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THE RELATIONSHIP BETWEEN ACADEMIC AND CAREER COUNSELING AND
PERSISTENCE IN HIGHER EDUCATION

THE UNIVERSITY OF ARIZONA

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THE RELATIONSHIP BETWEEN ACADEMIC AND CAREER
COUNSELING AND PERSISTENCE IN HIGHER EDUCATION

By

Robert Walter Wallin

A Thesis Submitted to the Faculty of the
DEPARTMENT OF COUNSELING AND GUIDANCE
In Partial Fulfillment of the Requirements
For the Degree of
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In the Graduate College
THE UNIVERSITY OF ARIZONA

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ABSTRACT

The purpose of this study was to determine if first year students in higher education who participated in programs of academic and career counseling experienced a higher rate of persistence as opposed to a similar group of students not participating in counseling, using data from the National Longitudinal Study of the High School Class of 1972.

A partial correlation analysis was used to determine the net correlation of academic and career counseling on persistence with the effects of the other variables in the battery accounted for. These other variables were high school grade point average, self-concept, race, sex, and socioeconomic status.

The findings allowed the researcher to reject the null hypothesis. The partial correlation coefficient was .0243 at .016 level of significance.

In conclusion, further research into the effects of counseling on persistence could lead to programs of benefit to students, counselors, and administrators.

CHAPTER 1

INTRODUCTION

For every ten students who enter college in the United States, only four will graduate from that college four years later. Three of the students who originally entered will never obtain a degree from any institution. This means that of the estimated 7.6 million undergraduate students who enrolled in 1971, roughly 2.3 million dropped out of higher education completely (Pantages & Creedon, 1978). In sheer numbers, the retention problem deserves attention. From the point of view of the college, retention has a great impact on operations and finance. From the student's point of view, the decision to drop out of college may have a significant effect on the individual's personal growth and development. Chickering (1969) defines seven areas of development in the college student; achieving competence, managing emotions, becoming autonomous, establishing identity, freeing interpersonal relationships, clarifying purposes and developing integrity. These developmental vectors are either enhanced or diminished according to the degree or lack of the student's integration into the social and academic environments of the campus. The ability to which a student is able to find encouragement and support

from peers and faculty affects this integration. The degree to which the student is alienated from his college experience affects his purpose for remaining in college. When there is no longer sufficient purpose for remaining, a student will drop out (Chickering, 1969). Since a high level of drop-outs are high academic achievers (Astin, 1964), academic failure is not the only source of the problem. Considering a student is dismissed for academic reasons, what are the causes of her/his academic failure if she/he demonstrated sufficient competency for admissions in the first place? What motivational difficulties is the student encountering that cause her/him to fail? Institutions of higher learning have a responsibility to take steps to assist and retain the student, not only for financial reasons but for the benefit of the student.

Previous studies have concentrated on identifying characteristics of those that drop out and how this group differs from persisters. This body of knowledge can be used two ways. Admissions procedures can be used to screen out potentially high risk students. With the current emphasis on retaining students (Lea, Sedlacek & Stewart, 1979) due to the shrinking pool of applicants, programs are needed to reach the potential drop-out and intervene in the process that leads to the decision to leave. Few studies have been specifically designed to evaluate such programs.

The National Longitudinal Study (NLS) of the High School Class of 1972 assembled by the National Center for Educational Statistics, U. S. Department of Health, Education, and Welfare, can be of benefit to researchers in the area of retention. The large national sample plus the large quantity of data relating to student characteristics can be used to view the relationship between retention and intervention programs. A multivariate analysis of the data can help to correlate the many complex factors involved in the retention issue (see Chapter 2, Review of the Literature for a discussion of the NLS).

Statement of the Problem

Does the participation in academic and career counseling in higher education by first year students of the National Longitudinal Study produce a higher first year persistence rate as opposed to a group of first year students not participating in counseling? The purpose of this study is to determine if counseling in higher education has a significant effect on persistence in relation to the different background characteristics that students bring with them to college.

Significance of the Problem

There are two major reasons for undertaking this study. First, there is a need for more research on intervention programs related to persistence. It is hoped that such

research will lead to more programs of benefit to students and institutions alike. Secondly, the National Longitudinal Study provides a large national sample and wealth of information making it ideal for use as a data base for a study on retention.

Hypothesis to be Tested

The hypothesis is stated in null form: There will be no significant difference in the first year persistence rate of a group of college students who participated in counseling programs as opposed to a similar group not participating in counseling programs, using a sample of students from the National Longitudinal Study.

Assumptions, Limitations and Definitions

Assumptions

1. Students drop out for a variety of reasons.
2. Students bring with them to college a cultural and family background, self-concept and life expectations of varying degree and character.
3. Students persist in college because they have sufficient skills, motivation and reward to do so.
4. Counseling programs in higher education can provide students with necessary skills, motivation, reward and support for their social and academic experiences on campus.

Limitations

1. A major limitation common to all retention studies is the difficulty in controlling the great number of confounding variables influencing a student's decision to drop out.
2. The national sample excludes important local differences, limiting generalizability.
3. The uncontrolled unmeasured differences, characteristic of those students who sought counseling may be more important than actual participation in counseling in determining persistence.
4. There is no control for quality and reliability of counseling interventions.
5. The length of the study is limited to one and one half years after graduation from high school because, to date, only the first follow-up questionnaire contains questions specifically asking about participation in counseling programs after high school. It is hoped that in the future follow-up surveys of the NLS, more questions will be asked concerning counseling.
6. Data is self reported.

Definitions

Drop-out--For purposes of this study, a drop-out will be defined as a student who, in the fall of 1973, was not

enrolled in either the same institution of higher education as the previous year or had not transferred to another such institution. Those who transferred or those who stopped-out for a semester and enrolled again in the fall of 1973 are included as persisters because they did not drop-out of the system of higher education all together. Both full and part-time students are included.

Locus of Control--An individual's history of reinforcement determines two basic psychological orientations in life; internal control people believe reinforcements are contingent on their own actions; external control people believe reinforcements are not entirely contingent on their own actions, but often perceived as the result of luck, chance, fate or powerful others. High internality is associated with greater job efficiency, higher need achievement, greater school success, greater satisfaction with life, lower anxiety, greater social action involvement and greater willingness to accept responsibility for personal actions. The NLS has constructed a composite scale of questions specifically designed to determine locus of control (See Appendix A).

Self-Concept--A person's attitude about her/himself involves self-satisfaction, self-acceptance, self-worth and self-confidence in abilities. The NLS has constructed a composite scale of questions specifically designed to determine self-concept (See Appendix A).

Socio-economic Status--A composite scale designed by the NLS consisting of parent's educational level, family income, father's occupation and a list of household items (See Appendix A).

Counseling--The NLS defines counseling by asking the question, "Had you participated in a formal program of academic or career counseling. . .other than those services that were provided to all students in your college?" (See Appendix A).

Race-- The NLS defines race by responses to the question "How do you describe yourself?" For purposes of this study, Whites will be compared with non-Whites (See Appendix A).

High School Grade Point Average--The average value of all courses taken for academic credit during the student's high school career. The unit value of each course is multiplied by the grade received. The sum of these products is divided by the sum of the units. A student's school record information form was completed by the student's school and collected along with the Base-Year Questionnaire (See Appendix A).

Sex--Students were asked to indicate their sex on each questionnaire and responses were checked for consistency.

Summary

For every ten students who enter college in the United States only four will graduate from that college four years later. Three of the students who originally entered

will never obtain a degree from any institution. From the institutions' point of view, retention has an impact on operations and finance. From the students' point of view, dropping out is an important decision affecting personal growth and development.

The National Longitudinal Study of the U. S. Department of Education provides a large national sample and a large quantity of data relating to student characteristics.

The problem statement asks whether academic and career counseling by first year students will result in a higher persistence rate. Some limitations of this study are the great number of variables affecting persistence, the uncontrolled, unmeasured differences in students who sought counseling and, the self-reported nature of the data.

CHAPTER 2

REVIEW OF THE LITERATURE

Retention research has been described as large in volume, poor in design and limited in scope (Astin 1975). Early findings were generally demographic, while later work centered on an examination of characteristics of students. More recently, some studies have considered the interaction of student characteristics in the college environment. However, there is a lack of studies analyzing the results of intervention programs. Lea, Sedlacek & Stewart (1979) point to six general areas of problems in retention research: (1) the problem of defining drop-out, (2) deficiencies in data bases from which studies originate, (3) scarcity of sequential, longitudinal studies, (4) failure to control the influence of confounding variables, (5) generalizability of results and (6) lack of a theoretical base from which to explain results.

Summerskill (1962) has observed that attrition rate has been variously defined as the percentage of students lost to a particular division within the college, lost to the college as a whole, or lost to higher education as a whole. Researchers have not reached an agreement on whether a drop-out is a student who does not graduate four years

after enrollment, a student who never graduates, or simply a student who has transferred to another institution. A definition of the term affects the usefulness of studies to other professionals. Combining findings from different studies may encounter serious validity problems. Furthermore, students who leave college before graduating are not a homogeneous group. Voluntary withdrawals may differ markedly from academic or disciplinary dismissal in terms of personality characteristics, experiences in college and motivation. Some drop-outs may not be permanent, but more appropriately might be called "stop-outs" and technically are not a drop-out if they may return to complete a degree. The definition of drop-out involves administrative value decisions. Dropping out may be a proactive positive decision for the student. Transferring and stopping-out are not necessarily negative behaviors.

Any conclusions are only as good as the data from which they are derived. Formerly, the data collected were related to admissions and prediction studies. Entry data have been focused too narrowly on academic variables and tell nothing about the student's experience after entry. Studies concentrating on academic achievement after enrollment also assume that factors known to affect scholastic achievement, such as aptitude, are positively related to persistence. Although such a correlation exists, recent research demonstrates that there is a higher than predicted attrition rate

of scholastically high achieving students (Astin 1964, 1973; Heilbrun 1965; Marsh 1966). Studies comparing demographic, personality, and environmental characteristics of students have typically used Ex Post Facto methodology, focusing on either persisters or drop-outs. Gekoski & Schwartz (1961) have criticized such studies for lack of comparison and control groups and for using post withdrawal questionnaires and self-report data which tend to be unreliable. Many studies only focus on one or two factors at a time, however, recent research has supported the view that attrition is the result of multiple factors operating concurrently (Chickering & Hannah 1969; Demitroff 1974).

Dropping out has been described as a process rather than an event (Tinto 1975). Despite this fact, there have been few detailed longitudinal studies. Unfortunately, longitudinal studies require great amounts of time, resources, and commitment, both from the researchers and the sponsoring institutions. The longitudinal approach provides a clearer view of the complex interaction of factors that influence a student to withdraw from college. Another advantage to this method is that researchers may distinguish between stop-outs, transfers, and those students that drop out all together. Eckland (1964a, 1964b) found that a larger number of students graduate from college than was originally estimated.

Problems of control and generalizability are also common in retention research. It is difficult to isolate the effects of different variables contributing to the decision to leave college and the use of univariate statistical techniques have limited the applicability of much research. Conflicting results have also been generated by the national or local focus of a study. Evidence seems to indicate that different institutions and different groups interact in a wide variety of ways. National studies tend to discount important local differences while local studies are limited in generalizability.

Few retention studies have evolved from a theoretical base although there are some exceptions (Spady 1970; Tinto 1975). Knowing the degree to which certain variables relate to attrition does not tell how these variables influence dropping out nor why a student exhibits one form of drop-out behavior rather than a different form. Tinto (1975) presented an institutionally oriented model focusing on the social processes in college. The individual enters the college environment with a degree of both goal and institutional commitment, reflecting expectations and motivations molded by family and school background and individual characteristics. After entry, the student faces integration into the academic and social systems of the college environment. The degree of success in the integration process will

alter the student's commitments and result in persistence or withdrawal. Tinto (1975) emphasizes the differences between variables relating to voluntary withdrawal as opposed to academic dismissal.

Of those characteristics of individuals shown to be related to attrition, the more important pertain to family background, the characteristics of the individual her/himself, her/his educational experiences prior to college entry, and expectations concerning future educational attainments. Parents social status, educational attainments, and levels of expectation for child's education are important factors. College persisters tend to come from families where parents enjoy more open, democratic, supportive, and less conflict-ing relationships with their children. However, Sewell and Shah (1967) found that the student's own measured ability was nearly twice as important in accounting for dropping out as was the social status of the family. Although demonstrating ability on standardized tests and success in past educational experiences have not always demonstrated correlation with persistence since voluntary withdrawals tend to demonstrate high academic achievement. Tinto (1975) found that voluntary withdrawals as a group tend to have higher grades, intellectual development, and social-economic status than either those dismissed for academic reasons or persisters. Institutions often fail to meet the

individually perceived educational and developmental needs of the student (Chickering 1969).

Persistence in college is, however, not simply the outcome of individual characteristics. Dropping out is the result of the individual's experiences in the academic and social systems of the college. The individual's ability to integrate into the social environment of the college campus and the frequency and quality of contacts with faculty have a positive correlation with persistence (Tinto 1975). Successful encounters in these areas result in varying degrees of social communication, friendship support, faculty support, and involvement in campus organizations, which are viewed as social rewards and modify the individual's educational and institutional commitments.

Minority student retention is a neglected area of research. Astin (1975) has indicated that race as a predictor of attrition is strongest for Blacks at predominantly White institutions. Tinto (1975) has described race as a predictor of attrition independent of ability and socioeconomic status. Sedlacek and Brooks (1976) have indicated that traditional admissions predictors are inappropriate for culturally different students. Consequently, many minority students who could succeed in college are never admitted.

Although many studies have aimed at obtaining as complete an understanding as possible of the nature of the

individual and environmental aspects of attrition, fewer studies have applied this knowledge in designing programs aimed at reducing attrition. Some studies have looked at admissions policies, however, results are inconclusive. Little (1959) disagrees with raising admissions standards, citing his data that showed a larger than expected percentage of students from the top of their high school class who dropped out. Blanchfield (1971) seriously questioned the use of preadmission interviews with the aim of supplementing intellectual data as being hurried and inconclusive.

The majority of recommendations for reducing attrition have been concerned with enlarging the role and scope of counseling services for students after enrollment (Arrington & Romano 1981; Davis 1962; Demos 1968; Gekoski & Schwartz 1961; Glennen 1975; Osborn 1968; Rubin & Cohen 1974). At Ohio State University, Osborn (1968) conducted a study of two groups of students identified as potential social and emotional dysfunctioners (by means of the Cornell Index, Form N2) during freshman orientation. The students in one group received one or more interviews conducted by a psychiatrist or a clinical psychologist in the college Mental Health Clinic. The students in the other group did not. A comparison of the two groups one year later revealed that those students in the study who were seen at the Mental Health Clinic stayed in college longer, were dismissed less

often, and received fewer notations of low academic achievement on their transcripts.

At California State College at Long Beach, all dropouts were asked to complete a form that listed reasons for withdrawing (Demos 1968). The students were then asked to talk with a counselor as part of the normal procedure for leaving school. The counselors then completed a form asking for the counselor's interpretation of students' reasons for leaving. It was not the counselor's intent to dissuade the student from leaving but only to discuss her/his reasons for leaving, feelings about the institution, and ask her/him to fill out the withdrawal form. The counselors found considerably different reasons than those given by the students themselves. The counselors tended to attribute leaving to financial problems, lack of motivation, difficulty of college work, and personal/emotional problems. The interesting concomitant effect of this study was the 10% of those students who had decided to leave changed their minds as a direct result of an interview with a counselor.

Rubin and Cohen (1974) conducted a study using nursing students at the Cook County School of Nursing, Chicago, Illinois. Students whose entering California Test of Achievement scores or GPA's indicated risk of academic failure were interviewed. Those with high scores (under-achievers) were asked to participate in group counseling sessions. Three different forms of group counseling were used

for students diagnosed as "neurotic", "non-achievement syndrome", or "adolescent reaction." Those with low scores and perceived to have no motivation problem were given remediation, and those with low scores plus motivational problems received both counseling and remediation (20 hours total for each). Results indicated that a significant increase in persistence was attained with the use of these counseling interventions.

A program of mandatory or "intrusive" counseling (Glennen 1975) was initiated at the University of Nevada, Las Vegas for all entering freshman and transfer students who composed the newly created University College. Every student was seen at least once during the semester. Those receiving deficiencies at mid-term were asked to see their counselors for the purpose of helping them reverse their academic status. At the conclusion of the first year of operation, 74% of the deficient students seen by counselors were able to pass their courses by the end of the semester. Special efforts were also made to congratulate students on the Dean's Honor List and give them encouragement. The freshman attrition rate was reduced from 45% to 6% during the first two years of the operation. There was a 9% increase of students on the Dean's Honor List and 25% increased their academic performance to a B average (3.00 or better). There were also fewer students on academic probation and fewer dismissed for academic reasons.

At the University of Minnesota in Fall 1980, 160 freshman students who had placed in the lower half of their high school class and below 50th percentile on the college's entrance examination were randomly assigned to an experimental group or a control group (Arrington & Romano 1981). The groups were matched on sex, high school rank, and entrance examination scores. The experimental group received counseling through the fall quarter initiated by the counselor. Those in the control group received no counseling unless initiated by the student. Counseling sessions included adjustment to the University, appropriateness of courses, information about and referral to campus services, contact with students' instructors, and follow-up of referrals. The experimental group was found to have a higher rate of persistence in the Winter and Spring quarters than the control group.

It has been strongly recommended that colleges spend more effort in publicizing counseling services to the student body. Colleges should have how-to-study programs that do not rely on the student's initiative to seek help. Students can be trained as peer counselors at relatively low cost to institutions and can be quite effective (Chickering & Hannah 1969). There is a need to conduct more research evaluating the effectiveness of different counseling programs.

The National Longitudinal Study

In 1968 the National Center for Educational Statistics (NCES) surveyed educational policy makers and researchers and found respondents expressed a need for data composing student educational and vocational experiences with later outcomes. In April 1970, educational researchers met with administrators from a number of United States Office of Education agencies. The National Longitudinal Study of the High School Class of 1972 reflects their guidance, interests and data needs.

The primary purpose of the NLS is the observation of the educational and vocational activities, plans, aspirations, and attitudes of young people after they leave high school and the investigation of the relationships of this information to their prior educational experiences, personal and biographical data. Ultimately the NLS should lead to better insights into the development of students as they pass through the American Educational System and an understanding of the complex factors associated with individual educational and career outcomes.

The full scale study was initiated in the Spring of 1972. Data is provided for approximately 21,000 seniors from 1,200 high schools. Each student completed a Student Questionnaire and took a 69 minute test battery. Additional questionnaires were completed by school administrators about their school's programs, resources, and grading system.

School counselors also completed a questionnaire about training and experience. The base year questionnaire was completed by 16,683 seniors.

The first follow-up survey began in October 1973. Added to the base year sample were more than 4,450 seniors from the class of 1972 in about 250 additional schools that had been unable to participate earlier as well as over 1,000 students who had been classified as base year non-participants. There were 21,350 sample members who completed a first follow-up questionnaire.

The second follow-up survey began in October 1974. Of the 21,350 persons who completed a first follow-up questionnaire, 20,194 also completed the second follow-up questionnaire. The third and fourth follow-up questionnaires came out in 1976 and 1979 respectively. Some 20,092 sample members completed the third follow-up questionnaire and some 18,630 completed the fourth.

Responses were weighted to provide estimated values for the total population. Weighted estimates have also been computed for different subgroups classified by sex, race, socio-economic status (SES), academic ability, type of high school program and region.

Summary

Lea, Sedlacek and Stewart (1979) have defined six general areas of problems in retention research: (1) the

problem of defining drop-out, (2) deficiencies in data bases from which studies originate, (3) scarcity of sequential, longitudinal studies, (4) failure to control the influence of confounding variables, (5) generalizability of results and (6) lack of a theoretical base from which to explain results. Frequency and quality of faculty contacts have a positive correlation with persistence. Minority student retention is a neglected area of research.

Although many studies have aimed at obtaining an understanding of student characteristics, few have been designed to analyze programs aimed at reducing attrition. Five studies investigating the relationship between counseling and persistence demonstrated a positive correlation.

The National Longitudinal Study was developed to gain a better understanding of the development of students as they pass through the American Educational System and the complex factors associated with individual educational and career outcomes. A base year questionnaire and four follow-up questionnaires were administered. Approximately 21,000 students from 1,200 high schools participated.

CHAPTER 3

RESEARCH PROCEDURES

Sample

The sample for the entire National Longitudinal Study (NLS) is a deeply stratified two stage sample with schools as first stage sampling units and students as second stage. The population consisted of all 1972 12th graders enrolled in all public, private and church affiliated high schools in the 50 states and District of Columbia (about 3.0 million). The first stage sample was constructed from files of the United States Office of Education and the National Catholic Education Association. The sample was stratified along the following variables:

1. Type of control (public or non-public),
2. Geographic region (Northeast, North Central, South, and West),
3. Grade 12 enrollment (less than 300; 300-599; 600 or more),
4. Proximity to institutions of higher learning,
5. Percentage minority group enrollment,
6. Income level of the community and
7. Degree of urbanization.

Schools in low income areas and schools with high proportions of minority group enrollments were sampled at approximately twice the rate used for the remaining schools. The sample design called for 1,200 schools and up to 17 students per school. Data were collected from 1,069 participating schools in the base year survey; 1,300 schools in the first follow-up survey and 1,318 schools in later follow-up surveys. Unadjusted student weights were calculated as the inverses of sample inclusion probabilities for all students sampled (National Longitudinal Study of the High School Class of 1972. . . , 1975).

For the purposes of this study, the sample will include all those students who participated in a formal program of higher education through October 1973 (approximately 11,400). Of this group, approximately 240 participated in special programs of academic and career counseling.

Instruments

The basic instruments of the study will be the base year and first follow-up questionnaires of the NLS. Specific questions will be used to collect data on the sample students pertaining to participation in counseling, persistence, locus of control, self-concept, socio-economic status, race, and high school grade point average (See Appendix A for questions).

Analysis of the Data

The data provided by student answers to questions from the NLS, was read into the CDC-CYBER 175 computer at the University of Arizona Computer Center. The data consisted of student answers pertaining to locus of control (LOCUS), self-concept (CONCPT), socio-economic status (SES), race (RACE), high school grade point average (HSGPA), participation in counseling (COUN), and persistence one and one half years after graduation from high school (PERS).

An existing computer program, Statistical Package for the Social Sciences (SPSS) was used to analyze the data. SPSS was designed to assist researchers in the social sciences overcome the problems of using many different single purpose data analysis programs, often written in different computer languages. The task of transferring data and results between essentially incompatible programs is difficult and time consuming. Researchers at Stanford University in 1965 began to design an integrated system that could automate the routine tasks of data processing around a series of statistical programs (Nie, Hull, Jenkins, Steinbrenner & Bent 1975). The basic data modification, file handling, and data description facilities were programmed and over time more statistical analysis procedures were added.

Since the object of this study is to correlate counseling with persistence, a partial correlation analysis, a variation of the multiple regression, was used with

persistence as the criterion. A partial correlation coefficient for counseling was calculated by partialling out the effects of all the other factors in the battery to indicate the net relationship between counseling and persistence, in effect holding the other factors constant (Nie et al., 1975). Numbers in the sample allow for a .05 level of significance. A value equal to or less than .05 will reject the null hypothesis. The general form of the regression equation is:

$$Y^1 = A + B_1X_1 + B_2X_2 + \dots + B_kX_k \quad (\text{Nie et al., 1975, p. 328}).$$

Major Findings

A preliminary regression was run on the battery of independent variables in order to determine the intercorrelation of the different factors. Where the relationship between two variables X and Y is a straight line, either all or a portion of the variation in the dependent variable can be accounted for by the independent variable. Table 1 shows the simple correlation coefficients demonstrating the intercorrelation of the battery of variables. All were significant at the .05 level.

Locus of control (LOCUS) and self-concept (CONCPT) were found to have a correlation of .99. This intercorrelation required that one of the variables be dropped as not to skew the results. Regression coefficients are only valid when the independent variables are not highly interrelated.

Table 1. Simple Correlation Coefficients for Intercorrelation of Variables

	PERS	COUN	HSGPA	CONCPT	RACE	SES	SEX
COUN	.0219 (.027)						
HSGPA	-.1799 (.001)	.0100 (.190)					
CONCPT	-.0085 (.228)	-.0102 (.184)	-.0052 (.323)				
RACE	.0213 (.030)	-.779 (.001)	-.1156 (.001)	-.0184 (.052)			
SES	.0633 (.001)	-.0113 (.158)	-.0036 (.377)	.0239 (.017)	.0709 (.001)		
SEX	.0040 (.001)	-.0004 (.485)	.0559 (.001)	.0126 (.133)	.0449 (.001)	.0161 (.077)	
LOCUS	-.0063 (.288)	-.0103 (.181)	-.0100 (.188)	.9948 (.001)	-.0139 (.110)	.0240 (.017)	.0138 (.112)

Tested at .05 level of significance

The locus of control variable was eliminated because self-concept accounted for more variance in the regression.

A second regression was run with six independent variables, this time giving instructions that the counseling variable (COUN) be pulled in the equation last, thus determining the net relation between counseling and the dependent variable, persistence, with values of all the other independent variables already accounted for. Table 2 shows the regression coefficients, beta weights, coefficients of determination (r^2) for all variables.

Table 2. Regression, Beta and Determination Coefficients

	Regression Coefficient	Beta Coefficient	Determination Coefficient
HSGPA	-.0231	-.1916	.0324
SEX	.0595	.0693	.0047
SES	.0113	.0624	.0038
CONCPT	-.0001	-.0117	.0001
RACE	-.0078	-.0067	.0001
COUN	.0709	.0239	.0006

The regression coefficient measures the slope of the regression line; that is, it shows the average number of units increase or decrease in the dependent variable which occurs with each increase of a specified unit in the independent variable. Its exact size depends upon the units in

which it is stated. When the regression coefficient is stated in terms of its own standard deviation, these new beta coefficients (beta weights) can be compared. The regression coefficient for counseling demonstrates the greatest amount of correlation of all the variables. The beta weights demonstrate the relative importance of each of the independent variables.

The coefficient of determination (r^2) also demonstrates the relative importance of the variables. It also shows what proportion of the variance in the value of the dependent variable can be explained by the concurrent variation in the values of the independent variables. In this case, the variance of all six independent variables accounted for about 4% of the variance. Counseling itself accounted for .06% of the variance. However, this coefficient is an arbitrary mathematical measure and can only be compared with other statistics like itself, derived from similar problems.

The other statistic of interest to this set of data is the partial correlation coefficient. In the case where there are many independent variables, as with the data here in this study, a partial correlation can be calculated to measure the correlation between the dependent variable and any of the several independent variables while eliminating any tendency of the remaining independent variables to obscure the relationship.

A partial correlation procedure was run with the same data used in the regression. Table 3 shows the partial correlation coefficient for counseling when associated with persistence along with the degrees of freedom (infinity in this case, for all practical purposes) and the level of significance. The value of the partial correlation coefficient has increased when compared to the original simple correlation coefficient before the effects of the other variables were taken into account (Table 1). The level of significance has also decreased, thus indicating a greater amount of statistical significance for the counseling coefficient. Only the partial correlation coefficient for counseling was calculated because for purposes of this study, only counseling was being considered for its net effect on persistence.

Table 3. Partial Correlation for Counseling

	Partial Correlation Coefficient	Degrees of Freedom	Level of Significance
COUN	.0243	7776	.016

The values for most of the variables in this equation were confined to a narrow range. Counseling, persistence, sex and race were all assigned values of one and zero only. According to Ezekial and Fox (1959, p. 197), "If only extremely low and extremely high values of X are selected for

inclusion in the sample, the (correlation and beta) coefficients will tend to be high; if the values of X are confined to a narrow range, they will tend to be low." Therefore, the value of the partial correlation is one that might be expected. The statistical significance of the coefficient at well below the .05 level demonstrates a meaningful relationship between counseling and persistence.

The stated hypothesis of this study is in the null form: There was no significant difference in the first year persistence rate of a group of college students who participated in counseling programs as opposed to a similar group not participating in counseling programs. Since the findings indicate a significant correlation between counseling and persistence, the null hypothesis could therefore be said to be rejected.

Summary

The sample for the study is taken from the NLS. The sample is a stratified two-stage sample with schools as the first stage and students as the second. Schools with high proportions of minorities were sampled at twice the rate used for the remaining schools. The basic instruments were the base year and follow-up questionnaires of the NLS. A multiple regression and partial correlation were run on the data using persistence as the dependent variable, counseling as the major independent variable and statistically controlling

for the effects of self-concept, socio-economic status, race, high school grade point average, and locus of control. The locus of control variable was eliminated after a high inter-correlation between self-concept and locus of control was demonstrated in the regression.

Counseling was found to have a partial correlation coefficient of .0243, significant at the .016 level. The total amount of variance accounted for by the independent variables was 4%. Counseling accounted for .06% as demonstrated by the determination coefficient (r^2). The low values of the coefficients can be accounted for by the narrow range of the values of the variables. The level of significance of the partial correlation coefficient rejects the null hypothesis.

CHAPTER 4

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Conclusions

Astin (1975) uses a regression model in order to predict student chances of dropping out. He originally selected 110 independent or predictor variables to enter into a stepwise regression equation, adding each one until no additional factors were adding significantly to the prediction of dropping out. Four regressions were done, one each for White men, White women, Blacks in Black colleges, and Blacks in White colleges; in all, over 200 correlation coefficients were calculated. His values range from .44208 to .00006. The majority have values between .1 and .001.

When such a large number of variables contribute to any single phenomenon, it is not unusual to expect each variable to account for only a small portion of the variance. In this case, persistence, there are not only Astin's 53 variables to take into account, but also the many factors for which variables cannot be constructed, such as motivation, expectations of college experience, goal changes, degree of socialization, etc., that may account for much of the drop out phenomenon. Most of these can only be accounted for by student responses to questionnaires which vary widely.

Astin's selection of 53 variables only roughly accounts for 25% of the total amount of variance. In this present study, six factors were considered. As was stated in the review of the literature, these variables are considered to have the greatest overall relationship to persistence. The small amount of the variance accounted for by these variables can be attributed to the complex nature of the persistence issue plus the usual expectation that in analysis of similar complex issues where many of the variables cannot be constructed only a portion of the variance is ever going to be accounted for.

As might be expected, high school grade point average had the greatest amount of correlation with persistence. Sex and socio-economic status were also very important. Although counseling itself accounted for less than one tenth of one percent of the variance, it is important to note that approximately only 240 students out of 11,420 sought academic or career counseling services outside of services already offered to all students. In raw terms, a significantly larger number of students in the counseling group persisted as compared to those that did not seek counseling, after accounting for differences in student characteristics. While still being statistically significant, the small amount of variance may be accounted for by the small number of students actually participating in counseling. Therefore, a strong case can be made for rejecting the null hypothesis.

Implications

The major finding that special programs of academic and career counseling in higher education can significantly reduce attrition of students should be of interest to administrators worried about shrinking enrollment pools as well as counselors concerned with developing programs to meet the needs of the contemporary student. The low number of students seeking such help demonstrates a need to develop outreach programs that bring the student into contact with counseling centers. A sizable number of students in this study did not even know that such programs existed. The community college appears to put more stress on this area.

From the students' point of view, individualized assistance in setting short and long-range academic and career goals can add increased relevance to the educational experience and increased integration into the academic and social environments of the campus. Growth and personal development are important concomitant functions of the college experience. The seven areas of development in college students', defined by Chickering (1969): achieving competence, managing emotions, becoming autonomous, establishing identity, freeing interpersonal relationships, clarifying purposes, and developing integrity, can be greatly enhanced by a students' positive experience in higher education. Academic and career counseling can play a major role in

determining student development. Persistence is a concomitant result.

Recommendations for Further Research

Studies in retention have traditionally researched student characteristics in order to determine what type of students drop out. Certainly there are a vast number of variables affecting a student's decision to drop out. Statistically, some of those factors are more important than others. This data can be used either to screen students for admission or to assist students after entry.

In the latter case, more research is needed analyzing the relationship of various intervention programs to retention. Counseling programs can be of great benefit in this area. Students from a variety of educational, socio-economic and minority groups can be integrated into the campus environments and given the college and life survival skills that they need. Counseling can provide solutions to a wide variety of problems. Goal-setting can give the student a greater sense of purpose and motivation.

The use of the regression has its limitations although some form of multivariate analysis is essential. Adding more variables to the regression could increase the accuracy of the results.

Specific and well controlled counseling programs could more accurately gauge effects on students. Students

could be identified as potential drop out risks and contacted by the counseling office rather than allowing them to be self-selecting. Career exploration, goal setting, communication skills, or a combination, might be made part of the regular curriculum.

This study has shown that counseling programs in higher education can be of benefit to students and can positively affect retention.

APPENDIX A

QUESTIONS USED FROM THE
NATIONAL LONGITUDINAL STUDY*

* National Longitudinal Study of the High School Class of 1972. U. S. Department of Health, Education and Welfare, Education Division, National Center for Education Statistics, 1975.

Persistence

- FQ25 Were you taking classes or courses at any school during the first week of October 1973?
(Yes or No)
- FQ29A Now please think back a year to Fall of 1972. Were you taking classes or courses at any school during the month of October 1972?
(Yes or No)

Locus of Control

- BQ21 How do you feel about each of the following statements?
- BQ21B Good luck is more important than hard work for success.
(Agree or Disagree)
- BQ21E Every time I try to get ahead, something or somebody stops me.
(Agree or Disagree)
- BQ21F Planning only makes a person unhappy since plans hardly ever work out anyway.
(Agree or Disagree)
- BQ21G People who accept their condition in life are happier than those who try to change things.
(Agree or Disagree)

Self-Concept

- BQ21 How do you feel about each of the following statements?
- BQ21A I take a positive attitude towards myself.
(Agree or Disagree)
- BQ21C I feel I am a person of worth, on an equal plane with others.
(Agree or Disagree)
- BQ21D I am able to do things as well as most other people.
(Agree or Disagree)
- BQ21H On the whole I'm satisfied with myself.
(Agree or Disagree)

Socio-economic Status

- BQ90 What was the highest educational level each of the following persons completed? If not sure please give your best guess.
- BQ90A Father or male guardian
- BQ90B Mother or female guardian
- BQ93 What is the approximate income before taxes of your parents (or guardian)? Include taxable and non-taxable income from all sources.
- BQ94 Which of the following do you have in your home?
- BQ94A A specific place for study
- BQ94B Daily newspaper
- BQ94C Dictionary
- BQ94D Encyclopedia or other reference books
- BQ94E Magazines
- BQ94F Record player
- BQ94G Tape recorder or cassette player
- BQ94H Color television
- BQ94I Typewriter
- BQ94J Electric dishwasher
- BQ94K Two or more cars or trucks that run
- BQ97 What kind of work does your father or male guardian usually do?

Counseling

- FQ44A Between time you left high school and October 1973, had you participated in a formal program of academic or career counseling, tutoring, or remedial courses other than those services that were provided to all students in your college, school, or training area?
(Yes or No)
- FQ44B What was the exact name, nature, and location of the program in which you participated?
- FQ44BB Counseling (Applies to me or does not apply to me)

Race

BQ84 How do you describe yourself?
American Indian
Black or Afro-American or Negro
Mexican-American or Chicano
Puerto Rican
Other Latin American origin
Oriental or Asian American
White or Caucasian
Other

High School Grade Point Average

SRFQ1 What is the student's overall academic average?

BQ Base Year Questionnaire

FQ First Follow-up Questionnaire

SRFQ Student's School Record Information

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