

USE OF THE COLLEGE STUDENT INVENTORY TO PREDICT
AT-RISK STUDENT SUCCESS AND PERSISTENCE
AT A METROPOLITAN UNIVERSITY

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Using Tinto's longitudinal model of institutional departure as the theoretical basis for this research, the purpose was to determine what extent selected motivational factors measured by the College Student Inventory (CSI) predict academic success and persistence of at-risk students at the University of North Texas (UNT). The study focused on United States citizens and permanent residents entering UNT as at-risk first-time freshmen admitted via individual approval for the fall 1994 semester. The 409 subjects were enrolled in a developmental course titled Personal and Academic Effectiveness where the CSI was administered during the first 2 weeks of class. Selected predictor variables were tested in relation to the separate criterion variables of grade point average and enrolled status during the 2nd and 4th years of the study. Grade point averages and enrollment data for the 1995-96 and 1997-98 academic years were extracted from the student information management system.

The research design employed appropriate multiple regressions, multiple correlations, multiple discriminant analyses, and bivariate correlations. Findings confirmed the ability of five CSI factors to predict grade point

average ($p < .05$) of at-risk students over the time frames used in this study. Nine factors predicting enrolled status were also significant at the .05 level; however, results were not meaningful in the 2nd year as factors classified 95% of all subjects as persisters. By the end of the 4th year, the factors were able to predict correct classification of both persisters and nonpersisters approximately 24% better than chance.

This research provides support for Tinto's institutional departure model, particularly associated with pre-entry attributes and goals/commitments over time. The CSI is a viable instrument for use with at-risk first-time freshmen at a metropolitan university; however, required enrollment in a developmental course likely confounded the ability of selected variables to meaningfully predict enrolled status during the 2nd year.

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CHAPTER I

INTRODUCTION

In the United States several major historical events have contributed to the large increases in the number of students entering institutions of higher education. With the end of World War II in 1945, large numbers of United States veterans took advantage of the opportunity to use federal benefits for educational purposes. During the 1960s, civil rights legislation further extended higher education opportunities to minorities and socioeconomically disadvantaged individuals, thus increasing the number of enrolled students significantly by 1970. With expanded access and enrollment increases, the estimated cost for higher education in the 1990s is approximately \$150 billion per year, with public institutions spending two thirds of the total and using taxpayers' dollars (Henry, 1994, pp. 63-64).

According to Lynton (1989), the consequences of growth resulting from access to higher education have become of great interest as demands for lifelong learning continue to increase. This interest increases the attention of legislators and other governmental agencies because greater demand for access adds to the already strained financial situations in many states. Costs for public education and student aid in most states now constitute about 5% to 6% of public expenditures. At this rate, the cost of access is visible and places

higher education in direct competition with other important state initiatives at a time when funds are limited.

Lynton (1989) cited both enrollment growth and costs in higher education as causing access to become an issue of broad concern. He stated that "the higher the participation rate in higher education, the more nonparticipation becomes debilitating and stigmatizing. Hence, there developed growing pressure for equity in access" (p. 27). Minority advocates and civil rights groups are interested in what higher education is doing to promote diversity in the student body.

Nationally, increased access to higher education has not necessarily resulted in an increase in the number of graduates from postsecondary institutions. The expenditures for higher education allow over 63% of all high school graduates to pursue some form of further education and result in approximately 30% of high school graduates receiving a 4-year baccalaureate degree. In contrast, Japan, England, and France restrict access to university training to those in the upper 10% to 15% range (Henry, 1994, pp. 63-64).

Kerr (1994) stated that minorities represented 12% of the total United States population in 1950 and grew to 20% in 1990. Kerr used United States Census Bureau estimates to demonstrate the future significance of the minority population, which is projected to be 30% in the year 2000 and 45% by the year 2050.

After almost 30 years of affirmative action, little has been accomplished toward proportional participation and graduation rates for minorities. Reyes

and Halcon (1991) reported that Hispanic students are grossly underrepresented in higher education, as are Hispanic faculty, staff, and administrators. Jones, Terrell, and Duggar (1991) documented Black enrollment increases of 246% from 1967 to 1977. However, they also pointed out that there has been only a 6% increase during the 1980s and noted that, although enrollment growth for Blacks has been less than that for other ethnic groups, the dropout rate for Blacks is twice as great.

In Texas there have been multiple plans to enhance educational opportunity, primarily for Blacks and Hispanics. One of the most recent is titled, Access and Equity 2000 prepared by the Texas Plan Advisory Committee (1994), which began September 1994 and continues through August 2000. This plan also addresses the educational needs of Native Americans, Asian/Pacific Islander Americans, and women. The plan suggests that the effectiveness of higher education access and equity program efforts can be evaluated by examining representation in the population as compared to participation and graduation rates for ethnic minorities.

Data from Access and Equity 2000 indicated that, at the end of 1993 in Texas, Blacks and Hispanics accounted for 41% of the 15- to 34-year-old age group. Total community college enrollments included 9.5% Blacks and 17.7% Hispanics. Texas universities enrolled 8.8% Black and 16% Hispanic students. One-year retention rates for all first-time entering Hispanic freshmen were greater than those for Whites and Blacks in community and technical colleges between 1989 and 1992; however, the retention rates for all three groups

increased during this time period. At the university level, the retention rate for Whites decreased .3% and for Hispanics, 1.3%, whereas the rates for Blacks increased 2.4% during the same period. University 6-year graduation rates for first-time entering fall 1986 students enrolled full-time for at least 12 hours were 26.6% for Blacks, 35.9% for Hispanics, and 52% for Whites. Minorities earned associate degrees at community and technical colleges at rates similar to Whites, with Blacks at 7.3%, Hispanics, 8.2%; and Whites, 8.1% (Texas Plan Advisory Committee, 1994). Similar trends toward Whites with higher completion rates can be found at the University of North Texas, a self-described metropolitan university.

Although urban universities and their inherent characteristics have had a place in higher education throughout the 20th century, the concept of a metropolitan university has developed only during the last decade. Lynton (1995), asserted that this model was long overdue, as there were over 150 four-year institutions that did not fit into the traditional undergraduate teaching or research categories. Lynton and others (cited in King, Barnes, & Hitt, 1999) described the mission of the metropolitan university as being responsive to regional needs in all three areas of research, teaching, and service and one that facilitates the interchange of ideas and information to solve economic, political, and cultural issues in host regions. Lynton (1995) concluded in the foreword to Metropolitan Universities: An Emerging Model in Higher Education:

The model of the metropolitan university is new and still being shaped and clarified. It constitutes a philosophy and a commitment rather than a specific institutional blue print: metropolitan universities will vary widely in size, emphasis, and the mix of instructional and other services they can provide. But their priorities are similar, as are some of the issues they face, such as those with regard to faculty roles and rewards. Progress is being made, and there is every reason to anticipate that metropolitan universities will emerge as major actors driving the social and economic development of their regions. (p. xxi)

Metropolitan university graduation rates reflect the effects of competing external family commitments, work demands, and commuting challenges on educational goals. Naugher (1998) tracked 2,758 first-time fall 1988 freshmen over a 10-year period at the University of North Texas and reported completion rates for each year by ethnicity. At the end of 10 years, the graduation rate was 42.05% for Whites, 34.24% for Blacks, and 30.69% for Hispanics. The overall 10-year graduation rate for the 1988 cohort was 40.6%.

A more typical graduation rate is the 6-year time frame used in the Inter-Postsecondary Educational Data System Graduation Rate Survey, the National Collegiate Athletic Association supplemental graduation report, and various Texas Higher Education Coordinating Board graduation rate reports. This same University of North Texas fall 1988 first-time freshman cohort had 6-year graduation rates for various ethnic groups as follows: 35.71% for

Whites; 28.02% for Blacks; and 23.76% for Hispanics. The overall 6-year graduation rate for this cohort was 34.34% (Naugher, 1998). The University of North Texas' first-time full-time freshmen cohort average graduation rate for the last 4 years was 36% (National Collegiate Athletic Association, 1999). It is not surprising that the improvement of graduation rates at the University of North Texas has become a strategic goal and high priority in the planning and budget process, especially given the emphasis placed on this issue at the state level.

In 1995 public higher education leaders in Texas formed the Texas Higher Education Coalition. Their proposal to the 75th legislature, titled Back to Basics: The Role of Higher Education in the Economic Future of Texas sought to increase the funding provided to higher education to avoid negative workforce and economic consequences based on population projections and underrepresented minority higher education participation and graduation rates (Texas Higher Education Coalition, 1996).

The Fifth Circuit Court of Appeals in 1996 ruled in the Hopwood v. Texas case that race could not be a factor in admission or financial aid. The coalition responded by "appointing the Texas Commission on a Representative Student Body to consider creative approaches to encourage more representative student bodies at all Texas colleges and universities" (Texas Higher Education Coalition, 1998, p. 5). Their charge was to address recruitment and admissions, retention, and financial aid and to make short- and long-term recommendations.

In 1997 Blacks (13%) and Hispanics (33%) accounted for 46% of the 15- to 34-year-olds in Texas. Blacks (10%) and Hispanics (20%) constituted 30% of total university enrollments in Texas and 37% of community college enrollments, with more Hispanics (27%) electing to enter higher education through the 2-year colleges. During the previous year, bachelor's degrees were awarded to Whites at a rate of 69%, Blacks at 7%, and Hispanics at 16% for all 4-year Texas graduates (Texas Higher Education Coalition, 1998).

It is apparent that minorities have continued to lose ground in the Texas educational systems, and this outcome has significant bearing on the workforce and economic future of the state. Steve H. Murdock (cited in Texas Higher Education Coalition, 1998), demographer, projects that by 2030 Texas will not have a White-dominated population and that there will be no ethnic majority. Murdock expects that 90% of the population growth will be non-White and that it will reach a total of 33.8 million by 2030. In 1989 the per capita income of Blacks was 55.4% of White income, and for Hispanics it was 45.3%. In 1979 Black per capita income was 56.7% of White income, and Hispanic income was 48.9% of Whites. "The state's projected increases of students in higher education will include many individuals from poor, single-parent, and minority backgrounds--a population that is at risk under the current system" (Texas Higher Education Coalition, 1998, p. 13).

In 1996, Hopwood v. Texas reached the Fifth District Court of Appeals. The Hopwood decision disallowed the use of different admission criteria favoring ethnic minorities over Whites; however, the Texas legislature

subsequently passed House Bill 588 during the 1997 session in an attempt to facilitate admission of socioeconomically disadvantage individuals to 4-year public institutions. This bill mandated that institutions automatically accept the top 10% and gave institutions the option of accepting the top 25% of the high school graduating class. House Bill 588 also outlined 18 different criteria that institutions may use for review in selecting the remaining members of the freshman class.

Questions arise as to why, nationally, fewer than one-third of high school graduates complete a 4-year degree, and the participation and graduation rates for ethnic minorities are significantly less than those for Whites. Findings from a higher education survey on retention conducted by Chaney and Farris (1991) for the United States Department of Education indicated that the four most common reasons for students leaving prior to completing a degree were financial difficulties, accomplishment of educational objectives, personal reasons, and poor academic progress. Admission selectivity was found to be the most significant predictor of retention in higher education and was determined to explain 17% to 29% of the variation in retention rates. In this same survey, 81% of the institutions reported establishing new retention programs or modifying existing programs over the last 5 years. Almost 60% of those surveyed predicted that attrition patterns at their institution would not change appreciably over the next 5 years.

With more than half of the institutions indicating that predicted attrition patterns would not change over the next 5 years, is there a willingness

to accept that prediction? If not, what more can be done to provide a better understanding of the dynamics of retention and attrition at large public metropolitan universities? And what can be done to change the persistence patterns and improve graduation rates, especially for the at-risk educationally and economically disadvantaged groups, which tend to include a disproportionate number of Blacks and Hispanics?

Lenning, Beal, and Sauer (1980) concluded that the most significant model contributing to the study of retention and attrition is that proposed by Spady (1970, 1971) and refined by Tinto (1975). The later model focused on the student and the institutional environment relationships that may result in withdrawal, and it forms the basis for the study of preenrollment attributes and motivational factors that predict the ability of at-risk students to succeed academically and persist at a large metropolitan university.

Retention research literature references a number of instruments used to predict student success and persistence in colleges and universities. One of these is the College Student Inventory (CSI). This instrument is used by more than 200 public and private colleges and universities and 50 technical, junior, and community colleges as a part of the Noel-Levitz Retention Management System (RMS), an early-intervention, early-alert system to improve retention (Stratil & Schreiner, 1993). A complete list of the CSI scored motivational factors in Appendix A and a sample advisor/student report can be found in Appendix D. "The CSI attempts to measure the 'person' half of the

person-environment equation" associated with Tinto's model of student departure (Stratil & Schreiner, 1993 p. 183).

The CSI was administered during the first 2 weeks of classes to first-time students admitted by individual approval and entering the University of North Texas fall 1994. Trent Petrie, Associate Professor of Psychology and coordinator of the University Courses (UCRS) 1000 Academic and Personal Effectiveness course/sections, administered the CSI as part of a pilot project. According to Petrie, the answer forms were sent to Noel-Levitz for processing and returned too late in the fall semester to be of any value relative to faculty advisors or instructional delivery of UCRS 1000.

The Problem

To what extent do selected motivational factors measured by the CSI predict academic success and persistence of at-risk first-time freshmen at the University of North Texas?

Purpose

The study used the CSI scores as described in the research design to determine the variance accounted for in predicting separate criterion variables of academic grade point average and persistence in the 2nd and 4th years. The study focused on United States citizens and permanent residents entering the University of North Texas as at-risk first-time freshmen admitted via individual approval for the fall 1994 semester.

Research Questions and Hypotheses

Levin and Levin (1991) found academic preparedness, usually measured by high school grade point average, rank in class, and/or standardized test scores, generally to be the best predictor of at-risk student success in college. However, Levin and Levin mentioned other motivational factors that have an impact on academic performance, such as commitment and willingness to seek academic assistance. The complex interactions of academic preparedness and motivational factors have an effect on an at-risk student's likelihood of sustaining a grade point average at least high enough to remain in college and eventually graduate. Thus, the following questions and hypotheses are pertinent to this study:

1. What are the individual and combined variances accounted for by selected CSI predictor factors specified in the Research Design and defined in Appendix A when the criterion variable is grade point average at the beginning of the 2nd year?

2. What are the individual and combined variances accounted for by selected CSI predictor factors specified in the Research Design and defined in Appendix A when the criterion variable is grade point average at the end of the 4th year?

It is suggested in the literature that the freshmen year is the time during which students are most likely to experience academic difficulty, which may lead to nonpersistence. Therefore, students who remain in school at least 4 years are likely to have grade point averages sufficiently high to be eligible to

reenroll and ultimately graduate. With at-risk students it is shown in the literature that, in some instances, retention intervention strategies that focus on study skills can improve academic success as measured by grade point average (Polansky, Horan, & Hanish, 1993), thus raising the following question:

3. Does the variance accounted for by selected CSI predictor factors specified in the Research Design and defined in Appendix A, using grade point average as the criterion variable, change at the end of 4 years as compared to the beginning of the 2nd year?

Tinto (1993) suggested a number of reasons why students stop attending a particular college, which include but are not limited to (a) meeting of educational objectives before graduating, (b) financial difficulties, (c) external factors such as work or family responsibilities, (d) transfer to another institution, and (e) academic difficulties that could lead to suspension. Obviously, all of these reasons for nonpersistence would not necessarily have a negative impact on a student's grade point average; however, given the substantial link between high school preparedness and college academic success, the following is predicted:

4. Persisters will have a higher grade point average than nonpersisters.

According to Stratil and Schreiner (1993), "The CSI attempts to measure the 'person' half of the person-environment equation" in Tinto's model of student departure (p. 183). The 1993 revision of Tinto's model includes the dimension of time as a component that is critical in the longitudinal process of

the academic and social integration of the student into the institutional culture. Polansky et al. (1993) noted that "students who are highly committed to graduation may persist regardless of academic achievement: likewise, students lacking commitment may withdraw despite their academic success" (p. 488). Therefore, potential differences in 2nd year and 4th year patterns of predictor variables associated with each criterion variable are of particular interest in this study.

5. CSI predictor factors significantly discriminate between persisters and nonpersisters in the 2nd year.

6. CSI predictor factors significantly discriminate between persisters and nonpersisters at the end of the 4th year.

Although variables such as the CSI predictors have been related to academic success (Cabera, Nora, & Casteneda, 1992; Levin & Levin, 1991; Pascarella, Duby, & Iverson, 1983; Polansky et al., 1993), the pattern of these relationships over time remains unclear. Therefore, it is appropriate to explore the relationships of the predictor CSI factors in this study to the criteria (grade point average and persistence) across the two time frames to be studied.

7. What are the apparent patterns of the relationships of the CSI factors used in this study to the criteria variables of grade point average and persistence in the 2nd year and 4th years?

Significance of the Study

This study will contribute to the body of knowledge associated with Tinto's revised model of retention and attrition, particularly as it relates to initial pre-entry attributes and goals/commitments components of the model. It will also serve to identify patterns, using the CSI motivational factors for the early identification of variables affecting at-risk first-time freshmen who are more prone to experience academic difficulty or fail to persist to completion of a baccalaureate degree. Finally, the use of the CSI in this study will serve to determine its potential as an attrition intervention tool and its usefulness in the goal to increase graduation rates at the University of North Texas and enhance educational outcomes for at-risk students.

With the advent of distance or distributed learning, more sophisticated tools are needed to allow faculty and staff to get to know students better and be in a position to provide effective assistance in a remote learning environment as face-to-face communications are supplemented by technological options. Advising via e-mail and inexpensive two-way Internet video conferencing will surely become frequent modes of interaction. If the CSI is determined to be a viable instrument for use with at-risk students, making profile data available on-line to trained advisors would aid in the establishment of remote rapport, serve to strengthen ties to the university, and potentially improve services provided to students. CSI summary information could also be integrated with other on-line facts, such as admission and

placement data and degree program completion status, to provide an even more comprehensive advising resource.

Definition of Terms

First-time freshmen fall 1994 refers to those students enrolled as of the census date in their first semester of college after graduating from high school, as coded by the Undergraduate Admission Office for the fall 1994 semester.

Census date is the 12th class day of a fall or spring semester, 4th class day of summer terms, or 2nd class day of the May Mini-Mester.

Individual approvals are undergraduate students admitted fall 1994 who did not have the stated minimum requirements for admissions at the time of the admission offer and were required to successfully complete UCRS 1000. This course, titled Personal and Academic Effectiveness, is a developmental course required of students admitted via individual approval; however, other students may be advised to take this course. The course is designed to foster study skills, enhance academic performance, and improve retention of at-risk and other students.

At-risk students are undergraduate students who are admitted via the individual approval process and are required to enroll in UCRS 1000.

Second-year persisters are those entering fall 1994 students in this study who were enrolled for at least one semester during the 1995-96 academic year.

Fourth-year persisters are those entering fall 1994 students in this study who were enrolled for at least one semester during the 1997-98 academic year.

Second-year nonpersisters are those entering fall 1994 students in this study who were not enrolled for at least one semester during the 1995-96 academic year. This group includes students who dropout, stopout, transfer to another institution, and/or may be suspended indefinitely.

Fourth-year nonpersisters are those entering fall 1994 students in this study who were not enrolled for at least one semester during the 1997-98 academic year. This group includes students who dropout, stopout, transfer to another institution, and/or may be suspended indefinitely.

Enrolled status is the state of persistence or nonpersistence in the 2nd or 4th year.

Grade point average uses the University of North Texas resident credit hours, and it is based on a 4-point scale.

It is calculated by dividing the total number of grade points by the total number of semester hours attempted. . . . In calculating grade points, grades count as follows: A, four points per semester hour; B, three points; C, two points; D, one point; and F and WF, zero points.

(University of North Texas, 1998, p. 49)

Limitations

The limitations of this study are associated with conducting research at a single campus and using an ex post facto descriptive research design. As stated previously, retention and attrition research findings are not readily

transferable from one campus to another. Although this is a limiting factor in one respect, it is also a positive factor for the University of North Texas. This study will provide more insight regarding the opportunity for early and improved identification of persisters versus nonpersisters and will potentially aid in developing additional strategies or enhancing existing strategies to improve retention and graduation rates at this institution.

The use of an ex post facto descriptive research design limits the ability to assume cause-and-effect relationships because there is no manipulation of an independent variable as it exists in an experimental design, nor is there randomization associated with the sample population. These conditions may also result in oversimplification of results from the study, which are more philosophical or inductively reasoned than causal (Kerlinger, 1992).

Delimitations

Limits placed on this research are that the population for this study comes from fall 1994 at-risk first-time freshman students who are United States citizens or permanent residents enrolled at the University of North Texas. Of the 1,838 first-time or new-from-high-school freshmen enrolled fall 1994 (excluding Texas Academy of Mathematics and Science students), 527, or 28.7%, were admitted via individual approval (Naugher, 1994). The CSI was administered to 852 new individual approved students, who included both first-time or new-from-high-school freshmen and new transfer students.

Additional limitations include the matching of name and student identification numbers (social security numbers) with admission and enrollment records during the time of the present study with original CSI individual score results. Score results were excluded if no match could be made with the student record data base as a result of social security number changes.

Assumptions

Assumptions for this study include the following:

1. At the time the admission decision was made, entering students who did not meet admission requirements were properly identified and coded by the undergraduate admissions staff as first-time freshmen admitted via individual approval.
2. The CSI instrument was properly administered to fall 1994 first-time students in Assumption 1 and scored appropriately.

CHAPTER 2

LITERATURE REVIEW

Research literature regarding attrition in higher education is plentiful and has tended to address the 1st year of study. However, Wilder (1992) noted that the results are not readily transferable from one campus environment to another, stating that "each institution has its own unique characteristics with resulting effects on students" (p. 34). Wilder also argued that "efforts to deal with the attrition problem must be expanded beyond these first-year students in order to enhance the ongoing integration of students into the university community" (p. 341). Thus, institutional differences limit generalizations as to the effectiveness of attrition/retention models and necessitate that each institution conduct its own research and purposefully must include studies that go beyond the student's 1st year of enrollment. Astin (1993) also pointed out that college retention rates and related academic performance studies may well be misleading because they tend to reflect whom a college admits in its recruitment efforts rather than how effective an institution is relative to retention.

In an attempt to provide a complete overview relative to the study of student attrition or, conversely, persistence, Pascarella (1982) edited the combined essays of various prominent researchers to provide an overview of

topics, including defining dropout, conceptual models, selection of variables, research design, and measurement concerns. Pascarella pointed out the historical pattern of studies using various criteria to label dropouts and the difficulties associated with formulating a single research definition of leaving behavior, which also affects the ability to generalize research results. For example, many studies have used a freshman-to-sophomore level, or 1-year definition of persistence, and disregarded differences in students who are academically ineligible to return, depart for financial reasons, transfer to another school, or stop out with the intent to return.

Categorically, Tinto (1982) emphasized that dropout can be defined from a number of different perspectives and that all leaving behaviors should not necessarily be considered negative. For example, some students do not enter college with the intention of completing a 2- or 4-year degree. They may have educational goals that require only a limited number of credit hours in a particular area of study to aid them in furthering their professional lives or personal goals. In this case, leaving before completion of a degree is positive because the student's educational goal has been met. Other students enter their first institution with the express intention of transferring to another school to complete a preferred program of study to graduate from a more selective institution. Tinto (1993) also suggested that many attrition studies conducted at single institutions have grossly understated true higher education system completion rates and have failed adequately to consider the complex reasons why individuals enter or leave postsecondary education.

In a National Center for Education Statistics longitudinal study of 1989-90 beginning students, Berkner, Cuccaro-Alamin, and McCormick (1996) found that nearly 60% leave their initial institution before degree completion, with approximately one-half of these students continuing their education elsewhere. At the end of a 5-year period, approximately two thirds of 1989-90 beginning students were still enrolled somewhere in the higher education system or had graduated. Obviously, there can be extreme differences in institutional rates of completion or retention as compared to the same rates for the American higher education system as a whole.

Tinto's Model

According to Bean (1982), only in the last 2 decades have theoretical models of attrition or retention evolved from previous atheoretical or descriptive studies. He identified five longitudinal process models as having significant impact on the body of knowledge associated with attrition or retention. These models represent the work of Spady, Tinto, Pascarella, Bean, and Fishbein and Ajzen.

Lenning, Beal, and Sauer (1980) concluded that the most significant model contributing to the study of retention and attrition is that proposed by Spady (1970, 1971) and refined by Tinto (1975). This model is based on Durkheim's theory of suicide, which suggests that, when people are not sufficiently involved with society in terms of interpersonal relationships (affiliations) and values or morals, the likelihood for probable self-inflicted

death exists. Relative to student retention or attrition, Tinto's (1975) theory focuses on the student and the institutional environment relationships that may result in withdrawal. Original constructs of the model included prematriculation characteristics such as family background, precollege schooling, personal attributes, and commitments. Institutional fit is generally used to describe the effects of student involvement or experiences with both academic and social systems while enrolled. The resulting integration of the student or lack of integration into the institutional culture has a long-term effect on goal and institutional commitment, thus determining a student's decision to stay or leave.

Tinto has published two refinements of the model. His original model, as seen in Figure 1, contained five categories, with interrelated constructs interacting with one another to determine a student's dropout decision. The most recent revision was developed after his review and reflection of over 20 years of research, much of which has been devoted to the study of his first proposed model. The revised model, as seen in Figure 2, also contains five basic constructs; however, some labels for components have changed. The model now includes additional constructs to explain further the complex nature and multitude of factors that can affect a student's departure or persistence decision over time (Tinto, 1975, 1993).

The first segment of the model is labeled pre-entry attributes and includes elements related to family background, skills and abilities, and prior schooling, all of which are similar to the initial model. The second part, now

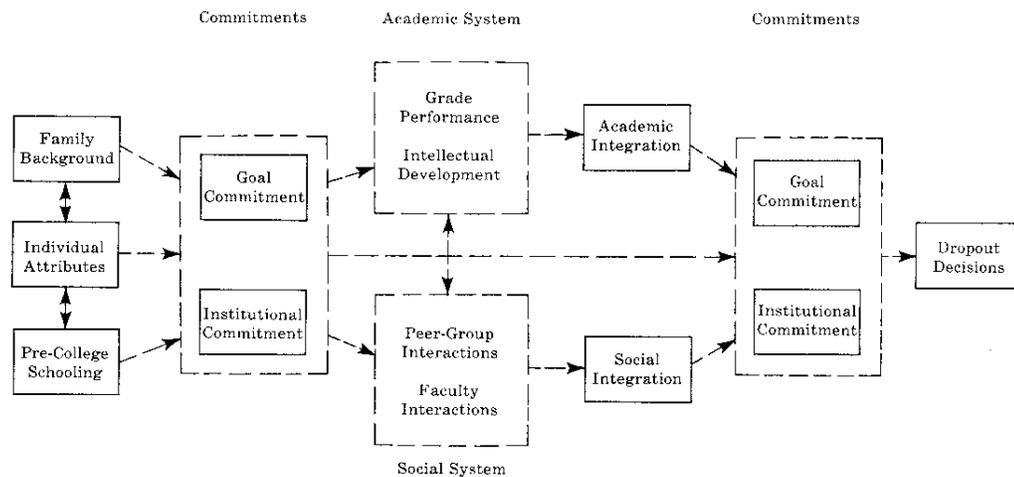


Figure 1. A conceptual schema for dropout from college. From "Dropout From Higher Education: A Theoretical Synthesis of Recent Research," by V. Tinto, 1975, Review of Educational Research, 45, p. 95. Copyright 1974 by the American Education Research Association. Reprinted with permission.

labeled goals/commitments, shows the addition of student intentions and external commitments to the model. As a student enters the institution, intentions and external commitments have significant bearing on overall goal and institutional commitments. These first two segments of the model can be said to represent what characteristics the student possesses at the time of entry and a student's disposition in terms of intentions and motivational factors. These characteristics and factors prepare the student to respond to the positive or negative experiences he or she may encounter at a given institution.

Also introduced at the second stage in the model is the acknowledgment that external commitments to others and entities outside of the institution,

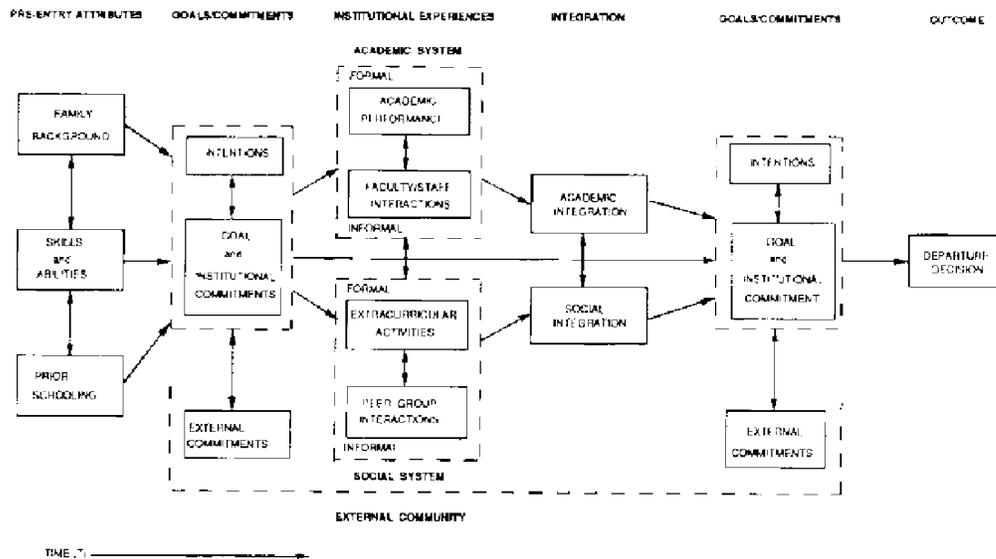


Figure 2. A longitudinal model of institutional departure. From Leaving College: Rethinking the Causes and Cures of Student Attrition (2nd ed., p. 114), by V. Tinto, 1993, Chicago: University of Chicago Press. Copyright 1993 by the University of Chicago. Reprinted with permission.

such as family, friends, and work obligations, have an ongoing effect throughout the time (also a new construct in the model) spent in college. These external forces can either be supportive or have a negative influence on a student's goals and commitments, subsequent interactions with the institution, and, ultimately, his or her departure decision.

The third part of the model has been expanded to include the formal and informal aspects of institutional experiences and the interactional effect of global academic and social systems. Faculty and staff are now both seen as having the ability to influence the departure or persistence decision. Again, the

external community, made up of individuals, enclaves, or entities with whom the student also interacts, continues to be a factor over time.

Integration, the fourth segment of the model, includes academic and social elements and represents the resulting student/institutional experiences and their effect of modifying student intentions, internal/external commitments, ultimate goals, and overall commitments. Positive campus experiences tend to increase integration into the academic and/or social systems, whereas negative experiences tend to weaken academic and/or social integration. Tinto (1993) emphasized that strong intentions or career goals can overpower the effect of negative experiences and poor integration into the culture of the institution, whereas positive interactions can be mitigated by external community and forces that are well beyond the institution's ability to influence. In summary, Tinto's (1993) model

argues that individual departure from institutions can be viewed as arising out of a longitudinal process of interactions between an individual with given attributes, skills, financial resources, prior educational experiences, and dispositions (intentions and commitments) and other members of the academic and social systems of the institution. (p. 113)

Pre-Entry Attributes, Intentions, and Goals/Commitments

In a study conducted at a large urban commuter doctoral-granting institution in the Midwest, Pascarella, Duby, and Iverson (1983) found that Tinto's (1975) theoretical model was not as effective in predicting persistence as it had been in studies conducted at residential institutions. The researchers posited the addition of another construct, labeled intentions and inserted between the fourth and fifth constructs, as having the potential to increase the variance explained in the overall model at a commuter campus. It was asserted that commuter students do not have as many opportunities to become involved or integrated into the campus environment as do residential students; therefore, intentions have a mediating effect on the decision to withdraw or persist. It was also suggested that preenrollment characteristics or attributes might have a more significant influence on withdrawal in a nonresidential setting.

A sample of 579 entering freshmen completed the American Council on Education survey designed for incoming students, and a follow-up survey in the spring was returned by 46.5% of the original sample. Non-Whites were underrepresented in the later survey, and the authors employed an algorithm to compensate, with a weighted values adjustment. Five construct variables for the model were operationalized from answers to items on these instruments and data from the admission files. From the follow-up survey, "Intention was a single item: 'It is likely that I will re-enroll at this university next fall' (5 = strongly agree, to 1 = strongly disagree)" (Pascarella et al., 1983, p. 92).

The dependent variable, voluntary withdrawal at or prior to the beginning of the sophomore year, purposefully excluded students who were not academically eligible to return and focused on the time when the greatest number of students elected not to return or to transfer from the institution. The researchers employed several different multiple regression statistical methods, including hierarchical, classification, and path analysis. The strategy was to ensure complete understanding and interpretation of the results.

Pascarella et al. (1983) reported 19% variance explained by the model without intention, which they considered comparable to results obtained by other investigators; however, the variance increased to 28.2% after they included the intention variable as an enhancement to the model. "Only three of the five variable sets were associated with a statistically significant increase in R^2 : background characteristics (9.9%); academic and social integration (6.3%) and intention (9.2%)" (Pascarella, 1983, p. 93). In the classification analysis, background characteristics were responsible for identifying 69.1% of persisters and nonpersisters. With the addition of remaining model variables, including intention, there was only a 13% increase in improvement in correct classifications. In summary, the results of the study indicated that, for commuter students, background characteristics and intentions to remain in college, directly affected by institutional commitment, are equal to or greater in importance than the mediating effect of the academic and social integration process resulting from 1st-year experiences in predicting voluntary withdrawal for commuter students.

Cabrera, Nora, and Castaneda (1992) proposed a structural model that evolved from the work of Tinto and other researchers. This model takes into consideration the role of finances as relates to persistence and includes the intent-to-persist construct. In their study of 1988 entering freshmen at a large urban commuter institution, where 61% of the student body lived off-campus and almost 70% were employed, "the model further accounted for 47% of the variance observed in persistence while explaining 25.5% of the variance observed in intent to persist" (Cabrera et al., 1992, p. 583). Financial aid was determined to have an indirect effect on persistence.

The security of knowing that financial resources are not an issue equalizes opportunity for affluent and low-income students and facilitates the process of involvement or integration in academic and social systems.

Results further suggest that when policy analysts evaluate the effectiveness of student aid programs, they should take into account the fact that the effects of finances take place within a context in which intellectual, academic, socialization factors, and motivational factors interplay in shaping persistence decisions. (Cabrera et al., 1992, p. 590)

Institutional Experiences and Integration

Terenzini et al. (1994) argued that little research has been done to attempt to identify the process by which students become involved or integrated into the campus culture during the transition to college. In a project

sponsored by the National Center on Postsecondary Teaching, Learning, and Assessment, four institutions were selected that offered a good cross section of institutional and student characteristics. Because of the complex issues and lack of definitive information about the dynamics of the transition-to-college process, the study design employed the focus-group interview research design. Findings suggest a highly complex phenomenon associated with the transition from high school to college, or work to college, with various themes identified across institutions and students.

The nature and dynamics of the process vary according to the student's social, family, and educational background; personality; educational and occupational orientations and aspirations; the nature and mission of the institution being attended; the kinds of peers, faculty, and staff members encountered; the purpose and nature of those encounters; and the interactions of all of these variables. The process is a highly interrelated, web-like series of family interpersonal, academic, and organizational pulls and pushes that shape student learning (broadly conceived) and persistence. (Terenzini et al., 1994, p. 61)

In a study designed to explore ethnicity and the social integration concept related to Tinto's model of student departure, Murguia, Padilla, and Pavel (1991) used qualitative analysis "to demonstrate a concept's empirical existence" (p. 434). Through the use of a structured but open-ended interview

strategy, 24 Hispanic and Native-American junior and senior students were interviewed. The conceptual model of ethnicity identified in this study substantiates a biological and sociocultural basis that provides a context for everyday actions that affects the way one functions on a university campus.

Three concepts were identified that describe the role ethnicity plays in daily life. "They may be summarized as self-identity, a sense of place in the world, and affective support" (Marguia, Padilla, & Pavel, 1991, p. 435). Results suggest that social enclaves such as student organizations, religious groups, fraternities, sororities, and ethnic clubs can provide students with a means to "scale down the campus and integrate socially. Thus, ethnic enclaves can provide the student with an ethnically compatible environment that may be important for some ethnic students" (Marguia et al., 1991, p. 436).

Wolfe (1993) examined commuter and resident student participation in The Freshmen Center intervention program at a mid-Atlantic, 4-year, predominately White, nonresidential, suburban, state-funded institution. The study focused on the relationship between 1st-year intervention and academic and social integration, academic success, commitment, and persistence. It was hypothesized that, at the end of the 1st year, both commuter and resident hall participants in The Freshmen Center would have higher ratings on the above categories, as measured by a First Year Student Questionnaire (Wolfe, 1993, p. 323), which incorporated the Institutional Integration Scale developed earlier by Pascarella and Terenzini (1980).

The results of Wolfe's (1993) study were inconsistent with previous research results dealing with freshman student interventions and orientation courses. Although there was a significant difference in social integration among the groups, both participating resident and commuter groups had significantly more nonpersisters than randomly selected nonparticipants. Female grade point averages were significantly higher than those of their male counterparts in both resident and commuter groups of participants and nonparticipants; however, relative to general academic success, no other significant differences existed among the groups. In summary, Wolfe concluded that the 1st-year intervention effects were minimal in contrast to the effect of attending college itself, living on campus, and external campus influences. Wolfe suggested further research with an ethnically diverse sample and a longitudinal study of academic and retention patterns.

Baker and Schultz (1992) used the Anticipated Student Adaptation to College Questionnaire (ASACQ) and the Student Adaptation to College Questionnaire (SACQ) to correlate pre- and postmatriculating freshmen's expectations relative to college adjustment and to produce a predictive index of disillusionment. Students with more disillusionment were found to have more academic difficulties, to be less satisfied with college, to have a greater tendency to withdraw and not graduate, and to be more likely to be known by psychological or counseling services staff. On the positive side, disillusioned students appeared to be aware of the discrepancy between their precollege

expectations and post-enrollment realities, and intervention strategies were shown to mitigate the effects of disillusionment in some instances.

The literature review points to the complex nature of the retention/attrition processes, the effect of institutional characteristics, and the difficulties of generalizing or expanding the body of knowledge from theoretically-based research results centered on Tinto's longitudinal model of institutional departure. Tinto's revised model reinforces the dynamic nature of academic and social experiences, external communities, and effective integration of the student within the institutional culture over time. Polansky, Horan, and Hanish (1993) cited research indicating that students persist toward graduation in spite of poor academic achievement and, conversely, withdraw despite academic success. Both circumstances suggest underlying motivational factors and perhaps the need to better understand students enrolled in given institutions over time.

Factors Affecting Student Persistence and Success

Levin and Levin (1991) identified a number of student characteristics as having "the largest impact on at-risk minority student persistence" (p. 324). At the top of the list was academic preparedness, quantified by high school grade point average, rank in class, and standardized test scores. This was followed by the ability to adapt to the college environment. Other characteristics included commitment to educational goals, one's perception of progress toward those goals, reasons for pursuing a college degree, self-confidence, and willingness to

seek academic assistance. The authors also found that family background characteristics play a significant role in at-risk minority student persistence (p. 324) and described at-college predictors of persistence for at-risk minority students as follows: "Simply stated, it is student interactions with peers, advisers, and faculty that (a) increase satisfaction with the institution, (b) create a sense of belonging, and (c) strengthen commitment to the institution's educational goals and standards" (Levin & Levin, 1991, p. 324).

Krotseng (1992) used the SACQ to predict persistence at a comprehensive 4-year university. This instrument is marketed by Western Psychological Services as an early warning device that can distinguish at-risk students and assess "overall adjustment to college as well as academic adjustment, social adjustment, personal-emotional adjustment, and attachment to the institution" (Krotseng, 1992, p. 100). These four subscales measured by the 67 SACQ items closely resemble Tinto's model of institutional departure, and the researcher hypothesized that the instrument would differentiate persisters and nonpersisters.

In-coming fall 1989 and 1990 freshmen and transfer students were administered the SACQ early to mid-semester, and enrollment status was determined for each of the entering student groups in the subsequent spring semester. Using discriminant analysis, Krotseng (1992) found that 31 variables correlated (.38 canonical correlation) with the two enrollment categories. The SACQ was capable of correctly classifying 85% of the fall 1989 students as persisters or nonpersisters after one semester. The same analyses performed at

the end of the second and third long semesters resulted in 70% and 71% classification accuracy. This decline in accurately predicting enrollment status reinforced the notion that the instrument is an early identifier of at-risk students and that the factors measured are not stable over time, which is consistent with Tinto's (1982) premise associated with the dynamic nature of student experiences and the ultimate departure decision.

Tinto (1975) asserted that dropping out of college is a complex process and that earlier research was often oversimplified by categorizing students as either enrolled or having dropped out at a given point in time. Tinto further suggested that departure behavior is quite different for those who transfer, those who stop out temporarily, and those who dropout of higher education completely. In an effort to differentiate between various withdrawal behaviors (persisters versus dropouts and transfers), Mallette and Cabrera (1991) "focused on the effects of academic integration, social integration, final goal commitment, final institutional commitment, and finance attitudes on persistence decisions" (p. 183). Their sample was comprised of North Carolina State University fall 1994 traditional first-time freshmen who were still enrolled the following spring semester. The instrument developed for use in this study was the Freshman Experience Survey, an adaptation of the institutional integration scale developed by Pascarella and Terenzini (1980) and expanded to include items related to attitude about finances.

Of the 3,414 freshman students, 2,954 met the selection criteria, and 953 (32.3%) responded to the survey, which yielded 903 usable responses

from subjects. Fifty students were academically ineligible to return fall 1985, and they were excluded from the study, because the focus was on voluntary withdrawal. "Of the 903 subjects, 95.2% ($\underline{n} = 860$) were classified as persisters, 1.6% ($\underline{n} = 14$) were classified as dropouts, and 3.2% ($\underline{n} = 29$) were classified as transfers" (Mallette & Cabrera, 1991, p. 184). The researchers employed logistic regression to test the effects of the predictor variables as they related to the criterion variables of persistence, transfer, and dropout. The factors that significantly discriminated between persisters and dropouts included (a) academic performance, (b) institutional commitment, (c) finance attitudes, and (d) faculty concern. For persisters and transfers, institutional commitment and goal commitment distinguished the two groups. "Overall, findings lend support to Tinto's proposition about the importance of distinguishing between different types of voluntary withdrawal behavior" (Mallette & Cabrera, 1991, p. 190). Mallette and Cabrera suggested that their findings may explain some of the previous contradictory findings associated with the study of retention when a simplistic definition of dropout has been employed. They also recommended that individual institutions conduct their own retention research before attempting to alter or develop organizational policy or practices to counter attrition.

At-Risk Students

Thompson, Samiratedu, and Rafter (1993) conducted research on the effects of campus residence on first-time entering students and took into

consideration several significant background variables and their effects on academic performance, credit hours earned, and retention. The research was conducted at a rural, public, regional university with 12,500 students located in the southeastern United States. Of particular interest to Thompson et al. were students who did not meet admission criteria, those who were considered at-risk, and Black students, who represented the largest minority numbers. The sample for the study was 1988 and 1989 entering first-time students. Developmental admissions accounted for about 40% of total new-admit students. Black students constituted 14% of the sample, with 70% admitted as developmental, as compared to 37% for all others. Gender and residence percentages were similar for developmental and regular freshmen.

A multifactor analysis of variance was calculated for credit hours earned and grade point average. A multiway contingency table included retention and was evaluated by a log-linear method. "Factors included in the analyses were admission type (developmental vs. regular) race (African-American vs. all other races), gender (male vs. female), and residence (off-campus vs. on-campus)" (Thompson et al., 1993, p. 44). Some results of the Thompson et al. study were an anomaly, because Black students with lower college grade point averages and fewer hours completed tended to have a significantly higher ($p = .001$) rate of retention than their White counterparts. Campus residents who were also developmental admits had slightly higher performance and retention rates, along with enhanced degree progress, as compared to those residing off-campus. In fact, on-campus students performed better in all areas

regardless of admission type, gender, or race. The researchers viewed residence location as the primary factor associated with academic performance, progress, and retention, and they did not take into consideration the prematriculation attributes or motivational factors that may have influenced these outcomes. For example, more motivated students may have applied earlier and availed themselves of campus housing rather than being forced to live off-campus.

In their review of the literature on retention and attrition, Polansky et al. (1993) determined the two most significant predictors of staying in college to be academic achievement and commitment to the goal of graduation. In general, high school class standing and/or grade point average is the best single-variable predictor of college retention; however, correlation coefficients are usually .50 or less. Polansky et al. (1993) argued that, although the relationship between high school success and college achievement is apparent, "the link between college achievement and retention is less apparent," and they noted that "students who are highly committed to graduation may persist regardless of academic achievement: likewise, students lacking commitment may withdraw despite their academic success" (p. 488). In their study related to retention of at-risk students, Polansky et al. employed study skills training and career counseling as treatments to assess causal relationships between retention and career goal commitment in order to analyze separate and combined effects. Participants in the study were entering freshmen who had admission deficiencies and who had not declared a major. "The dependent measures in this study fell into four categories; (a) retention per se, (b) study

skills outcomes, (c) career counseling outcomes, and (d) control variables" (Polansky et al., 1993, p. 489).

Results found by Polansky et al. (1993) were inclusive except for the study skills treatment. Using an analysis of variance to evaluate separate and combined effects, the study skills treatment group earned significantly higher grade point averages, with an average of 2.48 and only one member placed on probation. Polansky et al. concluded that participation in programs that focus on study skills alone can have a beneficial impact on grade point average and retention (p. 491).

Feldman (1993) used chi-square for univariate comparisons and logistic regression methodology to select and order pre-entry factors that affected 1-year retention of community college students for the purpose of identifying at-risk students prior to the beginning of classes. Feldman proposed that, unlike Tinto's earlier model of academic and social integration occurring after enrollment, community college students who are predominately commuters have preenrollment characteristics that predispose them to drop out. There were 1,140 first-time students enrolled fall 1989 in the sample analyzed. Persisters and nonpersisters a year later "were compared on the following factors: high school grade-point average, gender, age, ethnicity, goals, full-time/part-time status, and basic skill need" (Feldman, 1993, p. 506). The univariate analyses determined that these factors, excluding basic skill/need, were associated with the dichotomous outcome of reenrollment or drop out.

According to Feldman (1993), "The order of importance to retention was high school GPA [grade point average], age, full-time/part-time status, and finally, ethnicity" (p. 508), with the remaining factors not selected for inclusion. Other results included the propensity of minority students to dropout at a higher rate than Whites and the fact that full-time students were twice as likely to be retained as part-time students. There was a curvilinear relationship of dropouts and age, with 20 to 24 and 40- to 44-year-olds being significantly more likely to drop out than students in other age groups.

Summary of Literature Review

A great amount of retention or attrition research has been conducted; however, according to Astin (1993), many of the results were merely indicators of the types of students admitted at various institutions. Studies also continue to be plagued by the difficulties associated with differentiating among numerous dropout behaviors, such as academic suspension versus a temporary stopout with the intent to return or accomplishment of an educational goal without the completion of a degree. Retention research efforts are also affected by the difficulty of trying to generalize retention study results across institutions due to the complex, web-like interrelationships between the student and the institutional culture and the effect on a student's experiences.

On the positive side, during the last 2 decades, retention or attrition theory has begun to guide research efforts. The most notable theory is Tinto's (1993) model of student departure, reflects the results of almost 20 years of

research contributing to the body of knowledge surrounding this theory. In essence, it is proposed in this model that the student enters college with preexisting attributes, including family background, skills/abilities, and prior schooling, to begin a longitudinal process of interacting with the formal and informal social and academic components of the institution. This process is affected by external forces, the student's goals, the intent to complete the educational objective, and a commitment to the institution over time. As a result of this interactional process, the student ultimately decides either to stay involved or to leave the educational environment.

Although one cannot underestimate the significance of post-entry educational experiences, it is pre-entry attributes associated with motivational factors and intent as an indicator of commitment to graduation that may provide insight into understanding how students ultimately respond to their educational environment. The lack of consistent research results across institutions, especially related to at-risk students' persistence and academic success, further exemplifies the need for baseline data to aid in understanding the motivational factors that can affect the way students respond to the institutional culture and longitudinal experiences at a metropolitan university.

CHAPTER 3

METHODS

Research Design

This study embodied a descriptive research design employing the use of appropriate multiple regressions, multiple correlations, multiple discriminant analyses, and bivariate correlations (Pearson product moment, point-biserial, and partial correlations) to analyze the selected predictor College Student Inventory (CSI) factors listed below and defined in Appendix A. The Statistical Analysis System (SAS), Release 7.0 TS Level 00P1 for Windows Version 4.10.1998, was used to perform the statistical calculations. The CSI factors were analyzed with the separate criterion variables of academic success, as measured by cumulative grade point average; and persistence, as measured by enrolled status. At-risk first-time fall 1994 freshmen were included in the study and were limited to those who are United States citizens and permanent residents. Cumulative grade point averages were obtained from the University of North Texas Student Information Management System (SIMS) at the beginning of the fall 1995 semester and at the end of summer 1998. Persistence data were obtained from SIMS for the 1995-96 and 1997-98 academic years.

The CSI data measure the general construct that Stratil and Schreiner (1993) described as "risk level" or "ability to succeed or persist in college" (p. 167). From the literature and the CSI Technical Guide section of the Retention Management System Coordinator's Manual, the following factors were found to be associated with academic success and persistence or attrition and were used in this study (see Appendix A for factor definitions).

The predictor factors when academic success is the criterion variable include dropout proneness, study habits, desire to finish college, family emotional support, and receptivity to academic assistance. The predictor factors when enrollment status is the criterion variable include dropout proneness, study habits, desire to finish college, family emotional support, sense of financial security, receptivity to social enrichment, receptivity to career counseling, initial impressions, and desire to transfer schools.

Population

The University of North Texas is a large metropolitan university located north of the Dallas/Fort Worth Metropolitan area. It offers a wide array of degree options, with over 80 bachelor's, 90 master's, and 40 doctoral programs of study (University of North Texas, 1999). More than two-thirds of the University of North Texas' students work part- or full-time, and approximately one-half commute from outside the city of Denton (University of North Texas, 1997).

Data are presented in Table 1 for the time period of this study. Of the 2,046 fall 1994 first-time freshmen, 202 students were admitted to the Texas

Table 1
Enrollment at the University of North Texas

Enrollment	Fall 1994	Fall 1998
Undergraduates	19,018	19,461
Average age	23	22
Males	9,401	9,083
Females	9,617	10,378
First-time freshmen	2,049	2,729
Regular admits	1,522	2,020
Individual approvals	527	709
New transfers	2,775	2,634
Whites	15,282	14,883
Blacks	1,341	1,753
Hispanics	1,209	1,493
Full-time	13,913	14,887
Part-time	5,105	4,574
Graduates	6,587	6,053
University total	25,605	25,514

Academy of Mathematics and Science (TAMS). Undergraduate males and females were almost evenly distributed; however, ethnic categories varied, with enrollment of Whites at 15,282 (80.4%), Blacks at 1,341 (7.1%), Hispanics at 1,209 (6.4%), and all others at 1,186 (6.2%). Fall 1998 showed a slight decline of 2.6% in White enrollment and significant increases of 30.7% in Black and 23.5% in Hispanic first-time freshmen. There was also an increase of 7.9% in females, with a corresponding 3.4% decrease in males. Average undergraduate age remained 23 years of age, and full-time enrollment status increased from 73% to 76%. Although there was a slight decline in enrollment from fall 1994 to fall 1998, total undergraduate enrollment increased by 443 (2.3%) (University of North Texas, 1995, 1999). New first-time freshmen increased 680 or 33.2%, whereas new transfers decreased 5.1%. From Table 1, including TAMS students, the numbers of first-time freshmen admitted via individual approval were 527 (25.7%) in fall 1994 and 709 (26%) in fall 1998. Excluding TAMS students, the percentages increased to 28.4% and 28%, respectively.

The ethnic breakdown of first-time freshmen admitted by individual approval is shown in Table 2. From the table, the number of Black students admitted by the individual approval process is disproportional to the population. Hispanic students are admitted almost equally in both categories, and White students are less often admitted via individual approval.

Because data were available in electronic format and computer statistical analysis tools were used, the entire fall 1994 cohort of first-time freshmen who met the individual approval admission and other selection criteria were

Table 2

Fall First-Time Freshmen Admission Status by Ethnic Groups

Admit status	1994 Regular		1994 Individual		1998 Regular		1998 Individual	
	<u>n</u>	%	<u>n</u>	%	<u>n</u>	%	<u>n</u>	%
White	1,187	78	370	70	1,474	73	484	68
Black	92	6	85	16	196	10	146	21
Hispanic	95	6	42	8	162	8	58	8
Other	148	10	30	6	188	9	21	3
Total	1,522	100	527	100	2,020	100	709	100

included rather than selecting a random sample from the population. As recommended by Kerlinger (1992), the largest possible number of subjects who met the selection criteria were used to reduce error resulting from small samples. The number of CSI factors included in the multiple regression analysis and the goal to determine the variance accounted for by CSI factors dictate a maximum number of subjects in each group.

Instrument

The CSI, first published in 1984, was developed by Michael L. Stratil. The purpose of the instrument was to identify the motivational variables most closely associated with academic success and persistence in college. As stated in the introduction, the CSI has been incorporated into the Noel-Levitz, Inc., Retention Management System as the basis for early identification of at-risk students and as a tool in the development of retention strategies for students with similar profile results (Stratil & Schreiner, 1993). The instrument is in Appendix C, and a sample student report is located in Appendix D. Over 80,000 college and university students completed the instrument in the 1998-99 academic year (Richter, 1999).

The original CSI version was field tested, and expert judges provided input as to item content. Revisions were incorporated into the 1988 release of the inventory, and the 1988 form is the basis for this study. The inventory is comprised of 194 item questions that include 26 motivational factors for which scores are reported, with 19 of these considered to be major scales. The scales are structured around five main categories, including (a) initial impression of the institution, (b) academic motivation, (c) general coping skills, (d) social motivation, and (e) receptivity to support services. The instrument also contains single items related to demographics that offer a basis for advisors to relate to the student's background and interests. After the CSI is scored, student raw scores are translated into percentile ranks and represented as a point on a graph on an individualized student report for use by advisors

and counselors (Stratil & Schreiner, 1993). See Appendix D for a sample report.

The academic motivation scale provides advisors with an assessment of a student's educational stress, predicted academic difficulty, dropout proneness, and receptivity to institutional help. Scaled priority scores, a weighted value formula taking into consideration a student's need for a particular resource or service, and his or her expressed interest in that resource or service, are computed. This interest indicator allows advisors to make the best possible use of their time by focusing on the needs of those students who will most likely benefit from institutional efforts (Stratil & Schreiner, 1993).

The CSI has been established as a valid and reliable instrument with a normative data sample of over 4,900 students from 46 colleges and universities. Scores are reported for individual students in percentiles or stanines and form a valuable point of reference for interpreting scores. Procedures focused on developing a highly reliable instrument to measure motivation. "As a result . . . , the CSI's 19 major independent scales have an average homogeneity coefficient (coefficient alpha) of .80 despite the average length of only 8.5 items " (Stratil & Schreiner, 1993, p. 166). Content, construct, and predictive validity have been found to be statistically sound; however, assessment of the CSI is an ongoing process as the normative database expands. Item questions were structured for the accurate measurement of particular variables, and techniques were employed to reduce false positive responses to ensure a high level of content validity.

The CSI can predict college grade point average quite well with "14 of the scales accounting for 23% of the variance in first-year GPA [grade point average] (multiple $r = .48$), a figure which compares favorably to that found in other research" (Stratil & Schreiner, 1993, p. 179). In other studies the CSI was able to distinguish between persisters and nonpersisters in approximately 70% of the cases when controlling high school grade point average. Overall, results concluded that the CSI is a more effective predictor of 1st-year grade point average than enrollment status; however, it is a better tool than using high school grade point average alone (Stratil & Schreiner, 1993, p. 181).

Procedure for Data Collection

Trent Petrie, Associate Professor of Psychology and faculty coordinator of the University Courses (UCRS) 1000 course sections, administered the CSI to 852 students admitted to the University of North Texas via individual approval in fall 1994. As many as 527 of these students could be first-time freshmen. The answer forms were sent to Noel-Levitz for scoring, and printed student summary reports were provided to Petrie several weeks later. CSI score data were obtained from Noel-Levitz in the necessary digital formats to conduct this study. Detailed CSI inventory answers to all item questions as well as summary scale scores were obtained on diskettes, along with student social security numbers and self-reported demographic data, as seen in the Advisor/Counselor Report in Appendix D and the actual CSI instrument in Appendix C. Using social security number as the key identifier, this file was

compared to the SIMS database, and matching records of first-time freshmen admitted by individual approval were selected. Additional information drawn from SIMS included cumulative grade point average as of August 1995; cumulative grade point average as of August 1998; enrolled status 1995-96 academic year (present one or more semesters); and enrolled status 1997-98 academic year (present one or more semesters).

Subjects

In fall 1994 there were 527 actual new students admitted via individual approval, and 326 (61.9%) returned fall 1995 (Naugher, 1996). Given an estimated 95% of these students completing the CSI, there were approximately 500 subjects considered initially for this study and 310 returning in the 2nd year. There were 412 initial subjects in this study, with 409 suitable for analysis. From CSI self-report data, there were 224, or 55% females, and 185, or 45% males, in the sample. The ethnic breakdown for this at-risk group was 69% White as compared to 78% White regular admits, 15% Black as compared to 6% Black regular admits, and 7% Hispanic as compared to 6% Hispanic regular admits. See Table 2 for regular admit and individual approval data. Also, from CSI student reported data, 64% of the subjects' mothers and 55% of the subjects' fathers were not college graduates. With grade point average as the criterion variable and five predictor variables, there were 81 subjects per variable in the study. With persistence as the criterion variable and nine predictive factors to be analyzed, there were 45 subjects per variable.

Data Analysis

The CSI score records were obtained from Noel-Levitz, Inc., on diskette, and this file was used to begin the matching/selection process for the fall 1994 students from the SIMS database. After the SIMS data were selected and downloaded into a delimited ASCII file format, the data were processed as appropriate, using multiple regressions, multiple correlations, multiple discriminant analyses, and bivariate correlations (Pearson product moment, point-biserial, and partial correlations), as dictated by the research design. The Statistical Analysis System (SAS), Release 7.0 TS Level 00P1 for Windows Version 4.10. 1998 was used to perform the statistical calculations. Null hypotheses were developed and tested at a .05 level of significance, using appropriate F and t distribution tables in Hinkle, Wiersma, and Jurs (1994) and reported for each statistic in suitable tables. Discussion, analysis, conclusions, and recommendations for future research are presented as relevant.

CHAPTER 4

RESULTS

Introduction

This study investigated the extent to which selected College Student Inventory (CSI) motivational factors predict at-risk first-time freshmen academic success and persistence at the University of North Texas. The predictor factors, when academic success is measured by cumulative grade point average as the criterion variable, include dropout proneness, study habits, desire to finish college, family emotional support, and receptivity to academic assistance. The predictor factors, when enrollment status is the criterion variable, include dropout proneness, study habits, desire to finish college, family emotional support, sense of financial security, receptivity to social enrichment, receptivity to career counseling, initial impressions, and desire to transfer schools. The research design employed the use of appropriate multiple regressions, multiple correlations, multiple discriminant analyses, and bivariate correlations (Pearson product moment, point-biserial, and partial correlations) to analyze the data with Statistical Analysis System (SAS) for Windows. Coefficient alphas for the national sample and the University of North Texas sample are presented below.

Reliabilities

The CSI Coordinator's Manual reported an average homogeneity coefficient alpha of .80 for the 19 major independent scales, despite an average length of only 8.5 items per scale (Stratil & Schreiner, 1993, p. 166). Michael Stratil, author of the CSI, was contacted, and he provided the individual scale reliability normative data for the 19 major CSI scales. To examine whether reliability data for the University of North Texas at-risk sample ($N = 409$) was similar to the national sample ($N = 1,030$), coefficient alphas (Cronbach, 1970) were computed for the 8 major scales used in this study and are included in Table 3. In addition to the 8 major scales, 2 additional scales were used in this study. Stratil also provided the scoring information to compute the reliability factors for these additional factors as presented in Table 4.

Research Questions and Hypotheses Tested

Research Question 1

Research question 1 asked what individual and combined variances are accounted for by selected CSI predictor factors specified in the Research Design and defined in Appendix A when the criterion variable is grade point average at the beginning of the 2nd year. For the first research question, significant results were obtained. The R of .29 was significant ($F_{5,403} = 7.42$, $p < .0001$), accounting for 8% of the shared variance. The linear combination

Table 3

Coefficient Alphas for the National Sample and the University of North Texas Sample

Scale	National sample (<u>N</u> = 1,030)	UNT sample (<u>N</u> = 409)
Study habits	.88	.90
Desire to finish college	.84	.84
Family emotional support	.87	.88
Sense of financial security	.83	.84
Receptivity to social enrichment	.62	.69
Receptivity to academic assistance	.79	.76
Receptivity to career counseling	.81	.79
Initial impression	.81	.83

Note. UNT = University of North Texas. Source for first column of data is M. Stratil (personal communication, July 16, 1999).

Table 4

Coefficient Alphas for Additional Scales Used in This Study

Scale	National sample (<u>N</u> = 1,030)	UNT sample (<u>N</u> = 409)
Desire to transfer schools	N/A	.85
Dropout proneness	N/A	.89

Note. UNT = University of North Texas.

of predictor variables (see Table 5) was significantly correlated with grade point average at the beginning of the 2nd year. Moreover, four of the five predictor variables (except receptivity to academic assistance) were significantly correlated individually with grade point average at the beginning of the 2nd year (see Table 6), accounting for 2% to 4% shared variance.

Table 5

Linear Combination of Predictor Variables With Grade Point Average at the Beginning of the 2nd Year

Parameter	Estimate and beta weights
Intercept	27.83595710
Study habits	-0.09251559
Desire to finish college	-0.10182620
Family emotional support	-0.09765249
Receptivity to academic assistance	0.11082798
Dropout proneness	-0.10283231

Research Question 2

Research question 2 asked what individual and combined variances are accounted for by selected CSI predictor factors specified in the Research Design and defined in Appendix A when the criterion variable is grade point

Table 6

Pearson Correlation Coefficients and Variance for 2nd- and 4th-Year Grade Point Averages

Variables	2 nd year GPA		4 th year GPA	
	Pearson r	r^2	Pearson r	r^2
Study habits	0.21***	0.04	0.22***	0.05
Desire to finish college	0.13**	0.02	0.12*	0.01
Family emotional support	0.13**	0.02	0.11*	0.01
Receptivity to academic assistance	0.06	0.00	0.02	0.00
Dropout proneness	-0.19***	0.04	-0.20***	0.04

Note. GPA = grade point average. * $p < .05$. ** $p < .01$. *** $p < .0001$

average at the end of the 4th year. For the second research question, significant results were obtained. The R of .28 was significant ($F_{5,403} = 7.42$, $p < .0001$), accounting for 8% of the shared variance. The linear combination of predictor variables (see Table 7) was significantly correlated with grade point average at the end of the 4th year. All five predictor variables except Receptivity to Academic Assistance were significantly correlated individually with 4th-year grade point average (see Table 6) accounting for 1% to 5% shared variance.

Table 7

Linear Combination of Predictor Variables With Grade Point Average at the End of the 4th Year

Parameter	Estimate and beta weights
Intercept	25.52992757
Study habits	-0.08227801
Desire to finish college	-0.09217418
Family emotional support	-0.09010208
Receptivity to academic assistance	0.09667459
Dropout proneness	-0.09324142

Research Question 3

Research question 3 asked whether the variance accounted for by selected CSI factors specified in the Research Design and defined in Appendix A, using grade point average as the criterion variable, changed at the end of 4 years as compared to the beginning of the 2nd year. For research question 3, no significant change in variance accounted for by these predictors of grade point average was detected. The R^2 of .29 for the beginning of the 2nd year was not found to be different from the R^2 of .28 for the end of the 4th year ($t_{406} = 1.39, p > .05$).

Hypothesis 1

Hypothesis 1 stated that persisters would have a higher grade point average than nonpersisters. Due to lack of homogeneity of variance, a t -test for unequal variances was computed between persisters and nonpersisters on grade point average at the beginning of the 2nd year. The test was significant ($t_{194} = 10.38, p < .0001$), accounting for 36% of the variance. The mean grade point average for persisters ($M = 2.45$) was higher than for nonpersisters ($M = 1.47$). The first hypothesis was supported for the time frame reflecting the 2nd year. Again, due to lack of homogeneity of variance, a t -test for unequal variances was computed between persisters and nonpersisters on grade point average at the end of the 4th year. The test was significant ($t_{342} = 9.72, p < .0001$) accounting for 33% of the variance. The mean grade point average for persisters ($M = 2.58$) was higher than for nonpersisters ($M = 1.65$). The first hypothesis was also supported for the time frame reflecting the 4th year.

Hypothesis 2

Hypothesis 2 stated that CSI predictor factors significantly discriminate between persisters and nonpersisters in the 2nd year. Multiple discriminant analysis produced significant results. The linear combination of the predictor variables (see Table 8) significantly discriminated between persisters and nonpersisters (Wilks' $F_{9,399} = 2.36, p = .0133$) accounting for 5% of the variance. The classification matrix (see Table 9) revealed that 21 (15%) of nonpersisters were correctly classified by the predictors and 119 (85%) were

Table 8

Linear Discriminant Functions at the Beginning of the 2nd Year

Variable	Nonpersisters	Persisters
Constant	-956.05701	-957.93406
Study habits	7.26588	7.25847
Desire to finish college	6.77163	6.77875
Family emotional support	6.39615	6.39170
Sense of financial security	0.52107	0.53814
Receptivity to social enrichment	-1.97930	-1.96261
Receptivity to career counseling	-2.06328	-2.02742
Initial impression	0.51926	0.54367
Desire to transfer schools	2.25720	2.28717
Dropout proneness	6.48142	6.47446

incorrectly classified as persisters. Also, 256 (95.17%) of the persisters were correctly classified, and 13 (4.83%) were incorrectly classified as nonpersisters.

Hypothesis 3

Hypothesis 3 stated that CSI predictor factors significantly discriminate between persisters and nonpersisters at the end of the 4th year. Multiple discriminant analysis produced significant results. The linear combination of

Table 9

Classification Matrix at the Beginning of the 2nd Year

From 2 nd year	Nonpersisters		Persisters		Total	
	<u>n</u>	%	<u>n</u>	%	<u>n</u>	%
Nonpersisters	21	15.00	119	85.00	140	100.0
Persisters	13	4.83	256	95.17	269	100.00
Total	34	8.31	375	96.69	409	100.00
Priors		34.23		65.77		

the predictor variables (see Table 10) significantly discriminated between persisters and nonpersisters (Wilks' $F_{9,399} = 2.36$, $p = .0133$) accounting for 5% of the variance. The classification matrix (see Table 11) revealed that 134 (63.81%) of nonpersisters were correctly classified by the predictors and 76 (36.19%) were incorrectly classified as persisters. Also, 120 (60.30%) of the persisters were correctly classified, and 79 (39.70%) were incorrectly classified as nonpersisters.

Research Question 4

Research question 4 asked what are the apparent patterns of the relationships of the CSI factors used in this study to the criteria variables of grade point average and persistence in the 2nd and 4th years. The correlational

Table 10

Linear Discriminant Functions at the End of the 4th Year

Variable	Nonpersisters	Persisters
Constant	-964.53291	-958.19266
Study habits	7.31210	7.28847
Desire to finish college	6.81609	6.79412
Family emotional support	6.47304	6.43415
Sense of financial security	0.49052	0.50679
Receptivity to social enrichment	-1.95650	-1.96707
Receptivity to career counseling	-2.18828	-2.12352
Initial impression	0.50023	0.51110
Desire to transfer schools	2.30721	2.28367
Dropout proneness	6.54683	6.51357

(see Table 6) patterns of predictors for grade point average at the beginning of the 2nd year and end of the 4th year are isomorphic. Moreover, all of the predictor variables except Receptivity to Academic Assistance were significantly correlated individually with grade point average at the beginning of the 2nd year and the end of the 4th year.

All predictor variables in the multiple regression analysis with grade point average as the criterion variable were significant and contributed unique

Table 11

Classification Matrix at the End of the 4th Year

From 4 th year	Nonpersisters		Persisters		Total	
	<u>n</u>	%	<u>n</u>	%	<u>n</u>	%
Nonpersisters	134	63.81	76	36.19	210	100.00
Persisters	79	39.70	120	60.30	199	100.00
Total	34	8.31	375	96.69	409	100.00
Priors		51.35		48.66		

variance to the overall multiple regression model (see Table 12) at the beginning of the 2nd year.

Table 12

Grade Point Average Predictor Probabilities and Unique Variances at the Beginning of the 2nd Year

Source	<u>DF</u>	Type III		<u>F</u> -value	<u>p</u> > <u>F</u>	Unique variance
		<u>SS</u>				
Study habits	1	7.12207181		9.20	0.0026	0.02
Desire to finish college	1	8.66638617		11.19	0.0009	0.03
Family emotional support	1	8.35898646		10.80	0.0011	0.02
Academic assistance	1	10.86635617		14.03	0.0002	0.03
Dropout proneness	1	9.37931478		12.11	0.0006	0.03

All predictor variables in the multiple regression analysis with grade point average as the criterion variable were significant and contributed unique variance to the overall multiple regression model (see Table 13) at the end of the 4th year, thus revealing yet another isomorphic pattern.

Table 13

Grade Point Average Predictor Probabilities and Unique Variances at the End of the 4th Year

Source	<u>DF</u>	Type III <u>SS</u>	<u>F</u> -value	<u>p</u> > <u>F</u>	Unique variance
Study habits	1	5.63305567	7.54	0.0063	0.02
Desire to finish college	1	7.10129525	9.50	0.0022	0.02
Family emotional support	1	7.11633856	9.52	0.0022	0.02
Academic assistance	1	8.26817635	11.07	0.0010	0.03
Dropout proneness	1	7.71133639	10.11	0.0014	0.02

Point bi-serial correlation coefficient patterns for persisters and nonpersisters at the beginning of the 2nd year and end of the 4th year are not isomorphic (see Table 14). The variables desire to finish college, receptivity to career counseling, initial impressions, and dropout proneness (negatively correlated) were significantly correlated in both time periods. The variables sense of financial security and desire to transfer (negatively correlated) were

Table 14

Point Bi-Serial Correlation Coefficients for Persistence in the 2nd and 4th Years,
N = 409

Variable	2 nd year		4 th year	
	r_{pb}	p	r_{pb}	p
Study habits	0.07	0.14	0.12	0.02
Desire to finish college	0.13	0.01	0.10	0.04
Family emotional support	0.10	0.05	0.03	0.49
Sense of financial security	0.09	0.07	0.07	0.15
Receptivity to social enrichment	0.10	0.04	0.03	0.59
Receptivity to career counseling	0.12	0.02	0.15	0.00
Initial impressions	0.15	0.00	0.11	0.02
Desire to transfer	-0.03	0.55	-0.08	0.10
Dropout proneness	-0.11	0.03	-0.12	0.02

not correlated significantly in either time period. The p values of the other three variables were significant at one time period and not the other.

Patterns of univariate tests between means of persisters and nonpersisters in the 2nd and 4th years are not isomorphic (see Tables 15 and 16). The variables desire to finish college, receptivity to career counseling, initial impressions, and dropout proneness have significant t values in the 2nd and 4th years. The variables sense of financial security and desire to transfer

Table 15

Univariate Tests Between Means of Persisters and Nonpersisters in the 2nd Year

Variable	\underline{t} value	$\underline{p} > \underline{t}$	\underline{R}^2	Persisters	Nonpersisters
Study habits	1.49	0.1379	0.00	52.73	50.64
Desire to finish college	2.62	0.0092	0.02	58.29	55.74
Family emotional support	1.93	0.0539	0.00	56.11	53.71
Sense of financial security	1.79	0.0734	0.00	19.36	18.07
Social enrichment	2.11	0.0353	0.01	17.96	16.69
Career counseling	2.37	0.0183	0.01	24.81	23.00
Initial impressions	3.10	0.0021	0.02	81.53	77.51
Desire to transfer	0.59	0.5528	0.00	7.20	7.45
Dropout proneness	2.18	0.0297	0.01	122.46	128.84

did not have significant \underline{t} values in either time period. The \underline{p} value of the remaining three variables (study habits, family emotional support, and receptivity to social enrichment) were significant at one of the time periods and not the other.

Patterns of classification matrixes for persisters and nonpersisters in the 2nd and 4th years are not isomorphic. In the 2nd year (see Table 9) 21 (15%) of nonpersisters were correctly classified by the predictors, and 119 (85%) were incorrectly classified as persisters. Also, 256 (95.17%) of the persisters were

Table 16

Univariate Tests Between Means of Persisters and Nonpersisters in the 4th Year

Variable	t value	p > t	R ²	Persisters	Nonpersisters
Study habits	2.40	0.0168	0.01	53.66	50.46
Desire to finish college	2.06	0.0402	0.01	58.40	56.49
Family emotional support	0.69	0.4885	0.00	55.71	54.89
Sense of financial security	1.45	0.1491	0.00	19.42	18.44
Social enrichment	0.54	0.5916	0.00	17.68	17.38
Career counseling	3.13	0.0019	0.02	25.35	23.09
Initial impressions	2.30	0.0220	0.01	81.62	78.77
Desire to transfer	1.65	0.0999	0.00	6.95	7.60
Dropout proneness	2.38	0.0180	0.01	121.26	27.84

correctly classified, and 13 (4.83%) were incorrectly classified as nonpersisters. In the 4th year (see Table 11), 134 (63.81%) of the nonpersisters were correctly classified by the predictors, and 76 (36.19%) were incorrectly classified. Of the 4th year persisters, 79 (39.70%) were incorrectly classified as nonpersisters, and 120 (60.30%) were correctly classified as persisters.

Chapter 4 contains reliability data for the CSI national sample and the University of North Texas sample used in this study. Also reported are the

results of the data analysis used to address each of the four research questions and the three hypotheses. Discussion of conclusions, implications, and recommendations for future research are presented in chapter 5.

CHAPTER 5

DISCUSSION AND RECOMMENDATIONS

Introduction

This study focused on the extent to which selected motivational factors predict academic success and persistence of at-risk first-time freshmen at the University of North Texas. The purpose was to determine the variance accounted for by selected factors in predicting separate criterion variables of grade point average and persistence in the 2nd and 4th years and to answer and/or address the specific research questions and hypotheses presented in the conclusion section.

In one article, Lenning, Beal, and Sauer (1980) concluded that the most significant model contributing to the study of retention and attrition is that proposed by Spady (1970, 1971) and refined by Tinto (1975). The later model, of course, focused on the student and the institutional environment relationships that may result in withdrawal, and it formed the basis for this study of preenrollment attributes and motivational factors that predicted the ability of at-risk students to succeed academically and persist at a large metropolitan university.

Retention research literature has referenced a number of instruments (Baker & Schultz, 1992; Krotseng, 1992; Pascarella & Terenzini, 1980; Wolfe,

1993) used to predict student success and persistence in colleges and universities. One of these is the College Student Inventory (CSI), which this study used. It is composed of 19 major scales, of which this study used 8, plus 2 additional scales labeled as dropout proneness and desire to transfer. "The CSI attempts to measure the 'person' half of the person-environment equation" associated with Tinto's model of student departure (Stratil & Schreiner, 1993 p. 183). It was administered in this study during the first 2 weeks of classes to at-risk first-time students admitted by individual approval and entering the University of North Texas fall 1994, and it forms the basis for this study. Retention/attrition research is plentiful; however, results previously were not readily transferable from one campus to another and tended to reflect whom a college admitted rather than how effective an institution was relative to retention (Astin, 1993; Wilder, 1992). Researchers also pointed to the difficulties associated with developing a single research definition of leaving behavior (Pascarella, 1982; Tinto, 1982), which further affected the ability to generalize research results and reinforced the need for individual institutions to conduct their own retention studies over extended time periods (Wilder, 1992).

As noted in chapter 2, factors having an impact on at-risk student persistence were identified by Levine and Levine (1991) as academic preparedness, the ability to adapt to college, commitment to educational goals, perception of progress, reasons for pursuing a college degree, self-confidence, willingness to seek academic assistance, and family background characteristics.

In summary, the literature previously reviewed pointed to the complex nature of the retention/attrition processes, the effect of institutional characteristics, and the difficulties of generalizing or expanding the body of knowledge from theoretically-based research results centered on Tinto's longitudinal model of institutional departure.

In this study, research questions and hypotheses focused on the amount of variance accounted for by selected CSI factors with grade point average and enrollment status as separate criterion variables at two different time periods and whether these factors discriminated between persisters and nonpersisters. The apparent patterns of these relationships at the beginning of the 2nd year and end of the 4th of study for at-risk students were also of interest. It was also hypothesized that persisters would have higher grade point averages than nonpersisters and that CSI factors would discriminate between the two groups during both time periods. The importance of studying at-risk students was to learn more about the dynamic nature of academic performance and persistence for this group, with the expectation being ultimately to aid the development of strategies to improve retention and graduation rates for greater numbers of socioeconomically and educationally disadvantaged individuals.

Methods

At-risk first time fall 1994 freshmen were included in the study and limited to those who were United States citizens and permanent residents. Cumulative grade point averages were obtained from the University of North

Texas Student Information Management System (SIMS) at the beginning of the fall 1995 semester and at the end of summer 1998. Persistence (enrollment for the relevant times assessed) data were obtained from SIMS for the 1995-96 and 1997-98 academic years.

The predictor factors when grade point average was the criterion variable included dropout proneness, study habits, desire to finish college, family emotional support, and receptivity to academic assistance. The predictor factors when enrollment status was the criterion variable included dropout proneness, study habits, desire to finish college, family emotional support, sense of financial security, receptivity to social enrichment, receptivity to career counseling, initial impressions, and desire to transfer schools.

This study used a research design employing appropriate multiple regressions, multiple correlations, multiple discriminant analyses, and bivariate correlations (Pearson product moment, point-bi-serial, and partial correlations) for data analysis with the Statistical Analysis System (SAS) Release 7.0 for Windows. The predictor factors were tested in relation to the separate criterion variables of grade point average and enrolled status.

Summary, Discussion, and

Conclusions

The following research questions and hypotheses were examined and tested:

Research Question 1

Research question 1 asked what individual and combined variances are accounted for by the five CSI predictor factors (see Appendix A) when the criterion variable is grade point average at the beginning of the 2nd year. For the first research question, the predictor variables (study habits, desire to finish college, family emotional support, receptivity to academic assistance and dropout proneness) with grade point average as the criterion variable accounted for 8% of the shared variance, and regression results were significant. The linear combination of predictor variables (see Table 5) was significantly correlated with grade point average at the beginning of the 2nd year. Moreover, all of the predictor variables except receptivity to academic assistance were significantly correlated individually with grade point average at the beginning of the 2nd year (see Table 6), accounting for 2% to 4% shared variance. Study habits and dropout proneness accounted for the greatest variance, whereas desire to finish college and family emotional support accounted for lesser amounts of variance; however, all individually do not account for a great deal of variance for at-risk students grade point average in the 2nd year.

These results are similar to Stratil and Schreiner's (1993) contention "that the CSI is highly predictive of student success, when that success is defined in terms of first-year college GPA [grade point average]" (p. 172). Findings are also consistent with those reported by Levin and Levin (1991),

who noted the impact that similar motivational factors can have on academic performance, along with academic preparedness. These researchers also acknowledged the complex interactive effect of academic preparedness (or lack of) and motivation on an at-risk student's likelihood of sustaining a grade point average at least high enough to remain in college and eventually graduate.

The lack of correlation between receptivity to academic assistance and grade point average may be explained in several ways. First, it may have been due to at-risk students having difficulty recognizing their problems, identifying available assistance, and seeking help in a timely manner (Levin & Levin, 1991, p. 325). Second, parents of more than one-half of this group of at-risk students did not complete a college degree and, therefore, may not have been able to provide assistance to their students in identifying academic problems and options for assistance. This might also explain the weaker contribution of family emotional support as a predictor variable and reinforces Tinto's (1975) position that family characteristics, especially socioeconomic status and educational level, can have an effect on student persistence. Lastly, the CSI was administered at the beginning of the semester before knowledge of academic difficulties was apparent. Items such as, "I would like to receive some help in improving my study habits" and "I would like to receive tutoring in one or more of my courses" may not have been as relevant at the time the CSI questionnaire was completed during the first 2 weeks of classes.

From the results of research question 1, we can conclude that selected CSI variables do predict 2nd year grade point average for at-risk students. While individual predictors account for limited variance, collectively they account for 8% of the variance which can be meaningful in the delivery of retention programs for students with borderline grade point averages.

Research Question 2

Research question 2 asked what individual and combined variances are accounted for by selected CSI predictor factors when the criterion variable is grade point average at the end of the 4th year. For the second research question, the predictor variables (study habits, desire to finish college, family emotional support, receptivity to academic assistance and dropout proneness) again accounted for 8% of the shared variance, and the regression results were significant. The linear combination of predictor variables (see Table 7) was significantly correlated with grade point average at the end of the 4th year. Predictor variables, with the exception of receptivity to academic assistance, were significantly correlated individually with 4th-year grade point average (see Table 6), accounting for 1% to 5% shared variance. While four of the five selected CSI variables continue to predict grade point average at the end of the 4th year, receptivity to academic assistance was not individually correlated with grade point average during this time frame or at the first time frame. The results for research questions 1 and 2 are isomorphic, and the interpretations of the results are essentially the same for both research questions.

Overall, these findings suggest that students who have not yet fully experienced the academic demands of a metropolitan university may not be able to accurately assess their need for academic assistance as compared to their academic preparedness and previous high school academic performance. A major finding for both time periods is the ability of predictors of grade point average to sustain over time for at-risk students. While individual predictors do not account for a great deal of variance, collectively they accounted for 8% of the variance, which is admittedly low. However, with low and borderline grade point averages, predicting 4th-year grade point averages may be critical. The mean grade point averages in the 2nd and 4th years, respectively, for persisters ($\underline{M} = 2.45$ and $\underline{M} = 2.58$) were higher than for nonpersisters ($\underline{M} = 1.47$ and $\underline{M} = 1.65$). Proactive retention intervention programs with an academic focus could bring a "D" at-risk student nonpersister up to "C" level persister and avoid academic dismissal.

Research Question 3

Research question 3 asked whether the variance accounted for by the five predictor variables, with grade point average as the criterion variable, changes at the end of 4 years as compared to the beginning of the 2nd year. For research question 3, with grade point average as the criterion variable, no significant change in variance accounted for by the five predictors (study habits, desire to finish college, family emotional support, receptivity to academic assistance, and dropout proneness) in the 2nd and 4th years was

detected. These factors appear to be stable over time, and these results were consistent with what was found in the first two research questions. Not only can we predict grade point average in the 2nd and 4th years, but no changes in the ability to predict overtime were detected.

Hypothesis 1

Hypothesis 1 stated that persisters would have a higher grade point average than nonpersisters. This hypothesis was supported for both time frames reflecting the 2nd and 4th years. The t -test for unequal variances was significant and accounted for 36% of the variance in the 2nd year and 33% in the 4th year. The mean grade point averages for persisters in the 2nd and 4th year, respectively ($\underline{M} = 2.45$ and $\underline{M} = 2.58$), were higher than for nonpersisters ($\underline{M} = 1.47$ and $\underline{M} = 1.65$).

Considering that the focus of this study was at-risk freshmen, this finding is not surprising, especially given that low grade point average brings about suspension and 18.34% of the sample were found to be academically ineligible during their last semester of enrollment. With a mean grade point average of 1.47 for nonpersisters in the 2nd year, it is obvious that a significant number of these students failed to maintain the necessary grade point average to remain in good standing and eligible to reenroll. The minimum grade point average is 1.8 for freshmen with 29 or fewer classification hours or 2.0 for all other undergraduates (University of North Texas, 1998, p. 50). During the 2nd year, there were 269 persisters and 140 nonpersisters for a retention rate of

66%. By the end of the 4th year, there were 199 persisters and 210 nonpersisters, for a retention rate of 49%. Interestingly, 13 (9.3%) of the nonpersisters in the 2nd year returned as persisters in the 4th year. The mean grade point average for persisters was virtually a full grade point higher than that of nonpersisters in the 2nd year and almost a full grade point higher at the end of the 4th year, which is a significant gap.

SIMS withdrawal status data revealed that, by the end of the 4th year, 48 (12%) of the 409 subjects had voluntarily withdrawn from the university as opposed to completing one or more semesters and then dropping out, stopping out, or transferring to another institution. Of the 48 who withdrew, 71% checked personal (which includes transfer to another institution) and 10% checked financial difficulties as the two most frequent self-reported reasons for withdrawal.

While support found for this hypothesis was not highly enlightening and may have been obvious, it did at least provide a cross check on the validity of some of the data used in this study. The introduction in chapter 1 and literature review in chapter 2 pointed to various reasons for nonpersistence. Some of those cited included financial difficulties, accomplishment of educational objectives, personal reasons, and academic difficulties (Cabrera et al., 1992; Chaney & Farris, 1991; Tinto, 1982). For this group of at-risk students, however, grade point average appears to be a meaningful predictor of persistence. Moreover, given that the five CSI factors predicted grade point

average and grade point average differed between persisters and nonpersisters, the rationale for hypothesis 2 appears to have been warranted.

Hypothesis 2

Hypothesis 2 stated that CSI predictor factors (study habits, desire to finish college, family emotional support, sense of financial security, receptivity to social enrichment, receptivity to career counseling, initial impression, desire to transfer, and dropout proneness) would significantly discriminate between persisters and nonpersisters in the 2nd year, and this hypothesis was supported. Multiple discriminant analysis produced significant results while accounting for 5% of the variance (see Table 8). The classification matrix (see Table 7) revealed, however, that, of nonpersisters, only 15% were correctly classified by the predictors, and 85% were incorrectly classified as persisters. Nevertheless, 95% of the persisters were correctly classified and 5% were incorrectly classified as nonpersisters.

Although the CSI significantly discriminated between persisters and nonpersisters during the 2nd year, it erroneously classified 85% of nonpersisting students as persisters. In the 2nd year 66% of at-risk students enrolled; however, the CSI predictors classified 97% of all the at-risk students enrolled as persisters. Therefore, it is overclassifying nonpersisters as persisting. Although results were significant, the CSI did not meaningfully discriminate between persisters and nonpersisters during the 2nd year; that is, it did not correctly classify the nonpersisters.

Hypothesis 3

Hypothesis 3 stated that the predictor factors would significantly discriminate between persisters and nonpersisters at the end of the 4th year. Using multiple discriminate analysis to test this hypothesis, it was supported.

The linear combination of the predictor variables (see Table 10) significantly discriminated between persisters and nonpersisters and accounted for 5% of the variance. The classification matrix (see Table 11) revealed that 64% of nonpersisters were correctly classified and 36% were incorrectly classified as persisters by the predictors. Also, 60% of the persisters were correctly classified, and 40% were incorrectly classified as nonpersisters. Therefore, we can conclude that predictor variables do effectively discriminate between at-risk persisters and nonpersisters at the end of the 4th year.

It appeared that the selected CSI factors (study habits, desire to finish college, family emotional support, sense of financial security, receptivity to social enrichment, receptivity to career counseling, initial impression, desire to transfer schools, and dropout proneness) were better predictors of persistence over time, given time frames such as those used in this study. This study supports the prediction by Stratil and Schreiner (1993) that "as the number of dropout students increases over a four-year (or two-year) period, one can expect the (predictive) equation's performance to improve" (p. 170). Thus, we

can conclude that the use of the CSI with at-risk students to predict enrolled status is more effective beyond the freshman and sophomore years; however, the instrument can be used to identify those students who will need long-term retention intervention services to increase the likelihood of persistence.

In the 2nd year, given that 85% of nonpersisters were misclassified, the multiple discriminant analysis in hypothesis 2 performed worse than chance for classifying nonpersisters. By the end of the 4th year, however, the same CSI values correctly classified 64% of the nonpersisters. Overall, by the end of the 4th year, the CSI factors were able to predict correct classification of both persisters and nonpersisters at approximately 24% better than chance. The question arises as to why the CSI values were better predictors at the end of the 4th year rather than the 2nd year for these at-risk students. This issue is best addressed by research question 4 on patterns.

Research Question 4

Research question 4 asked what are the apparent patterns of the relationships of the CSI factors used in this study to the criteria variables of grade point average and persistence in the 2nd and 4th years. The correlational (see Table 6) patterns of predictors (study habits, desire to finish college, family emotional support, receptivity to academic assistance, and dropout proneness) for grade point average at the beginning of the 2nd year and end of the 4th year were isomorphic. Moreover, all of the predictor variables except receptivity to academic assistance were significantly correlated individually

with grade point average at the beginning of the 2nd year and the end of the 4th year. The patterns of prediction using CSI factors associated with grade point average remained stable across both time frames, and overall regression results produced yet another isomorphic pattern. Therefore, conclusions are that selected CSI factors do predict at-risk student grade point averages over time frames used in this study.

However, patterns of CSI factors related to persistence varied in the 2nd and 4th years of the study and were not isomorphic. The treatment effect of participation in UCRS 1000 Personal and Academic Effectiveness and place of residence should be kept in mind when evaluating these results. At the time of original enrollment, 74% of the sample indicated on the CSI question 7 that they would be living in a residence hall, and another 17% said they would be living at home. From SIMS data, it was found that, by the end of the 4th year, only 6% were still living in a residence hall. Another 22% had an address in Denton, and 66% were commuting from elsewhere.

The literature contained differing research results related to freshmen orientation or retention intervention programs and place of residence. Wolfe (1993) failed to find a significant difference in commuter and resident student participation in a Freshmen Center intervention program with factors including intentions, academic and social integration, academic success, commitment, and persistence. Wolfe concluded that 1st-year intervention effects were minimal in contrast to the effect of attending college itself, living on campus, and external campus influences. As a result, Wolfe also suggested

the need for further research involving ethnic groups and longitudinal study of academic and retention patterns.

Point bi-serial correlation coefficient patterns for persisters and nonpersisters at the beginning of the 2nd year and end of the 4th year were similar, but not isomorphic (see Table 14). The variables desire to finish college, receptivity to career counseling, initial impressions, and dropout proneness (negatively correlated) were significantly correlated in both time periods and appear to be very stable over the time periods in this study. The variables sense of financial security and desire to transfer (negatively correlated) were not correlated significantly in either time period. The remaining three variables were significant at one time period and not at the other.

Patterns of univariate tests between means of persisters and nonpersisters in the 2nd and 4th years produced results (see Tables 15 and 16) similar to the point bi-serial correlations. The variables desire to finish college, receptivity to career counseling, initial impressions, and dropout proneness have significant t values in the 2nd and 4th years, and this is consistent with the point bi-serial correlation coefficient patterns reported above. The variables sense of financial security and desire to transfer did not have significant t values in either time period (consistent with point bi-serial correlation coefficient patterns). The three remaining variables were significant at one time period and not in the other.

In summary, results from research questions 1 and 2 confirmed the ability of five CSI factors (study habits, desire to finish college, family emotional support, receptivity to academic assistance, and dropout proneness) to predict grade point average of at-risk students through the 4th year of their academic career. Research question 3 results demonstrated that the ability of these five factors to predict grade point average does not change over the time periods used in this study. Hypothesis 1 supported the prediction that persisters would have a higher grade point average than nonpersisters in this group of at-risk students.

Results of hypotheses 2 and 3 supported the prediction that CSI factors (study habits, desire to finish college, family emotional support, sense of financial security, receptivity to social enrichment, receptivity to career counseling, initial impression, desire to transfer schools, and dropout proneness) would significantly discriminate between persisters and nonpersisters in the 2nd and 4th years. However, the significance of 2nd year results was misleading because the factors were classifying 95% of the subjects as persisters, when only 66% were truly in that category. By the end of the 4th year, the CSI factors were able to predict correct classification of both persisters and nonpersisters, approximately 24% better than chance.

Overall, conclusions are that selected CSI factors do significantly predict grade point average for at-risk students over both time periods used in this study; however, receptivity to academic assistance was not significantly correlated with grade point average in either time period. Additionally, selected

CSI factors do not meaningfully predict persistence in the 2nd year but do significantly predict persistence in the 4th year. Grade point average predictive pattern results were found to be isomorphic in response to research question 4, whereas those patterns associated with enrolled status were not isomorphic for both time periods.

Implications

Theoretical Implications

This research supports the use of Tinto's longitudinal model of institutional departure for the study of at-risk students, particularly as it relates to initial pre-entry attributes and goals/commitments components of the model over time. Furthermore, this research substantiates the use of selected CSI variables to predict at-risk student success and persistence at a metropolitan university. In chapter 1 it was stated, "the CSI attempts to measure the 'person' half of the person-environment" associated with Tinto's model (cited in Stratil & Schreiner, 1993, p. 183). However, this longitudinal study also suggests support for Tinto's integration concept and the effect institutional experiences and/or external factors over time can have on a student's decision to stay or leave. Results of this study indicated that CSI variables (study habits, desire to finish college, family emotional support, sense of financial security, receptivity to social enrichment, receptivity to career counseling, initial impression, desire to transfer schools, and dropout proneness) were not meaningfully predictive of persistence in the 2nd year

because of poor predictive classification but were predictive in the 4th year of enrollment, given improved classification correctness.

Three phenomena may, therefore, confound the CSI factors' ability to predict persistence at the beginning of the 2nd year. First is the required participation in UCRS 1000 Personal and Academic Effectiveness. Unknown is whether this developmental course and its academic focus on improved learning is truly effective or whether the Hawthorne Effect, simply paying attention to the subjects, increased retention. Second is the mandatory requirement that all new freshmen live in residence halls until they reach their sophomore year of study. The social support system of resident hall living and peer association may be exerting influences that counter the external variables that compete with retention in the freshman year. Finally, other residence hall retention and organized support programs may also have had an effect on the ability of CSI factors to predict persistence.

CSI predictor variables (dropout proneness, study habits, desire to finish college, family emotional support, and receptivity to academic assistance) were predictive of grade point average accounting for 8% of variance in the 2nd and 4th years for at-risk students in this study. The ability to predict 8% of a letter grade is fairly meaningful for students with marginal grade point averages and given reliability of measures, the true shared variance was very probably higher. Receptivity to academic assistance is the only variable that was not also individually correlated with grade point average at a significant level in either time period. This may be associated with the possible

mediating effect of the stigma associated with being at-risk academically and needing help or support to succeed; but, at the same time, being resistant to asking for that help or lacking an understanding of the higher education system and how to seek out assistance.

Practical Implications

Overall, the CSI appears to be an acceptable instrument for more precise identification of at-risk students who may be in need of additional support services beyond the freshman year. Persisting at-risk students had a slightly higher mean grade point average in the 2nd year ($\underline{M} = 2.12$) compared to the 4th year ($\underline{M} = 2.10$); however, 18% of the initial 409 subjects ultimately became academically ineligible to continue enrollment during the time periods of this study and were suspended. The mean grade point average for nonpersisters was approximately a full grade point average below that of persisters during both time periods. CSI results can be used to guide the use of long-term retention intervention programs to assist at-risk students in overcoming academic success and persistence barriers.

Petrie (1997) reported that the retention intervention treatment of required participation in UCRS 1000 Personal and Academic Effectiveness produced significant grade point average and retention results. Petrie stated that the fall 1994 cohort had a second semester retention rate of 80% as compared to 77% for the fall 1992 control group, which did not participate in UCRS 1000. A 9% higher retention rate for the fall 1994 cohort was also

reported for the third and fourth semesters. The fall 1994 cohort also had a significantly higher grade point average ($\bar{M} = 2.22$) than the control group ($\bar{M} = 2.11$) at the end of the first semester; however, the grade point averages for the two groups converged at the end of the second semester. Petrie suggested that poorer retention of the control group members was responsible. Alternatively, the retention intervention effects of participation in UCRS 1000 may not have had an adequate long-term effect on grade point average and persistence of at-risk students, particularly as they leave the residence halls and are faced with the challenges of commuting. Thus, the need for long-term retention programs to enhance at-risk student success is once again reinforced.

The 1st year in college is commonly acknowledged as a high-risk dropout point for all new students. However, this study also reinforces that grade point average and its relationship to academic success and persistence is a significant predictor for at-risk students with borderline grades and that it is even more critical for intensified academic assistance programs to continue well beyond the 1st year of study. With the mandated requirements of UCRS 1000 and 1st year on-campus residence, as well as joint student life and academic programs, such as the Big West project that was recently implemented at the University of North Texas, to reduce attrition and improve academic performance, students receive a great deal of attention during their 1st year of enrollment at this metropolitan university. However, retention programs beyond the 1st year are not as plentiful, nor are they as intrusive for at-risk students. For this group there is a need for more concentrated effort to track these students and

encourage use of existing resources, such as the Learning Center, tutoring, and those specialty retention units; such as the Writing Center and mathematics, and physics laboratories for assistance that are located in various schools and colleges. This appears to be especially true for at-risk students once they move from the residence halls. Two-thirds of the students in this study ultimately became commuters and were, therefore, forced to contend with external forces that compete with the motivation to complete an undergraduate degree as compared to those students residing on or near campus.

Many of the University of North Texas' schools and colleges have degree programs that require substantially higher grade point averages for admission and graduation than the minimum 2.0 university requirement for good standing relative to academic status. Academic advisors and retention program staff members can use the CSI to identify the students who are going to have difficulty persisting in these programs and provide the academic assistance or counseling to direct them into programs that more clearly match their skills and abilities. With more distributed learners, the type of information provided by the CSI may become increasingly important in the future to establish remote rapport and improve services provided to students. Student profile data can also be used to target institutional resources toward those students who are more receptive to academic assistance and/or to identify strategies to increase willingness on the part of the student to seek help before they become academically ineligible to continue enrollment.

Results of this research indicate the CSI is a viable retention intervention tool for use with at-risk students at a metropolitan university. However, a comprehensive cost benefit analysis, to include input from advisors and the support units likely to have ownership for implementation, should be conducted to determine whether or not there is value in extensive use of the instrument at the University of North Texas.

Limitations of Study

The limitations of this study are associated with conducting research at a single campus and using ex post facto correlational research design, which limits the ability to assume cause and effect relationships. There is no manipulation of an independent variable as it exists in an experimental design, nor did randomization associated with the sample population occur. These conditions may also result in oversimplification of results from the study, which are more philosophical or inductively reasoned than causal (Kerlinger, 1992).

For this sample of at-risk first-time freshmen, the coefficient alpha results for the 8 major SCI scales used in this study are comparable to those reported for the national sample (see Table 3). The study sample had a range of .69 to .90, for an average of .82 on these 8 factors; and the national sample had a range of .61 to .88, for an average of .81. The poorest reliability factor for both groups was receptivity to social enrichment, and the highest was study habits. Two additional scales for which coefficient alphas were computed for

the study sample were desire to transfer schools (.85) and dropout proneness (.89) (see Table 4). Overall results indicate that the CSI is a fairly reliable instrument for use with at-risk first-time freshmen at a metropolitan university; however, the variance accounted for when predicting grade point average and persistence is mitigated by some poor and weak individual predictor factor reliabilities.

Stepwise multiple regression analyses (Max R SAS) used in this study produced significant five-variable models, with all five CSI predictors attaining significance for predicting grade point average. Within the models, some intermediary three- and four-variable models, however, failed to produce significance for individual predictors. This was probably due to unexplained mediator and/or suppressor effects by some variable(s) within the five-variable model. This resulted in all factors being significant and contributing unique variance to the overall multiple regression models (see Tables 12 and 13) at the beginning of the 2nd year and at the end of the 4th year.

This study was limited to at-risk first-time freshmen due to availability of CSI scores and the use of existing data employed in the research design. Had the study included a control group and experimental research design including regular-admit students, the results would have been more beneficial to the University of North Texas and other CSI applications.

Other concerns include the possible effect of zero grade point averages earned by approximately 5% of the subjects in this study. This condition occurs when a student enrolls in a term and withdraws during the year.

Withdrawal during the automatic W period did not have negative grade point average consequences for individual students; however, grades of WF that were assigned after that period increased the likelihood of academic ineligibility to reenroll.

An attempt was made to adjust for the complex attrition process by evaluating enrollment status in a window of time extending over 12 months to determine persisters and nonpersisters. However, this operational definition did not adequately take into account the many different types of dropout or withdrawal behaviors, which might have included transfer to another institution, temporary stopout, dropout from the higher education system, academic ineligibility, and others.

The retention treatment participation in UCRS 1000 may have affected the results of this study. A more conclusive research design would have incorporated a control group of at-risk CSI respondents who had not participated in this 1st-year intervention program.

Lastly, the duration of this study was limited to 4 years, which is 1 year short of the average time to graduate at the University of North Texas and 2 years short of the 6-year graduation rates reported to state and federal agencies and used for national comparison purposes. Extending the time frame would have shed additional light on the complex process of identifying significant CSI predictors of academic success and persistence at a large metropolitan university.

Future Research

The CSI appears to be a viable instrument that can be used to predict grade point averages of at-risk students in the 2nd and 4th years and enrolled status during the later time period. This study should be extended to at least 6 years to permit the study of differences between those who graduate versus nonpersisters and those who are still persisting. Research is also needed further to examine nonpersistence and to differentiate between voluntary departure and involuntary departure resulting from academic ineligibility. Ideally, those students who voluntarily leave the University of North Texas should be contacted or tracked to determine whether they met educational goals before graduating, enrolled elsewhere, or dropped out of the higher education system altogether.

Future research with the CSI should also incorporate regular-admit first-time freshmen, transfer students, and various ethnic groups into research designs. Studies should also include national normative data, preferably for metropolitan public universities, but at a minimum for 4-year institutions, whereby more specificity can be gained in identifying categories of students who stand to benefit most from CSI assessment and retention program resources.

APPENDIX A

COLLEGE STUDENT INVENTORY FACTORS FOR WHICH
DATA ARE REPORTED AND DESCRIPTIONS FROM
THE RETENTION MANAGEMENT SYSTEM
COORDINATOR'S MANUAL

College Student Inventory Factors for Which
Data Are Reported and Descriptions From
the Retention Management System
Coordinator's Manual

Dropout proneness * +

This scale measures the student's overall inclination to drop out of school before finishing a degree (p. 53).

Predicted academic difficulty

This scale was developed by correlating CSI questions with first-term college grade point average (GPA). It is thus designed to predict who is most likely to have low grades in college (p.136).

Educational stress

This scale indicates the student's susceptibility to anxiety, discouragement and feelings of inadequacy regarding the total school environment, including peer relations (p. 54).

Receptivity to institutional help

This scale indicates how responsible the student is likely to be to intervention. The higher the score, the more receptive the student is (p. 54).

Study habits * +

This scale measures the student's willingness to make the sacrifices needed to achieve academic success. It focuses on effort, not interest in intellectual matters or the desire for a degree (p. 58).

Intellectual interests

This scale measures how much the student enjoys the actual learning process, not the extent to which the student is striving to attain high grades or to complete a degree. It measures the degree to which the student enjoys reading and discussing serious ideas. (p. 59)

Academic confidence

This scale measures the student's perception of their ability to perform well in school, especially in testing situations. It is not intended as a substitute for aptitude assessment, but rather as an indicator of academic self-esteem (p. 59).

Desire to finish college * +

This scale measures the degree to which the student values a college education, the satisfactions of college life and the long-term benefits of graduation. It identified students who, regardless of their prior level of achievement, possess a keen interest in persisting. (p. 59)

Attitude toward educators

This scale measures the student's attitudes toward teachers and administrators in general, as acquired through their pre-college experiences. Students with poor academic achievement often express a

general hostility toward teachers and this attitude often interferes with their work. (p. 59)

Self-reliance

The purpose of this scale is to measure the student's capacity to make their own decisions and to carry through with them. It also assesses the degree to which an individual is able to develop opinions independently of social pressure. (p. 60)

Sociability

This scale measures the student's general inclination to join in social activities (p. 60).

Leadership

This is a measure of the student's feelings of social acceptance, especially as a leader. This scale does not measure leadership ability or even potential; it simply reflects the student's feelings about how others perceive his/her leadership. (p. 60)

Ease of transition

This scale measures the student's basic feeling of security amid the changes that often accompany the start of a college career. Its main focus is on feelings of security in the campus social environment (p. 60).

Family emotional support * +

This scale measures the students' satisfaction with the quality of communication, understanding and respect that they have experienced in their family (p. 61).

Openness

This is a measure of the student's tendency to be open to new ideas and to the sensitive and sometimes threatening aspects of the world (p. 61).

Career planning

This scale measures the degree of maturity that the student has shown in attempting to decide on a career path. It does not assume that maturity is reflected in an early career decision. Rather, it measures the mental activities that usually led to effective decision-making (p. 61).

Sense of financial security +

This scale measures the extent to which the student feels secure about his/her financial situation, especially as it relates to their current and future college enrollment. The scale is not intended to measure the objective level of financial resources that the student has, only their feeling of being financially secure. (p. 61)

Receptivity to academic assistance *

This scale measures the students' desire to receive course-specific tutoring or individual help with study habits, reading skills, examination skills, writing skills' or mathematics skills (p. 62).

Receptivity to personal counseling

This scale measures the student's felt need for help with personal problems. It covers attitudes toward school, instructor problems, roommate problems, family problems, general tensions, problems

relating to dating and friendships and problems in controlling an unwanted habit. (p. 62)

Receptivity to social enrichment +

This scale measures the student's desire to meet other students and to participate in group activities (p. 62).

Receptivity to career counseling +

This scale measures the student's desire for help in selecting a major or career (p. 62).

Initial impressions +

This scale measures the student's initial predisposition toward their college on a variety of dimensions. . . . not intended to measure the college's true characteristics, but rather the pre-judgments and preconceptions that the student has acquired from friends, family and the media. This mind-set can influence a student's success and inclination to stay in college. For this reason, the scale's usefulness is not affected by the fact that most entering first-year students have had little direct contact with the college itself. (p. 62)

Desire to transfer schools +

This scale measures the student's desire to transfer to another school before graduating from the original entry institution (p. 67).

Amount of financial support

This scale is not specifically defined but factor is reported in data file.

Importance placed on grades

This scale is not specifically defined but factor is reported in data file.

Test scores

This scale is not specifically defined but factor is reported in data file.

* = predictors used in this study for grade point average.

+ = predictors used in this study for persistence and nonpersistence.

APPENDIX B

PERMISSION TO INCLUDE THE COLLEGE
STUDENT INVENTORY AND
ADVISOR/COUNSELOR
REPORT SAMPLE

June 9 1999

Josuel Harris
Registrar
University of North Texas
Denton, TX 76203

Dear Ms. Harris:

Thank you for your call this week specifying the use of the College Student Inventory™ in your graduate research project. I commend you for the near completion of your academic goal. Congratulations on your accomplishment, Josuel.

Given that Noel-Levitz has retained the right to publish and market this inventory from the author, Dr. Michael Stratil, I authorize you to photocopy the College Student Inventory and Reports of the Retention Management System™ for research purposes. In particular, I authorize you to:

- include the inventory and an anonymous RMS Student-Advisor Report in the appendix of your dissertation, as a sample of those questions posed to students and output generated from those self-reported data;
- allow the university to microfilm your dissertation (in its entirety, to include a copy of the College Student Inventory and resulting reports) and to supply single copies of the dissertation to others upon request.

Thank you for agreeing to share your methodology and findings with us. We are currently exploring a meta-analysis and could perhaps incorporate your findings with others' summary data.

Sincerely,



Beth Richter
Program Manager

Offices in
Iowa City, Iowa
Denver, Colorado

Enrollment management
consulting

Financial aid consulting

Retention audit and
reporting

Market research

Postgraduate consulting for
employment, admission,
and retention, and
first-year

Admission software

Publications and
web site development

Student satisfaction
assessment

Quality service
training programs

Staff and student
development programs

Early alert retention
programs

Retention surveys

Workshops, conferences,
and seminars

APPENDIX C

COLLEGE STUDENT INVENTORY

Getting the most out of
your college experience

College Student Inventory™

By Michael L. Stratil, Ph.D.



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START HERE.

OVERVIEW

Our minds have an immense capacity for knowledge. But **each of us learns in a different way**. We focus attention on somewhat different dimensions of the world, we have somewhat different understandings of the world, and we strive for quite different kinds of personal growth. We can only achieve our full potential when these forces of individuality are meshed smoothly with the learning process.

Your school wishes to help you discover and engage the full richness of your individuality. It would like to see you discover the learning path that best suits your unique personality. Completing the COLLEGE STUDENT INVENTORY™ is the first step in a carefully designed program to achieve that end. The Inventory is a communication channel between you and your school. It records your thoughts and feelings on many issues related to college. The results will be used in two ways.

First, you will receive a computerized interpretation of your data. Your advisor will discuss these results with you and help you join any follow-up activities that fit your interests and needs.

Second, the general results for your class as a whole will be used to plan a campus-wide program of support services. Staff members will determine how much need exists for certain types of services and how these services can be best provided.

Completing the Inventory and participating in the follow-up activities are entirely voluntary. But I strongly urge you to take advantage of these opportunities. They are likely to have a very beneficial effect on your entire education.

The Inventory has four sections, each with its own set of instructions. So you can gain full benefit from the results, please complete each part as accurately and honestly as you can. It is especially important that you **answer every question** (except where a blank response is allowed). If you change an answer, be sure to fully erase your initial response.

Best wishes for a deep and rewarding experience at college.

Michael L. Stratil

Go now to Part A and read the instructions.

PART A

Instructions. Please be advised that by completing and returning this answer sheet, you give consent to its release to Noel/Levitz Centers for the purpose of scoring, processing, and preparation of reports for yourself, your advisor, and your college or university.

Use a No. 2 (medium) black lead pencil in answering all parts of this questionnaire. Do **not** use ink or ball point pen.

1. On the front of the answer sheet, find the area for your name. It looks like this:

LAST NAME												FIRST NAME							MI

Print your last name in the 12 spaces provided. If your last name is too long, abbreviate it. Do not go past the line that divides the last and first name. Do the same for your **first name** (which goes in the next 7 spaces) and your **middle initial** (which goes in the last column).

2. **Now blacken the circles** that represent the letters in each part of your name. Be sure to completely fill each of the appropriate circles. Erase any stray marks or errors.
3. Move down to the area marked "GROUP #." The examiner has written this number on the board (or will read it to you). **Print the number** in the spaces provided. Be sure to include any 0's that are in the number.
4. **Print your age** in the next section.
5. In the section labeled "SEX," **blacken one** of the circles (either "M" or "F").
6. In the last section, **print your social security number**. This number will enable your counseling staff to avoid misidentifications in cases where more than one person has the same name. If you do not know your social security number or do not wish to provide it, enter 123456789.
7. **Now blacken the appropriate circles** under GROUP #, AGE, and SOCIAL SECURITY NUMBER. Again, be sure to completely fill each appropriate circle and to erase all stray marks and errors.

GO TO PART B.

PART B

Instructions. The main body of the questionnaire contains 194 questions. The questions in the present section offer various options, which are represented on the answer sheet as numbered circles. Thus, question #1 appears as follows on the answer sheet:

Question #	Options
1	①②③④⑤⑥⑦

Notice that the answer sheet always provides seven circles, even though some questions offer fewer than seven options. Ignore the extra circles.

You are to answer each question by deciding which option is most appropriate to you. Then use your pencil to blacken the circle that corresponds to the option you have chosen.

If you have difficulty in answering any of the questions in this section, see the examiner. Begin with the first question and continue to the end of the section.

1. My graduating class in high school had:
 - 1) less than 50 students
 - 2) 50 to 99 students
 - 3) 100 to 149 students
 - 4) 150 to 299 students
 - 5) 300 to 499 students
 - 6) 500 or more students
 - 7) none of the above, as I received a General Education Degree (G.E.D.)
2. The program of courses that I took in high school was designed primarily to prepare me for:
 - 1) a manual trade (auto mechanics, farming, plumbing, carpentry, manufacturing, etc.)
 - 2) a technical trade (electrical, electronics, data processing, commercial art, medical technician, nursing, etc.)
 - 3) secretarial work (typing, filing, dictation, etc.)
 - 4) general commerce (sales, purchasing, banking, bookkeeping, etc.)
 - 5) a college education leading to various occupations
 - 6) other
3. The average of all my grades during my senior year in high school was approximately:
 - 1) A
 - 2) halfway between A and B
 - 3) B
 - 4) halfway between B and C
 - 5) C
 - 6) halfway between C and D
 - 7) D
4. Based on its general reputation, I would say that my high school's academic standards were:
 - 1) far below the average high school
 - 2) somewhat below the average high school
 - 3) about equal to the average high school
 - 4) somewhat above the average high school
 - 5) far above the average high school
5. The following question is about your current knowledge of college preparatory courses (e.g., English, mathematics, science, and social studies). Compared to the average high school graduating senior in this country, I consider my academic knowledge to be in the:
 - 1) highest 20%
 - 2) next to the highest 20%
 - 3) middle 20%
 - 4) next to the lowest 20%
 - 5) lowest 20%
6. In college, I am currently (or will be when school starts) a:
 - 1) freshman
 - 2) sophomore
 - 3) junior
 - 4) senior
 - 5) graduate student
 - 6) special (non-degree) student

Note: If your school did not use letter grades, do your best to translate your grades into the above system.

7. While attending college, I am living in (or plan to live in):
- 1) a residence hall
 - 2) my parents' home
 - 3) a relative's home
 - 4) my own off-campus apartment or house
 - 5) married student housing
 - 6) a fraternity or sorority
 - 7) other
8. The highest degree that I plan to pursue is:
- 1) none
 - 2) 1-year certificate
 - 3) a 2-year college degree (associate)
 - 4) a 4-year college degree (bachelor's)
 - 5) a master's degree
 - 6) a doctoral degree [medicine (M.D.), dentistry (D.D.S.), law (J.D.), philosophy (Ph.D.), or other similar degrees]
9. Academic ability is one's capacity to learn from books, lectures, and written assignments. Its key ingredient is the ability to understand and remember complex ideas. In relation to the **general population** of our society, I consider my academic ability to be:
- 1) considerably below average
 - 2) slightly below average
 - 3) average
 - 4) slightly above average
 - 5) considerably above average (in the top 20%)
 - 6) extremely high (in the top 5%)
10. While attending college, the amount of time I expect to spend studying **outside of class** is approximately:
- 1) 3 hours or less per week
 - 2) 6 hours per week
 - 3) 9 hours per week
 - 4) 12 hours per week
 - 5) 15 hours per week
 - 6) 18 hours per week
 - 7) 21 hours or more per week
11. Based on the information I currently have, I feel that my college's academic standards and expectations are:
- 1) much too high for me
 - 2) somewhat too high for me
 - 3) slightly too high for me
 - 4) just right for me
 - 5) slightly too low for me
 - 6) somewhat too low for me
 - 7) much too low for me
12. My native (family) language is:
- 1) English
 - 2) Spanish
 - 3) French or Italian
 - 4) German or Slavic (Russian, Polish, Czech, Bulgarian, etc.)
 - 5) Arabic
 - 6) Chinese, Vietnamese, Korean, or Japanese
 - 7) other
13. I would describe my racial origin as:
- 1) Afro-American (Black)
 - 2) American Indian, Alaskan Native
 - 3) Asian-American, Pacific Islander
 - 4) Caucasian-American (White)
 - 5) Hispanic-American (Mexican, Puerto Rican, Cuban, etc.)
 - 6) Other
 - 7) I prefer not to respond
14. What is the highest level of education completed by your mother?
- 1) 8 years or less of elementary school
 - 2) some high school but no diploma
 - 3) a high school diploma or equivalent
 - 4) 1 to 3 years of college (including study at a technical, community, or junior college)
 - 5) a 4-year undergraduate college degree (bachelor's degree)
 - 6) a master's degree
 - 7) a doctoral degree
15. What is the highest level of education completed by your father?
- 1) 8 years or less of elementary school
 - 2) some high school but no diploma
 - 3) a high school diploma or equivalent
 - 4) 1 to 3 years of college (including study at a technical, community, or junior college)
 - 5) a 4-year undergraduate college degree (bachelor's degree)
 - 6) a master's degree
 - 7) a doctoral degree

16. My present marital status is:

- 1) single, with no plans to get married
- 2) single, with a close relationship to someone I plan to marry
- 3) single, with children
- 4) married, without children
- 5) married, with children
- 6) divorced, without children
- 7) divorced, with children

17. The distance between my college and my family home (residence of parents, guardians, or spouse) is:

- 1) less than 10 miles
- 2) 10 to 50 miles
- 3) 51 to 100 miles
- 4) 101 to 300 miles
- 5) 301 to 600 miles
- 6) more than 600 miles

Complete the following question if you have taken the ACT Assessment. Otherwise skip this question and go on to the next one.

18. My composite score on the ACT was:

- 1) 10 or less
- 2) between 11 and 14
- 3) between 15 and 18
- 4) between 19 and 22
- 5) between 23 and 26
- 6) between 27 and 30
- 7) 31 or higher

Complete the following question if you have taken the Scholastic Aptitude Test (SAT). Add your scores for the Verbal and Mathematics sections to get your total score.

If you have not taken the SAT, skip this question and go on to the next one.

19. My total SAT score (verbal plus mathematics) was:

- 1) 600 or less
- 2) between 601 and 720
- 3) between 721 and 840
- 4) between 841 and 960
- 5) between 961 and 1080
- 6) between 1081 and 1200
- 7) 1201 or higher

The following two questions are the only ones in the inventory that allow for more than one response.

20. Before deciding to enroll, my familiarity with my present college consisted of (select all options that apply):

- 1) reports from acquaintances
- 2) reading the description in a general college guide (e.g., Lovejoy's)
- 3) reading its catalog and brochures
- 4) a brief drive through the campus on my own
- 5) talking briefly with a college representative
- 6) an interview and/or guided tour of the campus conducted by staff members
- 7) extensive contact over a period of years (e.g., attendance at activities sponsored by the school)

21. From the list below, fill in the circle for each type of voluntary, non-credit activity in which you participated during high school. Do not indicate activities for which you received course credit.

- 1) art exhibit or musical, theatrical, or dance production
- 2) school newspaper, yearbook, literary magazine, or writing contest
- 3) debate team, speech contest, or radio/TV production
- 4) scientific research project
- 5) member of a special interest, social, honorary, or service organization
- 6) member of an athletic team or active in intramural sports
- 7) class officer, member of student council, team captain, or officer of any other type of school organization

ANSWER ANY QUESTIONS THAT HAVE BEEN LEFT BLANK, EXCEPT FOR THOSE THAT ALLOW FOR A BLANK ANSWER (QUESTIONS # 18-21).

THEN GO TO PART C.

PART C

Instructions. The present section measures a variety of attitudes related to college. Students usually find it to be quite interesting.

As you answer the questions, keep in mind that attitudes are hard to measure. Different individuals often interpret the meaning of a question differently, and a fleeting thought or feeling may influence how one responds.

For these reasons, a good questionnaire should contain a number of similar items about every topic covered. Each item reduces the chances of error. So please be patient with the questions. Also, don't try to recall your previous responses—just answer each question as spontaneously and naturally as you can.

Answer each question by selecting one number from the following rating scale:

RATING SCALE								
NOT AT ALL TRUE	1	2	3	4	5	6	7	COMPLETELY TRUE

Thus, if you agree completely with a statement, you should answer with a "7." Agreement that is fairly strong but not total is indicated by selecting a "5," while agreement that is fairly weak is indicated by "3." Total disagreement is indicated by selecting "1." Use any number between 1 and 7.

Keep in mind that there are no "right" or "wrong" answers. Simply give the answer that best fits you. In answering the questions on study habits and teachers, you should draw primarily on your pre-college experiences.

Read each question carefully, but do not spend a lot of time on any one question. As before, blacken the appropriate circle on the answer sheet. Give only one response for each question.

22. When I think about my career choice, I find that I have very little solid information to go on.
23. Most of my teachers have been very caring and dedicated.
24. Books have never gotten me very excited.
25. I study all of the assigned readings in my courses.
26. Enter a "2" for this question.
27. I have financial problems that are very distracting and troublesome.
28. It is wise to avoid people with strange and unusual ideas.
29. Often I get so uptight about an exam that I can't concentrate on studying.
30. I would like to talk with someone about the qualifications needed for certain occupations.
31. I often rely on my own ideas when making a decision, and I'm prepared to make an unpopular decision if necessary.
32. I am having a hard time breaking away from my family, and attending college is going to make the situation worse.

The next question has a special purpose, which is to confirm that you are putting your answers in the correct position on the answer sheet. There will be others like it throughout the inventory.

When you encounter questions of this type, simply enter the number indicated. For example, select the #2 option for question 26. Please be especially careful with all of these questions.

RATING SCALE								
NOT AT ALL TRUE	1	2	3	4	5	6	7	COMPLETELY TRUE

- | | |
|--|--|
| <p>33. My teachers did a very poor job of explaining the purpose of our studies.</p> <p>34. I would like to receive some help in improving my study habits.</p> <p>35. Of all the things I could do at this point in my life, going to college is definitely the most satisfying.</p> <p>36. I try to avoid long conversations with people.</p> <p>37. Most people have a lot of trust in my judgment and respect for my opinion.</p> <p>38. I have family problems that interfere (or will interfere) with my studies.</p> <p>39. I would like to talk with someone about a problem that I'm having (or expect to have) with a roommate.</p> <p>40. I have a good memory for the information that teachers present in class.</p> <p>41. In trying to plan a career, I have explored several possibilities and have weighed their advantages and disadvantages.</p> <p>42. It is likely that even our most hostile enemies have some good ideas.</p> <p>43. I have great difficulty concentrating on school work.</p> <p>44. I would like to talk to someone about getting a part-time job during the regular school year.</p> <p>45. I often get confused when trying to reach major decisions, and I seek a lot of help with them.</p> <p>46. I expect to make friends easily at college.</p> <p>47. I have some serious misgivings about my decision to come to college.</p> <p>48. While I was growing up, I felt that the rest of my family was firmly behind me.</p> <p>49. There are many sensitive subjects that people should never talk about.</p> | <p>50. I like to go to large, lively parties.</p> <p>51. Enter a "7" for this question.</p> <p>52. Other people don't think of me as a leader.</p> <p>53. I often have a hard time trying to imagine the people and actions described in a novel.</p> <p>54. I would like to attend an informal gathering where I can meet some new friends.</p> <p>55. I get a great deal of personal satisfaction from reading.</p> <p>56. I would like some information or counseling on the best way to eliminate an unwanted habit (e.g., involving food, drugs, cigarettes, or alcohol).</p> <p>57. I have gathered information about the salaries, job openings, and working conditions for several occupations, and I'm taking this into account in trying to choose a career.</p> <p>58. I have had (or expect to have) much difficulty adapting to my living arrangements while attending college.</p> <p>59. I am strongly dedicated to finishing college--no matter what obstacles get in my way.</p> <p>60. I take very clear notes during class, and I review them carefully before a test.</p> <p>61. I resent the large amount of power that teachers have had over me throughout my days in school.</p> <p>62. I have a lot of faith in my own reasoning, and I'm not discouraged when someone else disagrees with my conclusions.</p> <p>63. I plan to transfer to another school sometime before completing a degree at this college or university.</p> <p>64. When faced with a tough decision, I like to open my imagination to many possible solutions.</p> <p>65. I would like to talk with someone about the current job market for college graduates.</p> |
|--|--|

RATING SCALE								
NOT AT ALL TRUE	1	2	3	4	5	6	7	COMPLETELY TRUE

86. I would like to find out more about student government and the various student activities on campus.
87. I usually put off doing school assignments until it's too late.
88. I would like to receive some instruction in the most effective ways to take college exams.
89. My parents have paid little attention to my schooling, and they haven't done much to help me.
90. I am very confused about what occupation to go into.
91. I can think of many things I would rather do than go to college.
92. People with extreme political views should not be allowed to speak in public, as they tend to upset the community.
93. When I need to, I can work quickly on an exam without getting uptight.
94. Because I know very few people at my college, I expect my overall social situation to be very difficult during the coming term.
95. I would like to talk with a counselor about my general attitude toward school.
96. Enter a "1" for this question.
97. I often don't know what to say when I'm in a group of people, so I try to get away as soon as I can.
98. My teachers were very interesting and lively, and they made the learning process quite enjoyable.
99. Over the years, I have frequently been selected as a spokesperson or group leader.
100. I feel comfortable discussing important issues with my parents.
101. I have the financial resources that I need to finish college.
102. I think a lot about the future, and I try to plan my current life around my long-range goals.
103. On controversial issues, my opinions are often strongly influenced by what other people think.
104. My vocabulary is fairly limited, and I have a hard time understanding textbooks.
105. I spend a lot of time with other people.
106. I would like to receive some individual help in improving my writing skills.
107. Our ideas about life are far from perfect, and we can all benefit greatly from studying the beliefs and values of other societies.
108. I would like some help selecting an occupation that is well suited to my interests and abilities.
109. When studying, I am able to keep my attention clearly focused on the material.
110. I expect to get a lot out of college.
111. My family has a one-sided way of looking at me, and they don't understand my feelings.
112. I feel confident of my own opinions, and I'm willing to act on them.
113. Most teachers have a superior attitude that I find very annoying.
114. I hardly ever go to a bookstore, and I've bought few, if any, serious books.
115. I feel very comfortable with the changes in life style that my going to college will require.
116. Most people either avoid me or take me for granted.
117. I have not talked with any knowledgeable individuals about the training required for the occupation that most interests me.
118. When the odds are stacked against a person, it's best to throw in the towel early and avoid a painful failure.
119. Studying is only a small part of my life, and I don't take it very seriously.

RATING SCALE								
NOT AT ALL TRUE	1	2	3	4	5	6	7	COMPLETELY TRUE

- | | |
|--|--|
| <p>100. I would like to talk with a counselor about some emotional tensions that are bothering me.</p> <p>101. Enter a "4" for this question.</p> <p>102. I find it very hard to get into the joking and casual conversation that goes on at parties.</p> <p>103. I am good at figuring out what material is most important for an exam and what is secondary.</p> <p>104. I don't express unpopular opinions, even when something important is at stake.</p> <p>105. I have spent a lot of time thinking about how best to prepare myself for a career.</p> <p>106. I would like to talk with someone about getting a loan to help me through school.</p> <p>107. In striving for an important goal, it is sometimes sensible to take a few calculated risks.</p> <p>108. I would readily leave college if I found a well paying job.</p> <p>109. I know many of the students at my college, and I feel (or expect to feel) very much at home.</p> <p>110. My parents have been very helpful in teaching me how to get along with people.</p> <p>111. My studying is very irregular and unpredictable.</p> <p>112. Books have widened my horizons and stimulated my imagination.</p> <p>113. I am in a bad financial position, and the pressure to earn extra money will probably hinder my studies.</p> <p>114. I would like to receive some individual help with basic mathematics.</p> <p>115. Most teachers do a very good job of explaining their objectives.</p> <p>116. I have no respect for people who openly reject the group and do things differently than everyone else.</p> | <p>117. Many people consider me an effective leader, and they look to me for direction.</p> <p>118. During the coming term, I expect to feel somewhat lonely and to have a strong desire to see more of my friends and family.</p> <p>119. I study hard for all my courses, even those I don't like.</p> <p>120. I like to make my own decisions, and I have a lot of trust in my judgment.</p> <p>121. I get so nervous during an exam that I tend to lose track of what I'm doing.</p> <p>122. The total college experience—including both the studying and the social life—is very attractive to me.</p> <p>123. Although school administrators may pretend to have their students' interest at heart, they really don't.</p> <p>124. At this point, my college plans are not directed toward achieving any particular occupational goal.</p> <p>125. There is too much tension and emotional turmoil in my family.</p> <p>126. Enter a "5" for this question.</p> <p>127. On those occasions when I've tried to lead other people, things have turned out badly.</p> <p>128. I would like some help selecting a program of courses that will prepare me to get a good job after I graduate.</p> <p>129. I tend to be adventurous and fun loving.</p> <p>130. I often wonder if a college education is really worth all the time, money, and effort that I'm being asked to spend on it.</p> <p>131. I like to explore new ways of doing things—despite the frustrations and disappointments that sometimes result.</p> <p>132. I let my friends have too much influence on my life.</p> <p>133. When I try to study, I usually get bored and quit after a few minutes.</p> |
|--|--|

RATING SCALE								
NOT AT ALL TRUE	1	2	3	4	5	6	7	COMPLETELY TRUE

- | | |
|--|---|
| <p>134. The teachers I had in school were very professional and objective in assigning grades.</p> <p>135. My mind is able to grasp complicated ideas.</p> <p>136. I would like to talk with a counselor about some family problems.</p> <p>137. I have no desire to transfer to another school before finishing a degree at this college or university.</p> <p>138. It has been (or will be) very easy for me to adapt to my living arrangements while attending college.</p> <p>139. I would like to meet an older student who can show me around and give me some advice.</p> <p>140. Our enemies have nothing valuable to say, and we should ignore them.</p> <p>141. When I was a child, my parents usually understood me, respected my judgment, and treated me in ways that helped me grow.</p> <p>142. I have found at least one occupation that seems to fit well with my personality and interests.</p> <p>143. When I'm doing something with a group of people, they often turn to me as the group's natural leader.</p> <p>144. I am quite confident that my decision to go to college was the right thing for me.</p> <p>145. I avoid most types of social activities.</p> <p>146. I have developed some very effective study techniques.</p> <p>147. In my opinion, many teachers are more concerned about themselves than they are about their students.</p> <p>148. Listening to a frank discussion on some emotional issue can be very interesting.</p> <p>149. I would like to find out more about the fraternities and sororities at my college.</p> <p>150. Enter a "3" for this question.</p> | <p>151. I would like to receive some training to improve my reading skills.</p> <p>152. I have done a lot of reading about different occupations that interest me.</p> <p>153. My life at college is (or will be) quite different from what I'm used to, and the adjustments will be very hard for me to make.</p> <p>154. The notes I take during class are very spotty and incomplete.</p> <p>155. I get no enjoyment out of browsing in a library.</p> <p>156. I would like to talk to someone about getting a scholarship.</p> <p>157. I often take the initiative in solving my own problems.</p> <p>158. I don't agree with many of the lessons that my parents tried to teach me.</p> <p>159. I would like to talk with someone about the advantages and disadvantages of various occupations.</p> <p>160. I dread the thought of going to school for several more years.</p> <p>161. Some national problems are so hopeless that we should stop worrying about them.</p> <p>162. I liked my teachers, and I feel they did a good job.</p> <p>163. People show little regard for my views, and they hardly ever seek my advice.</p> <p>164. I feel very good about my capacity to adapt to my new social environment at college.</p> <p>165. When taking notes in class, I often get confused and can't keep up.</p> <p>166. I have not yet found a potential career that strongly attracts me.</p> <p>167. I enjoy activities that bring me into close contact with people.</p> |
|--|---|

RATING SCALE								
NOT AT ALL TRUE	1	2	3	4	5	6	7	COMPLETELY TRUE

- | | |
|---|--|
| <p>168. I would like to receive tutoring in one or more of my courses.</p> <p>169. My family and I communicate very well, and we understand each other's point of view.</p> <p>170. I don't have any financial problems that will hinder my school work.</p> <p>171. I would like to talk with a counselor about some difficulties in my dating or social life.</p> <p>172. I have developed a solid system of self-discipline, which helps me keep up with my school work.</p> <p>173. Enter a "6" for this question.</p> <p>174. I often feel unsure of my opinions on important matters.</p> | <p>175. I would like to talk to a placement officer about the opportunities available for summer employment.</p> <p>176. Our true feelings are often hidden, and it's healthy to explore them to gain a greater understanding of ourselves.</p> <p>177. I like to spend some of my free time reading serious books and articles.</p> <p>178. I have not talked with any knowledgeable people about the advantages and disadvantages of a particular occupation.</p> <p>179. During an exam, I'm able to concentrate and keep my thoughts well organized.</p> |
|---|--|

CHECK TO MAKE SURE YOU HAVE ANSWERED EVERY QUESTION IN THIS SECTION (QUESTIONS 22 TO 179). ANSWER ANY THAT HAVE BEEN LEFT BLANK.

THEN GO TO PART D.

TURN OVER



PART D

Instructions. The present section measures your current impressions of your institution. It is recognized that most of the students completing this questionnaire have had little or no direct contact with their institution, so they do not have well formed impressions. But everyone comes to college with at least some knowledge—which is acquired from catalogs, the institution's general reputation, the reports of friends, preliminary contacts, and so forth.

So if you have just arrived on campus, don't let this fact bother you. Just give your initial impressions.

Each question describes a different characteristic. You are to rate how you currently feel about your institution in relation to these characteristics. Answer by selecting a number from the following scale:

VERY DISSATISFIED	1	2	3	4	5	6	7	VERY SATISFIED
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You may select any number from 1 to 7. As before, blacken the appropriate circle on the answer sheet. Blacken only one circle for each question.

- | | |
|---|--|
| 180. The location of the institution. | 192. Shopping facilities at or near the institution. |
| 181. The kinds of academic courses and majors available. | 193. My living arrangements while attending the institution (whether at home, in a residence hall, or in an apartment). |
| 182. The variety and quality of food available (both on- and off-campus). | <div style="border: 1px solid black; padding: 5px;"><p>NOTE that the following is not a rating question. Select option 1 if you agree with the statement; select option 2 if you do not.</p></div> |
| 183. The cost of tuition, housing, and food. | |
| 184. The condition and appearance of buildings and grounds. | 194. I authorize the counseling center at my institution to send the student and advisor reports from this inventory to my academic advisor, who will help me select courses and make other educational decisions: |
| 185. The general characteristics of the student body. | 1) YES |
| 186. The entertainment available at or near the institution. | 2) NO (If you select this option, all of your reports will be kept on file at your counseling center (or its equivalent); as soon as the Student Report is available, you will be able to obtain it from that office.) |
| 187. The adequacy of financial aid. | |
| 188. Enter a "2" for this question. | |
| 189. The intercollegiate athletic program. | |
| 190. The faculty in general. | |
| 191. The social life (both on- and off-campus). | |

CHECK TO MAKE SURE THAT YOU HAVE ANSWERED EVERY QUESTION IN THIS SECTION (QUESTIONS 180 TO 194). ANSWER ANY THAT HAVE BEEN LEFT BLANK.

THEN RETURN THE QUESTIONNAIRE AND THE ANSWER SHEET TO THE EXAMINER.

THANK YOU!

APPENDIX D

COLLEGE STUDENT INVENTORY

SAMPLE REPORT

COLLEGE STUDENT INVENTORY
Advisor/Counselor Report

Profile A

INSTRUCTIONS

This is a report of _____ results. Please give him a thorough explanation of his student copy. If you agree with the recommendations, gently encourage him to follow them. When possible, try to make the arrangements yourself as a way of reducing motivational barriers. But avoid attempting any psychological counseling if not professionally trained for such work. Above all be sure to protect the confidentiality of the present report.

SUMMARY OF ACADEMIC MOTIVATION	
Summary scores are expressed on a stanine scale; 9 is very high, 5 is average, and 1 is very low.	
M Dropout Proneness	9
M Predicted Academic Difficulty	7
M Educational Stress	8
M Receptivity to Institutional Help	7
For greater detail, see Motivational Assessment.	

Notice
To protect the student's privacy, he should be allowed to recover and remove this report at any time

SPECIFIC RECOMMENDATIONS FOR

- The strength of each recommendation is indicated by its priority score in parentheses (0 = low, 10 = high):
- Discuss family problems with counselor (9.7)
 - Discuss an unwanted habit with counselor (9.5)
 - Discuss emotional tensions with counselor (9.2)
 - Discuss the qualifications for occupations (9.0)
 - Discuss dating and social life with counselor (8.8)
 - Get help in selecting an occupation (8.6)
 - Discuss job market for college graduates (8.5)

MOTIVATIONAL ASSESSMENT	Percentile Rank	Very Low Avg Very High				
		VL	L	A	H	VH
Academic Motivation						
Study Habits	2	X				
Intellectual Interests	77				X	
Academic Confidence	11	X				
Desire to Finish College	9	X				
Attitude Toward Educators	85					X
Social Motivation						
Self-Reliance	15	X				
Sociability	25		X			
Leadership	39		X			
General Coping						
Ease of Transition	68				X	
Family Emotional Support	3	X				
Openness	86					X
Career Planning	65				X	
Sense of Financial Security	84					X
Receptivity to Support Services						
Academic Assistance	48			X		
Personal Counseling	97					X
Social Enrichment	24		X			
Career Counseling	71				X	
Initial Impression ¹	21		X			
Internal Validity						Excellent

STUDENT BACKGROUND INFORMATION

High School Academics
Sr. Yr. GPA: C+ average
Class size: 1-49
Program: college prep
Perceived Stds: above average

Noncredit Activities

Athletics
Fine Arts: yes
Leadership
Misc. groups
Oral expr.
Science
Written expr.: yes

Family Background

Native lang.: English
Racial origin: Black
Mother's educ.: some college
Father's educ.: some college
Status:
Miles from family: 10-50

Admissions Test Scores

ACT Composite: N/A
SAT (V+M): 1081-1200

College Experience

Housing: residence hall
Degree sought: bachelor's
Plans to study: 15 hrs/week

Other Indications¹

Desires to transfer
Dissatisfied w/acad. offerings
Dissatisfied with costs
Dissatisfied with social life
Dissatisfied with food

¹This information is not shown on the student's copy
Naal/Levitz Centers

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