement consisting of one or two sentences

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## 3.) For withdrawals:

In a brief statement consisting of one or two sentences, indicate the single most important reason for leaving the college or university that you entered in the fall of 1984

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- e. One of the reasons that I discontinued my education at the college or university that I entered in the fall of 1984 was my decision to change my area of study to a major that was not offered by that college or university (Check one)

\_\_\_\_\_ True

This new major of study is \_\_\_\_\_  
Please print

\_\_\_\_\_ False

---

Note. Response codes are in parentheses following statements unless given special consideration as indicated.

<sup>a</sup>Former term used to describe African Americans as stated throughout this study. <sup>b</sup>Compared frequency of responses.

<sup>c</sup>Humanities and Social Sciences coded as liberal arts, and Business, Nursing and Education as professional. Those indicating more than one major, who were undecided, listed neither Business nor liberal arts majors, or who left this question unanswered were labeled as a missing value.

<sup>d</sup>Assessed individually and placed in one-year and goal/institutional commitment categories. <sup>e</sup>Compared ranked responses according to most and least important reasons in-

dicated. <sup>f</sup>From Pascarella and Terenzini's (1980).  
<sup>g</sup>Coding based upon a five-level Likert Scale. Items coded  
5 = strongly agree to 1 = strongly disagree. <sup>h</sup>Revised  
items as stated in Chapter III of this study. <sup>i</sup>Evaluated  
individually and placed in category 1 through 4. <sup>j</sup>Scales  
developed in this dissertation. <sup>k</sup>Evaluated individually  
for coding.



APPENDIX E

ADDITIONAL DATA INDICATING FREQUENCY COMPARISONS

AMONG VARIABLES ASSOCIATED WITH PERSISTERS,

STOPOUTS, AND WITHDRAWALS

Table 1.

Institutional Comparison of Enrollment Status Per Research Group

Institution	Group <sup>a</sup>			N
	1	2	3	
A	26 (51%)	9 (18%)	16 (31%)	51
B	36 (51%)	15 (21%)	19 (27%)	70
C	28 (90%)	1 ( 3%)	2 ( 6%)	31
D	6 (50%)	1 (08%)	5 (42%)	12

Note. Of the total of 165 cases used in this study, 164 were identified per institution as described here. Their percentage is based upon membership for each research category per institution. <sup>a</sup> Group 1 = persisters, 2 = stopouts, and 3 = withdrawals.

Table 2.

A Frequency Comparison of the Participants Major Reason for Leaving  
Their Previous College

Response	Group <sup>a</sup>		
	1	2	3
Completed program/goals	39	8	13
Personal/Family concerns	12	2	0
Financial	4	2	2
Moved	2	1	5
Lack of academic stimulation/ challenge	6	1	1
Change in major	1	2	1
Felt unwelcome	1	1	0
Grades	1	0	0
Other <sup>b</sup>	22	5	19
No previous college	9	4	1

Note. This table is constructed from responses to question 3f, Appendix D. <sup>a</sup> Group 1 = persisters, 2 = stopouts, 3 = withdrawals. <sup>b</sup> Other includes those who responded more than once, who gave no response, and the ungrouped responses.

Table 3.

Comparison Among the Criteria Groups of the Time Elapsed Since Their  
Prior College Enrollment

No. of Years	Group <sup>a</sup>		
	1	2	3
Greater than 10 years	8	1	0
5 - 10 years	21	3	9
2 - 5 years	7	7	7
1 - 2 years	10	2	5
Less than 1 year	42	9	19
No prior college	9	4	1
Missing value	-	-	1

Note. This table is constructed from responses to question 4q, Appendix D. <sup>a</sup> Group 1 = persisters, 2 = stopouts, 3 = withdrawals.



Table 4. (cont.)

Note. This table has been constructed from responses to question 4i, Appendix D. <sup>a</sup> Group 1 = persisters, 2 = stopouts, 3 = withdrawals. Coding 1 for greatest number of responses to 5 for least. <sup>b</sup> For those who respond, n for 1 = 90, for 2 = 23, for 3 = 40. <sup>c</sup> For those who respond, n for 1 = 91, for 2 = 21, for 3 = 38.

Table 5.

Comparison of Most Frequently Stated Reasons for Persisting, Desiring to Return, and Withdrawing From College

Item	Group <sup>a</sup>			No. of Responses
	1	2	3	
Convenience of location (convenient to inconvenient)	28	5	3	36
Indication of level of satisfaction with particular academic program (satisfied to dissatisfied)	24	7	2	33
Indication of level of satisfaction with institution in general (satisfied to dissatisfied)	14	9	5	28
Financial reasons (receiving assistance to too costly)	12	1	10	23
Class schedule (convenient to inconvenient)	13	1	1	15
Achieved goal (nearing or completed short-term goal to graduation)	7	1	13	13
Satisfaction with instructor(s) (satisfied to dissatisfied)	9	-	2	11

Note. This table is constructed from responses to question 8c, Appendix D. <sup>a</sup> Group 1 = persisters, 2 = stopouts, 3 = withdrawals.

Table 6.

Comparison of Age and Categories of Dependents Among Research Groups

Age category	Group <sup>a</sup>			N
	1	2	3	
Child	26 (27%)	7 (27%)	10 (24%)	43
Teenager	28 (29%)	7 (27%)	8 (19%)	43
Adult	34 (35%)	9 (35%)	9 (21%)	52
Elderly	2 ( 2%)	3 (12%)	2 ( 5%)	7

Note. Percentage based upon the number of participants within each research group listing dependents within the four age categories defined in this study. <sup>a</sup> Group 1 = persisters, 2 = stopouts, 3 = withdrawals.



## DISSERTATION APPROVAL SHEET

The dissertation submitted by Robert M. Abene has been read and approved by the following committee:

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Education.

July 12, 1991  
Date

Don Hossler  
Director's Signature