


AN ABSTRACT OF THE THESIS OF

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Title: A STUDY OF STUDENT CHARACTERISTICS, ATTITUDES, AND
ATTRITION FROM SECRETARIAL SCIENCE PROGRAMS IN SEVEN
SELECTED TWO-YEAR POST-SECONDARY EDUCATIONAL INSTITUTIONS
IN ALBERTA

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Abstract approved: 

Dr. Fred E. Winger

Mounting inflationary economic pressures and the obvious spiralling costs of education, at all levels, has drastically augmented public, administrative, and government concern regarding the effectiveness of many educational training programs. Secretarial Science, which is designed to provide occupational-level training represents such a program.

Therefore, this study was conducted in order to gather pertinent information about secretarial science students who attend post-secondary non-university institutions in Alberta.

Specifically, an attempt was made to:

1. identify student characteristics and attitudes.
2. identify differences between students attending "public colleges" and "other institutions."
3. determine whether or not identifiable differences exist between secretarial dropout students and secretarial persister students.

4. determine the reasons why secretarial science students withdraw from the secretarial programs.

The sample population consisted of 308 secretarial science students enrolled in seven institutions in Alberta--three public colleges, a technical institute, an agricultural/vocational college, and two vocational centers.

The data emanated from the administration of the College Auto-Biographical Inventory, a 110-question forced-choice personal and attitudinal inventory and from follow-up data collected on withdrawal students.

Statistical treatment included frequency counts, percentage distributions, chi square analysis, and discriminant function analysis.

The results of the findings indicated that 99 percent of the students surveyed were females with an average age of 21.84 years--two-thirds were single. One-half of the students came from rural areas or small towns, and four-fifths had attended a small high school. Nine out of ten students had taken at least one "business or commercial" course during high school. Three-quarters of the students entered college within a year of completing high school. Two-fifths of the students lived within 10 miles of the institution they attended.

As for attitudes, four-fifths of the students indicated that they had family support for choosing secretarial training. At least two-thirds of the students reported positive responses to their decision to attend a college for their post-secondary education, to enroll in a secretarial program, and to attend that particular institution.

A chi square analysis of the data identified 18 variables (15 personal characteristics and 3 attitudinal) which differentiated between "public colleges" students and "other institutions" students. An additional 18 variables (12 attitudinal and 6 personal characteristics) were also identified which differentiated between secretarial dropout students and secretarial persister students.

A stepwise discriminant function analysis identified 12 variables which differentiated between dropout and persister students and produced two Discriminant Function Coefficient equations which accurately categorized 82 percent of the students into either the

persister or dropout groups.

The major conclusions reached indicated that:

- 1) Alberta secretarial science students share a high percentage of common personal characteristics and attitudes with their peers across Canada and the United States.
- 2) employment, transfer, and domestic reasons accounted for one-half of the attrition students, although 12 distinct attrition categories were identified.

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SEVEN SELECTED TWO-YEAR POST-SECONDARY
EDUCATIONAL INSTITUTIONS IN ALBERTA

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I. INTRODUCTION

Background to the Problem

In Alberta the Department of Advanced Education is responsible for providing and maintaining post-secondary education in the Province. Post-secondary education basically consists of the university and the non-university areas, with the latter composed of four subsystems: technical institutes, public colleges, agricultural and vocational colleges, and vocational centers (Bosetti, 1972, p. 93). These different types of institutions offer a broad spectrum of course content in the field of business training--including the broad area normally known as secretarial science. Within each subsystem each of the individual institutions, through coordination of the Department of Advanced Education, is basically responsible for establishing and maintaining its own program of study and entrance requirements. As a result, the individual variation of each of these secretarial programs, when combined with the diverse backgrounds of the hundreds of secretarial students across the province, provides a learning environment which embodies a multifarious mosaic of students' interests, desires, and abilities. Because of the number of students who do not complete the secretarial program there is little wonder, then, that the programs cannot completely fulfill all of the expectations of these students.

Bosetti (1972, p. 13) estimates that in Alberta post-secondary non-university institutions only 62 percent complete a certificate program (one-year requirement) and a mere 43 percent complete the diploma program (two-year requirement). These figures reflect the general trend across North America as indicated in the literature that deals with the general topic of community college students and their associated attrition problems.

The lack of available detailed descriptive and normative information about community college students in Alberta in general, and secretarial science students specifically, is evident by a search of published material on the subject. Although many institutions do keep adequate records, and some actually engage in institutional research, very little of this information and data is compiled by the Department of Advanced Education or is ever made available to educators outside of the individual institution.

Statement of the Problem

The available literature on the topic of the dropout dilemma indicates that for many post-secondary institutions the attrition rate runs anywhere from 30 percent to well over 50 percent. This phenomenon occurs at both the two-year and the four-year college level in the United States and Canada.

Gardner (1968, p. 1104), for example, reports that Northwest Mississippi Junior College experienced a 39.5 percent loss of freshman students who were eligible to enroll in September of 1967; while LeMay (1973) commenting in a university publication, reports that in the School of Business and Technology at Oregon State University, 32 percent of its male freshman class and 43 percent of the female freshman class did not complete one full year of the 1972 academic year. Burn (1971, p. 96) indicates that a similar situation also exists in Canada as she reports that "between one-third and one-fourth of the students entering Canadian colleges and universities fail to obtain their first degrees," with some faculties losing up to 50 percent of their students. Unfortunately, these figures also agree with the Alberta post-secondary educational dropout rates of 30 to 60 percent as already indicated by Bosetti.

Meanwhile, at Miami-Dade Junior College, in Florida, Lawhorn (1971, p. 1) indicates that the secretarial science program attrition rate in that institution was almost 50 percent. According to information obtained from registrar records from a random number of post-secondary institutions in Alberta, the dropout rate in 1973-74 academic year among secretarial science students ranged from under 15 percent to about

25 percent; while in the following year, 1974-75, a survey of 70 percent of the post-secondary institutions indicated that the dropout rate reached as high as 40 percent.

However, perhaps a better index of actual success in the secretarial program is indicated by the percentage of students who complete the course requirements and actually graduate with a recognized certificate or diploma. In the academic year of 1974-75, the actual completion rate of secretarial science students graduating from one- and two-year programs in Alberta varied from a low of 40 percent to a high of 85 percent.

The Department of Advanced Education, along with administrators and instructors in the various post-secondary institutions in the province, is vitally interested in determining the cause or causes for this perplexing situation because of the resulting spiralling costs and the ever-increasing negative impact that surrounds the early withdrawal of students from these educational programs. The result of this attrition phenomenon has a twofold impact: an institutional loss as well as an individual loss. As Monroe (1973, p. 208) states, ". . . dropouts are a waste of time and money unless there is evidence that they have received satisfaction of goals and needs." At present, with the given information that is available, it is literally impossible to determine whether or not the goals and needs of these two-year post-secondary secretarial science students are being met.

More specifically, the following questions must be asked of the existing secretarial science programs as they now function in Alberta. In post-secondary non-university educational institutions in Alberta:

1. What are the individual characteristics of secretarial science students?
2. What are the identifiable attitudes of secretarial science students?
3. Do the characteristics and attitudes of secretarial science students attending public colleges significantly differ from those attending other types of institutions?
4. Do secretarial science students have identifiable characteristics or attitudes which contribute to the dropout syndrome?

5. Why do secretarial science students become dropouts?

Null Hypotheses

1. There is no significant difference between the responses from the secretarial science students attending "public colleges" and the secretarial science students attending "other institutions" to the 52 College Auto-Biographical Inventory statements dealing with personal student characteristics.
2. There is no significant difference between the responses from the secretarial science students attending "public colleges" and the secretarial science students attending "other institutions" to the 58 College Auto-Biographical Inventory statements dealing with attitudes.
3. There is no significant difference between the responses from the secretarial science dropout students and the secretarial science persister students to the 52 College Auto-Biographical Inventory statements dealing with personal student characteristics.
4. There is no significant difference between the responses from the secretarial science dropout students and the secretarial science persister students to the 58 College Auto-Biographical Inventory statements dealing with attitudes.

Need for the Study

The purpose of this study was to supplement the existing body of knowledge that for the most part deals almost exclusively with student characteristics and the associated problems of attrition in United States educational institutions.

Research at the two-year college level is lagging in both Canada and the United States in comparison to the availability of studies conducted at the four-year college level. More specifically, comprehensive studies involving students enrolled in secretarial science programs in the community colleges are practically non-existent, particularly in Alberta, and this lack of explicit and detailed information has a negative influence on the development and improvement of these programs throughout the province.

The findings of this study were to provide information leading to the construction of a profile of characteristics and attitudes of secretarial science students in Alberta, by making inter-institutional

and intra-institutional group comparisons from the obtained student data as well as, where possible, make comparisons with similar students in the United States. In addition, the study considered the salient characteristics of attrition--the reasons and factors that contribute to early withdrawal from college--and what remedial steps might be taken to lower the withdrawal rate. More specifically, this study presented additional information for those educational officials responsible for implementing and operating the many secretarial programs in the various institutions throughout the province.

Limitations of the Study

The following were delimitations placed upon the study:

1. The study included all full-time secretarial students who enrolled in or were already enrolled in the program during either the fall of 1975 and/or spring of 1976 in selected representative two-year post-secondary institutions in Alberta.
2. The College Auto-Biographical Inventory (CABI) data collection phase of the study covered the period from September 1, 1975, to April 30, 1976, and included normal academic institutional time allotments of quarters, semesters, trimesters, and four-week entry points.
3. Follow-up data collection began May 1, 1976, and continued through October 30, 1976.
4. The study did not include part-time students who were enrolled in secretarial programs, nor did it include non-secretarial students who were taking some courses in the regular secretarial program.
5. The students who comprised the sample population responded to a forced-choice five-response 110-question inventory and were given the alternative of leaving any particular question blank.
6. The dropout student characteristics composite profile included only students who were readily identifiable by the institution as such. A small number of institutions did not have this information readily available. It is possible that some students who did not register at the beginning of the 1976 academic year, although their program was not completed in 1975, were subsequently not identified by their own institution as dropouts.

7. Both one- and two-year students were combined for this study with the two-year student population representing about 15 percent of the sample.

Definitions

Dropout Rate	The percentage loss of students to the college for any reason during the normal period of time required for graduation--up to two years.
Dropout, attrition or early withdrawal student	A student who has paid fees for a quarter, semester, trimester, or any recognized standard length of academic time and who has attended classes and then subsequently withdraws from the institution and does not complete the specified sequence of courses for that particular secretarial program in the normal time allotment.
Persister or continuer	A student who enrolls in a secretarial science program and completes the graduation requirements for that program as prescribed by that institution in the normally allotted academic time period.
Post-secondary institution, community/junior college, technical, agricultural, or vocational school	A two-year institution of higher education, generally public, offering instruction adapted in content, level, and schedule to the needs of the community in which it is located. Offerings usually include a transfer curriculum (credits transferable toward a bachelor's degree), occupation (or terminal) curriculums, general education, and adult education.*
Program	A selection of sequential and related courses designed by a recognized post-secondary institution in Alberta and offered to students for a designated certificate or diploma.
Secretarial science program	A selection of sequential and related stenographic, clerical, and other related courses designed by a recognized post-secondary institution in Alberta and offered to students for a designated secretarial certificate or diploma.

* Handbook of Data and Definitions in Higher Education

Secretarial science
student

A full-time student who enrolls in a post-secondary, non-university educational institution in the province of Alberta and begins a program which offers a certificate or diploma in secretarial and/or clerical skills and is classified under the broad definition as a secretarial student in that institution.

Withdrawal

Cancellation of enrollment from any two-year post-secondary educational institution for any reason.

II. LITERATURE REVIEW

Two-Year Educational Institutions--Community Colleges

A brief review of some background information dealing with the developmental phases of the two-year institutions is a vital aspect in understanding the heterogeneous composition of the two-year post-secondary students.

Although, as Monroe (1973, p. 1) states, "The public community college was born in the image of the public school and thus has its roots in the public school system," it soon began contributing in a unique and ever-expanding role in the education of many students--both young and old. Hall (1974, p. 13) also agrees and further elaborates in his description of the historical evolution of two-year colleges when he explains that "Community colleges started their era of rapid growth following World War II as a stepchild of secondary education. Cramped into meager quarters with limited resources, the colleges attempted their experiment of the democratization of American post-secondary education. Success gradually followed, and during the 1950's and 1960's hundreds of colleges were opened, with lavish funding."

From that humble beginning back in 1901, with the tremendous obstacles of small enrollments, limited course offerings, and inadequate facilities, the vision of an education for everyone has now led to well over 1,100 institutions and a vast educational network which literally blankets all of North America. Although, as Monroe (1973, pp. 2 & 3) notes, the often quoted goal of a "universal education for at least two years beyond high school" has not yet been attained, he predicts that by 1980 about 75 percent of all college freshmen will be attending community colleges.

A similar situation exists in Canada as well, for Katz (1974, p. 70) states that in the year 1969-70 there was an estimated total of 481,500 students enrolled in higher education--300,000 in university programs, and the remaining 181,500 students in a variety of non-university programs. He further indicates that during the past two decades total enrollment increases for both of types of programs have exceeded 400

percent--a jump from 80,000 to over 450,000 students.

Although the evolution of the two-year college system has undergone numerous changes in emphasis in relation to course content and program offerings since its initial inception some seventy-five years ago, Gleazer (1967, p. 4) suggests that:

While the conventional liberal arts and general education programs leading to transfer are still a vital part of the two-year college endeavor, most of the institutions now also emphasize courses of study that will prepare men and women to fill positions immediately in business and industry, government, social service, and other areas essential to the development of the nation. The importance of education to the fulfillment of the individual has also been recognized in the changing pattern of junior college education.

This innate ability of the colleges to adapt to rapidly changing conditions has been one of the major reasons for their phenomenal growth, obvious acceptance, and apparent success. In describing how the community college is adaptable, Fields (1962, p. 91) says, "All institutions are dedicated to the achievement of purposes--clearly defined or hazily conceived, specifically stated or unconsciously assumed, religious, idealistic, mundane, practical." Looking at community colleges today, Martin (1974, p. 34) explains that:

Community colleges are undergoing a number of major shifts. Changes are taking place in philosophy of the institutions, including recognition of the need to address social problems and in approaches to individual educational needs. The traditional student is being joined by older students, there to start an education postponed at an earlier age or to refresh knowledge, and by students eager to get a marketable skill. The traditional types of facilities are making way for physical plants more in line with the philosophy of service along a variety of lines. Curricula are constantly being added to and changed in response to economic demands.

Today, although recognized institutions offer from one to three years of specialized training programs, by far the vast majority offer a somewhat standardized two-year program. These institutions are most commonly called public community colleges and emphasize a comprehensive curriculum offering to a wide clientele of students of all ages 17 years

and above; however, exceptions in names and areas of specialization do occur. For example, there are technical, agricultural, vocational, and junior colleges to name a few of the more common designations which offer specialization in a number of different educational areas. In Canada, additional institutional designations such as Colleges of Applied Arts and Technology (CAATS) and Collèges d'Enseignement Général et Professionnel (CEGEP) could also be added.

In attempting to explain the development of the community college movement and its ultimate attainment of an independent and unique educational character, separate and distinct from its founding roots in the public school system, Leslie, Martorana, and Fife (1975, p. 20) note that:

Community colleges . . . whether ideologically motivated or pragmatically responsive to external forces such as accrediting agencies, are somewhat more like traditional colleges and universities in that they often require modest to moderate general education coursework only indirectly related to the learning of job skills.

Therefore, today there exists institutions generally known as community/junior colleges which tend to emulate a general liberal arts institution as found in universities on the one hand, and highly specialized and technical trade areas on the other hand. This diversity of purpose leads Baird (1967) to comment that because diversity characterizes American higher education, it become difficult to make accurate and valid generalizations about the standards and purposes of higher education as a whole. As a result, Cohen et al (1971, p. 91) declare:

In any attempt to reconcile institutional offerings and activities with the needs of college-going populations, it is important to understand these differences. In this sense, the college that offers a buffet lunch of courses and activities seems to be on the right track.

This diversity to educational approaches is evident in Canada as well, for as Kintzer (1973, p. 127) says:

The Canadian scene of post-secondary education, particularly in patterns of the institutions with less than university status, defies a composite picture. The characteristics of these institutions exhibit an even greater diversity than the community junior colleges of the United States.

He further elaborates by stating: "During the past decade, the provinces have reemphasized their individuality of educational preference, further differentiating their provincial educational systems by establishing markedly different forms of post-secondary institutions."

Commenting in the preface of his book, Monroe (1973) emphatically maintains that ". . . the public community college is a unique, significant, dynamic, and challenging part of higher education. In it rests the hope of fulfilling the promise of a universal post-secondary education." The same sentiment is echoed by Cleveland and West (1975, p. 57) when they predict that in the future:

The individual in search of a sense of community can find it on a community college campus, where belongingness and student-centeredness constitute the key. There, the unemployed will be able to retool or alter career patterns. The worker may perfect his skills. The retiree is invited to spend leisure time more profitably, developing avocations or pursuing higher educational goals. The idle can discover useful and exciting hobbies or indulge in a variety of physical activities.

Perhaps, however, Gleazer (1968, p. 28) best summarizes the amazing phenomena of the community college movement when he concludes:

For the most part, the community college has become a comprehensive institution with a great variety of programs to match the cross section of the community represented in its students . . . The comprehensive community college exists to give students opportunity beyond the high school to find suitable lines of educational development in a social environment of wide range of interests, capacities, aptitudes, and type of intelligence.

Community College Students -- Characteristics and Attitudes

Overview

Although the existing body of general information about the two-year college student has steadily and systematically begun to accumulate, particularly over the past ten to fifteen years, the specific area of secretarial science studies, by comparison, has only an infinitesimal amount of detailed information available. Therefore, of necessity, the majority of the following summarized information deals

with all community college students. However, data relating specifically to secretarial science students exclusively will be presented in a later section. The information concerning community college students and their associated attrition problems will be presented in two phases--first, the characteristics and attitudes of these students as they function in their respective institutions, and second, the characteristics of "dropouts", "stopouts", or "attrition" students as they differ from their "persister" colleagues.

Inherent problems of considerable import always arise whenever a group, particularly a widely scattered geographic and multi-institutional student body, is systematically categorized and conveniently summarized into neat and representative descriptive and statistical representations. Specifically, Cross (1968, p. 8) says in describing what happens when an attempt is made to summarize and synthesize the data that exists on community college students:

The picture that emerges is, of course, not that of any individual junior college student but of a mythical one whose sole distinction is that he shares more characteristics with his junior college peers than is likely for any real human being.

Nevertheless, notwithstanding the many potential pitfalls that have been suggested, numerous noted authorities in the field of community college education have published considerable detail from their many studies. For example, according to Baird, Richards, and Shevel (1969) the composite profile of a "typical" student suggest a commuter who attended high school just before entering college, a person who is financing his education by working, views vocational training as the most important goal of college attendance, and feels that the college environment and instruction provide a positive experience.

It is interesting to note that the typical two-year college student of today when compared to his counterpart of a few years ago has not drastically changed, for as Wise (1958, p. 2) commented:

College students today range from young to old, able to mediocre, idealistic to practical, naive to sophisticated, rich to poor; they are of all races, of all faiths--and of no faith. They are both full-time students and part-time students; they are both self-supporting and still dependent on their families. All these go to college, each for his own purpose. As the number of students continue to increase, so does the range of their individual differences.

This classical description still holds today as well. However, when making comparisons of two-year college students and their four-year peers in higher education, Brawer (1967), Cross (1968), and Knoell (1970) all agree that the following conclusions can be reached. The two-year college student is:

less adequate academically than his peers in four-year programs
less able to perform tasks developed for different types of
students

less highly motivated toward educational success.

On the other hand, the two-year college student displays a sharp differentiation on the basis of intellectual dimension. It should also be noted, however, that considerable overlap exists between both groups in all of the above-mentioned areas.

Academic Characteristics

The academic ability of all post-secondary non-university students has been an on-going controversial area of concern and discussion for many years. During the past two decades numerous national studies, utilizing a number of recognized standardized testing instruments have been reported. Cross (1968, p. 11) indicates that the academic ability of students is one of the best researched areas in higher education and that this opinion is based on intensive studies which reportedly have measured 14 different ability areas--from reading comprehension, mathematics ability, biology, to vocabulary information, creativity, and abstract reasoning. Included in these studies are: Project Talent (Flanagan and Cooley, 1966); Preliminary Scholastic Aptitude Test (Seibel, 1965); the American College Testing Program (Hoyt and Munday, 1966); The School and College Ability Test (Medsker and Trent, 1965);

the College Qualification Test (Seashore, 1958); a rank-in-high-school-class index (Seibel, 1965; and Medsker and Trent, 1965); and reported high school grades (Astin, Panos, and Creager, 1967; Panos, 1966; and ACT profile, 1966).

Cross (1968, p. 12) indicates that the percentage relationship between academic ability, verbal ability, and mathematical ability and activity after high school graduation shows that 71 percent of the four-year college students scored in the top third of the School and College Ability Test II, while 36 percent of the two-year college and only 16 percent of the noncollege group scored in the top third of the total AAT score (also known as the Academic Ability Test). Results further indicate that four-year college students exceed (means scores) that of two-year college students, but on the other hand the two-year college students score higher as a group than do high school graduates who do not go on to college.

Medsker and Trent (1965) found that four-year colleges draw approximately three-fourths of their freshmen from the upper 40 percent of the high school graduating class, whereas about half the junior college transfer students were in the upper 40 percent of their high school graduating classes.

Monroe (1973, p. 184) quoting from a speech given by Jane Matson in March of 1968 in Chicago, reiterates that in 1953, 48 percent of the top quarter high school graduates were going to college, while in 1960 that figure had jumped to 80 percent for the same group.

Although Tillery (1963) found that 18 percent of the high-ability high school graduates in California who were eligible to enter the state university (roughly the upper 15 percent of high school graduating classes) entered a two-year college instead. He estimated that this very high performance group constituted about five percent of the junior college freshmen in 1961.

Because of the increased emphasis upon and demand for higher education, Cross (1968, p. 14) suggests "the student new to higher education--the student now entering the junior college--is of necessity going to come increasingly from the second, third, and lowest quartiles."

Although Turnbull (1967) also agrees with this conclusion, Hoyt and Munday (1966) point out that practically every two-year institution has academically competitive individual students on a par with four-year college students. As a matter of fact, Hoyt and Munday (1969, p. 108) three years later state that the differences among the various junior colleges in academic potential were so great that the least able in one college could be well above average in another. "Similarly, the average in potential at several junior colleges was well above the average in typical four-year institutions."

Therefore, as Cross (1968, p. 12) suggests, the two-year college student population, academically, includes 25 percent from the lowest third of the high school graduating class to some of the top students in the nation.

Approximately 90 percent of the students enrolling in the two-year college system reported attending a public high school, with 40 percent of the females and 60 percent of the males averaging a "C" grade in their high school programs. Fifty-five percent of the females and 35 percent of the males averages a "B" grade, and only 4 percent and 2 percent respectively, averages an "A" grade. (Panos and Alexander, 1967, p. 166). Snyder and Blocker (1969a, p. 3) found that 40 percent of their students indicated a grade point average of from 2.0 to 2.49, and 50 percent indicated a g.p.a. of 2.50 or better. This upward trend in grades appears to be reinforced by the findings of Astin et al (1975, p. 25) when they report that the average female high school grade earned, in 1974, for freshman students enrolling in community colleges was 12 percent "A", 64 percent "B", 23 percent "C", and less than 1 percent "D". Assuming that grading procedures have not drastically changed across the nation, within the past few years, it appears that better qualified students are now entering the two-year college system.

Biographical Characteristics

Demographic Data - Published research dealing with student characteristics, biographic, demographic, and socio-economic data, ranges from studies conducted on entire student populations to student samples and are reported in a variety of ways including descriptive narration, as

well as graphic and tabular presentations.

According to Astin et al (1975) in their summary of freshman national norms for the fall of 1974, about three-quarters of all two-year college freshmen are 18 years of age, with just over 90 percent being less than 20 years of age. Koos (1970, p. 7) indicates that about seven-eighths of the students are below twenty-two years of age, while Snyder and Blocker (1969a, p. 3) state that half of the students were 19 or 20 years old, but that one-fifth were 21 to 24 years, and 13 percent were 30 years old or more. Kievit (1971, p. 5) notes that over 90 percent of the students were 25 years of age or less, while Brown (1967, p. 329) indicates that the typical college age is 18 years, with men being just slightly older than women. These ages are holding fairly constant according to the American Council on Education Report (1972), although Panos and Astin (1967a, p. 162) reported that in the fall of 1965 the freshman class was comprised of 93 percent of the men at 18 years or younger, while 96 percent of the females were 18 or younger. As Raines (1967, p. 13) comments, the public junior (community) colleges are composed of two major population groups--the traditional under 20 age population attending day classes on a full-time basis, many working part-time, and partially or completely self-supporting; and the older (over 20 years of age) student population attending on a part-time and evening basis. The majority of the latter are full-time employees who carry partial program loads with a small but significant portion being "retreads" from other occupational areas of endeavour. The number of students in this category is slowly increasing as evidenced by the somewhat lower percentage of students under the 20 years category, as already noted by the 1974 norms. Monroe (1973, p. 186) indicates that the number of adult part-time students has risen from about one-third to one-half of the total institutional enrollment from the years 1940 to 1970.

The student enrollment for two-year institutions categorized according to sex shows that in 1965 men represented 55 percent and women 45 percent of the total enrollment (Panos and Astin, 1967a, p. 162); while the United States Office of Education reported 52 percent

males and 48 percent females. In general, males continually have outnumbered females--in 1952 according to Medsker (1960, p. 45) by three to one, Snyder and Blocker (1969a, p. 3) report similar results. Brown (1967, p. 329) indicates a 59 percent male population in 1962, while Monroe (1973, p. 187) indicates the percentage varies from 58 to 62 for males involving studies conducted near the end of the 1960's. Kievit (1971, p. 5) says that slightly over half of the students were male, while Alfred and Good (1972, p. 8) report that in the three community college districts in Metropolitan Kansas City that women comprise about 43 percent of the total enrollment. Astin et al (1975) reports that of the 75 two-year institutions surveyed (comprising 27,852 first-time, full-time entering freshman students) that 53 percent were males and 47 percent were females.

Snyder and Blocker (1969a, p. 3) indicated from their study that almost three-quarters of the "regular" students were single, while two-thirds of the "special" students were married. Hunt (1966, p. 104) reports that 25 percent of the female students were married, while 70 percent of the married women were attending college on a part-time basis. Kievit (1971, p. 5) reported in her study that 90 percent of the students were single. The ACE research for the fall of 1972 indicates that over 90 percent of the freshman class reported they were not married, and by 1974 this figure was close to 95 percent (Astin et al, 1975).

Panos and Astin (1967a, p. 164) indicate that over half of the students sampled reported Protestant family religious backgrounds, and about one-quarter reported Roman Catholic religious affiliations. Eight percent of students indicated no religious preference and three percent indicated no family religious background. These same percentage are basically the same for the 1972 freshman class and the 1974 class, except in the latter instance, about one-third of the students reported Roman Catholic family preferences, according to Astin et al (1975).

Socio-Economic Data - The premise that the characteristics of young people--interests, attitudes, and to some extent talents and abilities--is shaped by their past experiences and home environments, is reflected by numerous research studies dealing with the consistently

high correlation between the socioeconomic hierarchy and ability indices. According to Cross (1970), the universities are attended by a large percentage of the richest and most academically able students, followed in decreasing numbers by liberal arts colleges, public state colleges, two-year colleges, and occupational and specialized schools.

In a study of over eight thousand students in California community colleges, Anderson (1934, p. 172) reports that almost two-thirds of the students came from upper-middle class families, with only one-quarter coming from working-class families. Some twenty years later, Havighurst and Neugarten (1957, p. 257) estimated that not more than five percent of the students enrolled in a metropolitan community college were from the upper class. Meanwhile, Medsker (1960, p. 41) indicates that just under one-third of community college students came from professional and upper-middle class families. The same year Clark (1960, pp. 57-60) reported that lower white-collar and blue-collar families supplied three-fourths of the community college students in his study--Kievit (1971, p. 5) also reported similar findings ten years later.

The socio-economic background of students attending the various institutions of higher learning, according to two significant studies conducted during the last fifteen years, indicates that a definite relationship does exist between such demographic factors as the father's educational background, occupation, and family income and the type of educational institution the children will attend. Medsker and Trent (1965) studied 10,000 high school graduates in 1959, and Astin et al (1967) reported on their national American Council on Education study of 250,000 college freshmen conducted in 1966. As Cross (1968) notes, both studies showed a very obvious similar socioeconomic order in that 60 to 65 percent of the children of college-educated parents, with a high occupational level, and high income attended private universities, as opposed to 30 to 40 percent of similar high socioeconomic background children who chose public two-year colleges. Citing data from the College Boards new Comparative Guidance and Placement Program, Cross (1970) states that most students are first-generation college students and that only 20 percent of the technical students and only 15 percent of the

vocational students come from homes where the father has had any college experience. Puffer (1971), in a study conducted at a technical institute in Alberta, also concurs with these findings.

Cooley and Becker (1966), after analyzing the data generated from Project TALENT, a twenty-year longitudinal study of nearly half a million students as they progressed through the educational system, report that although junior college students are more similar to four-year college students, they do, however, fall somewhere between the four-year and non-college students, based on a seven-point scale of socioeconomic status. Included in this scale are such items as the educational level of both parents, father's occupation, whether or not the student has a room of his own, a desk, a typewriter, television, and radio, as well as the number of books in the home. Reinforcing these same conclusions are Flanagan et al (1964) who note that freshmen in community colleges, for the most part, are very similar to high school seniors in tested academic ability, except that the community college students have considerably more students in the middle ability range and that they do not have the extreme very high and very low ability scores of the high school seniors.

In their report of environmental factors which affect the community college student, Snyder and Blocker (1969a, p. 7) concur with the American Council on Education findings in 1967 which indicated that on the lower end of the educational spectrum nearly one-third of the mothers and just over one-third of the fathers of community college students did not graduate from high school; while at the upper end, only four percent of mothers and twelve percent of fathers earned at least a bachelors degree. Kievit (1971, p. 5) reported that about 70 percent of the parents had a high school education or less. These findings, which indicate that at the lower levels the mothers were better educated while at the upper levels the fathers were better educated, also support Havighurst and Neugarten (1957, pp. 74, 75, 98), who report that the national patterns reflect the fact that males tend more frequently to drop out of secondary school, while higher education is more important for males than for females.

Flanagan and Cooley (1966) reported on the data collected from the Project TALENT that tests of information and reading comprehension were significantly related to measures of ability. This finding is somewhat confirmed by Schoenfeldt (1966) who, also reporting on the Project TALENT study, concludes that the socioeconomic status of the family had less influence on whether or not the student would go to college than did his academic ability. Also supporting this position is Anthony (1964), who states that transfer students from two-year institutions generally come from higher socioeconomic levels, come from academic high school backgrounds, tend to score higher on college tests, more often emphasize the so-called prestigious careers, and are upwardly mobile. Medsker and Trent (1965), however, note that the father's occupation had more influence on college attendance than did the ability of the student.

Fenske (1969), analyzing ACT data, notes that although significantly more seniors from the lowest 30 percent ranking in scholastic ability indicated technical/vocational career plans, the presence of a local technical/vocational college was a major factor in determining the actual type of institution attended.

A major study conducted by the Educational Testing Service at Princeton in 1966 found that about half of the freshmen registered were in university transfer programs; one-quarter were in technical programs; one-fifth in general, developmental, and related educational courses; and about one-twentieth in vocational courses.

According to comparisons conducted by Behm (1967) and Nagle (1965), female students in university transfer programs and occupational programs exhibited little difference in academic ability. Those same two researchers, along with McCallum (1967), Hakanson (1967), and ETS (1968), however, report that academically, men in occupational programs do score significantly lower when compared with their university parallel peers.

Although Hoyt and Munday (1969) in their study of 85 two-year colleges do corroborate some of these findings, they do point out that academic differences were so great in the institutions that they researched that the overlap in academic potential resulted in a

situation where the least able students in one institution could conceivably be an average student in another institution. They further report that academic ability and grades of students attending junior/community colleges were more diverse than those of students attending four-year institutions.

Astin et al (1967) reporting from data collected in the American Council on Education (ACE) study notes that the mother's educational level has more influence on women's choice of an educational institution than it does on men's choices, even though the educational levels of the mothers were slightly lower than those of the fathers. The SCOPE¹ data indicated both parents offered encouragement about equally, according to Cross (1968). As Medsker and Trent (1965) emphasize, educational and occupational levels of the parents generally influence the home environment, parental attitudes, and educational stimuli, which ultimately are reflected to some degree by their offspring.

Continuing her summary of the SCOPE data, Cross (1968, p. 17) notes that only 26 percent of non-college students, as opposed to 55 percent of students attending junior college, and 66 percent of students attending four-year colleges reported fathers as providing positive encouragement to actually attend an educational institution after high school. Cross also reports that close to one-fifth of the junior college students indicated parental indifference about obtaining further education. These findings are also supported by Mellinger (1962, pp. 168, 169), who conducted a study in Chicago and reported that 96 percent of the freshman community college students came from lower and lower-middle class homes. Powell (1966, p. 4) who conducted a study in Los Angeles reports that over one-half of the community college students came from working class homes, about one-third from white collar families, and just under one-fifth from professional and technical occupation families. Bossone (1965, pp. 279, 280) also notes that the majority of students came from the lower white-collar and blue-collar homes as well.

¹ School to College: Opportunities for Postsecondary Education

As a result of the numerous studies reported upon, it becomes abundantly clear that parents of college students are definitely more interested in having their children further their education and do not hesitate in communicating these opinions to their children.

Monroe (1973, pp. 185, 186) aptly summarizes the lot of the community college student by stating:

Community college students are from the homes of neither the very rich nor the very poor. They tend to come from the lower-middle income homes, definitely much lower than the homes of university students. Typical community college students in large urban centers are the children of third-generation Americans of European background who have become skilled laborers, low-level supervisors, and industrial managers, and who have aspirations that their children will become the first college graduates in their families. One would not expect to find many students from the lowest quarter of the income groups. Students tend to come from the middle groups of families who find it difficult to send their children away to college but want them to join the white-collar and professional ranks. Social mobility and a better occupation than their fathers have are the principal motives for most community college students.

Finances

The whole area of finances is, at best, a very subjective evaluation for both the respondent and the researcher because monetary values are, after all, of relative value to each person. Knoell and Medsker (1965, p. 70) caution that many students have very unrealistic views of college costs, and this fact coupled with ranking financial problems first among reasons given for withdrawing from community colleges, even though lack of grade attainment was rather apparent, tends to distort drastically the financial perspective associated with a college education. As Cross (1968, p. 24) notes, "It is difficult to draw an accurate picture of the role of finances." This is basically true because as she explains, students from the lower socioeconomic homes place a high priority on easily accessible, low-cost community colleges. The students are concerned with upward mobility and see their increased earning power as a primary reason for increased

education. She maintains that studies in the area of financing showed that only from one to ten percent of students could not attend a college, or viewed the financing of a community college education as a major concern. Elaborating further, Cross states that 46 percent of the students indicated that the low cost of community colleges was a major consideration in their decision to attend. This same trend appears to be consistent during the first half of the 1970's, for Astin et al (1975) reports that about 40 percent of the two-year college students indicated no financial concern, while only 14 percent expressed major concern.

Two-year college students rely more heavily on their own financial resources than do four-year college students. The majority of the finances are obtained from summer employment, personal savings, and part-time employment while attending college. Tillery (1963), Knoell and Medsker (1964), and Medsker and Trent (1965) all reported that over half of all two-year college students worked at least part-time while attending college. Astin et al (1967) and Astin et al (1975) note that 63 to 66 percent of these two-year students indicated that they would rely on employment during college as the major source of financial support during their first year.

Raines (1967, p. 14) reports from the ACE study that incoming two-year college students come from families whose annual income averages \$4,000 to \$6,000 lower than either of the families whose students attend four-year colleges or universities. Meanwhile, Astin et al (1975) indicates that just under one-quarter of two-year college students reported no parental or family support, while just under one-half indicated support up to \$500. About three-quarters of these students indicated that they did not receive any scholarships grant money, or loans to attend college, while less than 10 percent received up to \$2,000, with a very few reporting financial assistance to \$4,000. Almost one-half of the students indicated that some financial support would be derived from personal savings.

In 1974, just over 30 percent of these students estimated their parental income at under \$10,000, while just under one-half estimated

their parental income as between \$10,000 and \$20,000. Only one-fifth reported that their family income exceeded \$20,000. As Monroe (1973, p. 194) explains, "community college students are neither the very rich nor the very poor." He indicates that in 1960-61, for example, that if family incomes are ranked by quartiles 54.6 percent of the two-year college students came from the second and third quartiles and 16.6 percent from the lowest quartile. On the other hand, 52.8 percent of the four-year college students came from the second and third quartiles and only 11.3 percent from the lowest quartile.

Cross (1968, p. 21) agrees with Bossone (1965) when she explains that in communities where community colleges exist, 53 percent of the academically able students from lower socioeconomic levels attended colleges, as opposed to only 22 percent of the same group residing in communities without college facilities. Therefore, it appears that although cost is an important factor in the decision of going or not going to college, other factors also play a vital role in that decision.

Perhaps Cross (1968, p. 49), in discussing the financial aspects of college attendance and persistence, best summarizes this problem area when she states: "While students attending junior colleges say that cost and location are prime factors in their selection of a college, few confess to major financial worries, and the cost factor alone does not seem to prevent students from seeking higher education."

Personality Characteristics

As Monroe (1973, p. 191) succinctly states: "Literature on the personality of community college students is scarce." He further elaborates that although numerous studies have been conducted on community college students, the vast majority of them concentrate almost exclusively on such statistical data as academic ability, age range, enrollments, sex ratios, and success of transfer to four-year institutions. "Few studies yield any insights on the nature of the student's attitudes, values, and personality" (page 181). However, along with Richards and Braskamps (1969), he does concede that "Community college students, by and large, are fairly typical of American youth who come from the middle and lower classes of society." Therefore, as in the

general population, the expectation of a diverse range of attitudes is to be expected.

In a study conducted by Astin et al (1967) two-year college students as a group exhibited slightly higher than average scores compared with four-year college students as a group in such areas as athletic and artistic ability, defensiveness, and mechanical ability, but on the other hand, expressed less self-confidence in traits such as mathematical ability, writing ability, academic ability, leadership, drive to achieve, and intellectual self-confidence. Taken at face value these figures can be somewhat misleading, for 37 percent of the two-year college students did rate themselves above average in academic ability. As Cross (1968, p. 27) explains, it is the group as a whole that reflects the lower self-confidence in academic ability--undoubtedly reflecting their past academic achievements.

Tillery (1963) in utilizing the Omnibus Personality Inventory obtained the greatest difference between the two-year and four-year students on the scales for measuring autonomy and authoritarianism. As Cross (1968, p. 32) notes, the Center for Research and Development in Higher Education also obtained a close relationship between intellectual and academic interests of students when utilizing the OPI. Medsker (1960) generally agrees with the findings already cited when he concludes that, generally speaking, two-year college students tend to be more conventional and less tolerant, less independent, and less attracted to theoretical conceptualizations than their four-year colleagues. Abbas (1968) agrees on the conformity findings, but suggests that the reason might be because the majority of the two-year college students live at home.

Continuing her explanation, Cross points out that although the ACE questionnaire asked students to indicate their above-average abilities, while the SCOPE questionnaire asked students to identify their best abilities, the results were fairly consistent with each other. The results of these two studies do reinforce the hypothesis that two-year college students tend to perceive their strengths in nonacademic areas while the four-year college students feel more confident in the

traditional academic and verbal areas.

In attempting to describe the freshman college student, Monroe (1973, p. 191) notes that all adolescents must resolve four basic social and personal problems: marriage, occupation, independence, and value systems--philosophic, ethical, and religious. He further explains that all of these inherent and only partially filled areas of human concern are prominent among the two- and four-year college students. Cross (1968, p. 30) notes that behaviour, as reported by students, reflects upon individual interest. Therefore, when she explains that only 29 percent of students entering junior colleges felt "definitely able" to do average work, as opposed to 57 percent of four-year students, she notes that self-estimates of college ability correlates very well with academic ability (page 25). Elaborating further, on the comparison of two- and four-year college students, Cross (1968, p. 27) relates that only 15 percent of junior college freshmen had been elected as a president of a students organization, while 27 percent of their four-year colleagues held the same position. Roughly the same ratio holds for major parts held in school plays--14 percent for the former, and 23 percent for the latter. She continues her comparison by reporting that four-year college students seem to be more preoccupied with humanitarian concerns (becoming community leaders or joining VISTA) whereas on the other hand, the two-year college students expressed more concern about business and financial matters (especially "success in business" and being "well off financially").

In their responses to the question of student expectation of greatest life satisfaction, Cross (1968, p. 32) indicates that marriage and family relationships scored highest for all groups (47 percent for non-college, 48 percent for two-year and 44 percent for four-year college students), although there was a significant sex difference--57 percent female students as opposed to 33 percent for male students.

Research findings reported by Jaski (1969, p. 9) indicate that student exposure to a community college environment does not materially affect that student's basic attitudes, goals, or values.

In discussing the personality characteristics of college students, Cross (1968, p. 33) noted that junior college students scored below four-year college students in all measures administered by Warren in his study reported in 1966. She concludes that "The junior college students were the most cautious, prudent, and controlled, most apprehensive and rigid in their concerns over grades and academic standing."

Finally, Koos (1970, pp. 343, 344) in his assessment of the two-year and four-year college student also agrees, but does caution that variations occur in both groups. His comments, in summary, are appropos:

. . . in the comparisons of junior college with four-year college students on traits of personality, we note a situation analogous to those found in comparisons on aptitude, social status, and scholarly competence: the measures run appreciably lower for the junior college than for the four-year college populations, and smaller proportions have high scores and larger proportions low scores. At the same time, once again, the proximity of the corresponding measures and the extensive overlapping of the distributions of score values from which they are derived reflect trends of difference rather than distinct populations.

College Attendance

Reasons For College Attendance - Why do students decide to attend a community college rather than a four-year educational institution? According to Knoell and Medsker (1964), Baird (1967), Richards and Braskamp (1969), and Cross (1968), it simply indicates that the two-year college students are more concerned with practical considerations (accessibility to home area and low cost) as compared to the intellectual interests (academic reputation) of their four-year college peers.

Cross (1968, p. 34) citing from the Biographical Inventory data of the Comparative Guidance and Placement Program says that being "inexpensive" and "close to home" both were rated most frequently at 22 percent each, by community college students as their main reason for choosing such an educational institution.

Peterson (1965) in his analysis of the College Student Questionnaire, along with the SCOPE data of 1965, and the ACT profile results of 1966, also basically reported similar conclusions as well. Both Goldberg and

Dailey (1963) and Cooley and Becker (1966) report that generally speaking, two-year college students have more practical orientations to college and to life than do their more intellectually exposed counterparts in the four-year college--as a matter of fact, the community college students tend to resemble noncollege youths in terms of abilities. Cohen (1969, p. 75) also found that both academic talents and college grades earned by students within community colleges was much more diverse than those same two variables within four-year institutions.

In a recent study reported by Leslie, Martorana, and Fife (1975, p. 19), however, they conclude that "community colleges are generally perceived to be relatively low-status institutions." They explain that although variations are reported by students attending community colleges, the "degree of esteem" has repeatedly been reported at a lower ranking by these students. In other words, attendance at these colleges is not the first choice of most students. Therefore, although these researchers do admit that this data may not be the best indicator of student feeling, they do maintain, nevertheless, that this is an indirect measure of student feeling and is a valid assessment of student opinion.

Although there is conflicting evidence on whether or not a consensus can be reached as to why college students choose these particular institutions, Cohen et al (1969, pp. 87, 88) maintain that in general, community college students do not consider themselves as well prepared for their college experience as do their peers in four-year institutions. Cohen further explains that this feeling is expressed by two-year college students who report less confidence in academic aspects of their high school training--more frequently critical of both their high school courses and their teachers. In non-academic areas, however--cooking, sewing, sports, and manual skills in general--these same students express more confidence in their abilities than do the students in other institutions of higher education.

Another interesting study conducted by Fenske (1969), which also considers academic performance, indicates that the presence in terms of geographic location of a vocational/technical institution had a greater influence on the plans of students for choosing that particular

institution than did the fact that as seniors in high school they scored in the lowest 30 percent in scholastic ability. He also reports that in general, vocational/technical students are likely to be "underachievers; with a potential higher aptitude than their achievement in high school would indicate. Therefore, he concludes that these students attend two-year institutions mainly because of their close proximity to a community vocational/technical institution. Notwithstanding the aforementioned reasons of "accessibility" and "low cost" for being a major determinant in choosing a post-secondary institution, Cross (1968, pp. 35, 36) explains that the vocational orientation of community colleges is also a vital factor in student's choice of institutions. She indicates that almost three-quarters of the two-year college students agreed with the statement that further education would "prepare for a job that pays well"--one-quarter strongly agreeing.

Expanding upon the views of vocationally-oriented students Astin (1968, p. 123) maintains that students at technological institutions (two-year institutions primarily specializing in occupational skills) report their classes as being "exceptionally competitive academically, as having a very inflexible curriculum, and as placing very little emphasis on social activities." He further elaborates by stating that the "peer environment" in these institutions involves considerable competitiveness and independence; although on the other hand, the areas of musical and artistic activity, leisure time activities, and interpersonal relationships in general are scored rather low by students themselves.

It is interesting to note as Cross (1968, pp. 36, 37) points out, that with the exception of the Knoell and Medsker study in 1964, " ... one is impressed by the almost total lack of any systematic investigation of their (community college students) reactions to their college experience."

Knoell and Medsker (1964) reported that 71 percent of the students who began their post-secondary education in community colleges and later transferred to four-year colleges and universities indicated they would make that same decision, to initially attend a two-year institution,

again. They also note that students transferring to private universities were much more positive about their community/junior college experience than were students from similar institutions who later transferred to four-year technical institutions. Perhaps the difference in perception by the students is explained by studies conducted by Astin and Holland (1961) and Astin (1965) when they indicate that of all the numerous curricular categories offered to students, the technological institutions offer the most unique environments and are composed of the most diversified student bodies.

Reaction To College Attendance - Although Milton and Shoben (1968, p. 121) indicate that going to college does influence the student's beliefs and attitudes, they do note that research does suggest that this change is greatest during the first two years of the college experience, rather than the last two years. Katz (1968, p. 64), commenting on the subject of college influence on students, notes that only about one-quarter of the seniors showed a significant change in attitude during their college years, and that the most important attribute for change was in the area of peer influence, friendships and student self-development. The opposite view, however, is expressed by Dressel and Lehman (1968, pp. 118, 119), who claim that it was not until the junior and senior years that the college environment had a "marked impact upon student attitudes and values." They note that the change basically occurred in the areas of critical thinking, becoming more tolerant and liberal, and less authoritarian.

Astin and Panos (1969, p. 150) do admit that any change--which they describe at best as minimal--stems largely from the student's peer associations, with only one-quarter of students surveyed attributing their change in values from the influence of the physical environment and the classroom setting. Meanwhile, Trent and Medsker (1968, pp. 195, 196) suggest that students exhibiting the largest degree of change originally tended to be the most idealistic, theoretical, and liberal in their views. The majority of vocationally-oriented students who, as noted earlier, exhibited practical and materialistic traits, were less inclined to be affected by the influence of change.

The fact that a majority of two-year college students are very occupationally oriented undoubtedly explains a great deal about the research findings. For as Jacob (1957, pp. 1-3) suggests, that although there is some influence and behavior modification on the values held by students, up to four-fifths of all these college students are from homes which represent conventional middle-class mores, and for the most part, the students continue to reflect their previous family backgrounds. Therefore, the college impact on student values and opinions becomes clearer, for as Monroe (1973, p. 200) explains "The college need not be disappointed if the college experience has little impact upon the student's basic attitudes, goals, and values," for as he further notes, citing Jaski (1969, p. 9), that "Overall, no significant changes in values occurred at any school. Even the hierarchy of these basic interests remained static; identically the same rank order of the value scales existed at the beginning and at the end of the year for freshmen and sophomores."

Choice of Major -

The nature of parental example and encouragement as perceived by the student has a direct relationship to his motivation for higher education; parental encouragement seems to influence who goes to college, what college he enters, and how long he remains in the academic environment. (Cross 1968, p. 48).

This statement aptly embodies the many and varied aspects of the home influence which plays a vital role in the interests and educational aspirations of the student. The home influence, which is composed of a combination of bi-cultural and social values reflected by the parents, is combined with the many interrelated socioeconomic components such as parental occupation, education, financial income, and community recognition, to provide the fledgling offspring the appropriate climate in which to make the eventual choice of a college major.

A number of research studies, including Cohen et al (1971, p. 12) support the thesis that education program choices are influenced by parents--the choice of whether a student attends college, what type of institution he chooses, and what program of study he pursues.

Down through the years educational leaders in the community college movement have vigorously debated the merits of a two-year post-secondary education. As Monroe (1973, p. 74) notes, prior to 1950 the vast majority of community colleges "imitated the liberal-arts and professional programs" with only a very limited occupational program offering available. Even today he claims that the majority of community colleges offer only a limited number of occupational programs (page 84).

Analyzing the available programs specifically, Reynolds (1969, p. 22) in his description of the two-year college curriculum identifies two main areas: general education and specialized education. He feels that general education covers the broad area of the traditional academic emphasis while specialized education may be further subdivided into two areas of emphasis--preparatory and vocational. According to Reynolds, Business and Secretarial programs are occupational in nature and are classified as vocational programs. Speaking specifically about the emergence of junior or community colleges in Canada, Katz (1974, p. 79) explains that by and large these two-year institutions have also developed in much the same program areas as their counterparts in the United States--academic, technical, and continuing education, which is basically designed for adults. His explanation as to why students are attending these institutions in greater numbers is that many students feel the university is beyond them, either because of lack of finances, academic ability, or because of a preference to live closer to home.

Scully (1974), in his assessment of the wishes of the two-year college students, notes that an increasing number of students are turning toward the practical-oriented occupational training and away from the theory-oriented academic subjects, which so often have been labelled abstract and irrelevant. Crandall (1975, p. 59) agrees with this assessment, for she maintains that down through the years the two-year colleges have continually been increasing the number of occupational programs to the traditional curricula with ever-increasing frequency. Menefee (1974) also supports this contention because he claims the student body enrollment in occupational programs is as high as 70 percent.

In her comparison of a community college and a technical institute, Kievit (1971, p. 13) says that variations between the student attending the community college and technical institutes were insufficient to attract students with significantly different expectations or personality needs. Grout (1969) also reported finding no significant differences among students in business, health, technical programs, and agriculture, or between transfer and terminal students in a study conducted at Illinois Central College. He did, however, find a high level of significance between day students and evening students. The former showed less confidence and stability, and a greater concern with self-identity in relation to the present and the future. In addition, he also noted that in comparison, they tended to be more dogmatic, less effective in critical thinking, and less creative than night students.

Cross, (1970, p. 3), however, in describing the characteristics of the occupationally oriented students, which were obtained from responses tabulated from questionnaires, says that occupationally oriented students "know what they want and are pursuing an obvious pathway to their goal." She further notes that with the exception of soliciting help in obtaining employment, these occupational students did not request counseling, guidance, or tutoring any more than other community college students.

As for actual choice of program major, Knoell and Medsker (1964) indicated that 22 percent of the two-year college males exhibited interest in business and 17 percent in engineering, while 25 percent of the females indicated teaching as a first choice. Reynolds (1969, pp. 64, 65) says that the broad area of business is chosen most often in the applied fields in two-year colleges. He then identifies about four dozen semi-professional fields according to occupational classifications. In his analysis of the "secretarial and clerical" area Reynolds identified 15 programs, noting that the amount of specialized education ranged from a low of 55.9 percent in the Executive Secretarial programs to a high of 85.7 percent in the Legal Secretarial program--the median was 71.8 percent. Although the median number of credit hours required to complete the typical business program was 66, the range varied from a low of 60 hours in General Merchandising to a high of 77 hours for Secretarial programs.

Haven (1967, p. 22) summarized the two-year Business Majors in the college programs in the following manner. About half the students were nineteen years of age or older, with 85 percent enrolled immediately after high school graduation. Of those students enrolled in the business program, 26 percent ranked in the top one-quarter of their high school classes. These college students represented 44 percent of the females and only 21 percent of the males from that top one-quarter in high school. Although many business majors seemed somewhat dissatisfied with their college performance, and felt that they could do better, the majority were critical of their high school preparation for college. As a group the business majors spent fewer hours studying and more hours in outside paid employment than any other major group¹, even though only 49 percent gave financial reasons as a motivating factor in their choice of program. More students used the business major to discover their work interest than any other group. Although 26 percent planned to continue their studies and do graduate work, at least one-half of the students still were undecided as to what their next move would be.

As for those students contemplating continuing studies at the completion of two years, Moore and Hartsell (1974, p. 56) indicated that the availability of a desired university curricula was the top priority for all groups in choosing a transferring institution. Geographic location and expense were rated second and third respectively by the students, with peer and parental pressure rated as of minor significance in their ultimate decision. As the researchers note, "A possible relationship to community college philosophy is reflected" in that choice.

¹ Less than half studied 15 hours or more a week, 28 percent of the students were employed for less than 17 hours and 17 percent worked more than 17 hours per week.

In summary, perhaps Cross (1968, p. 38) best puts this topic in proper perspective when she comments:

Research on vocational choices of junior college students presents a murky picture--partly because of frequent changes in vocational choice and partly because of inconsistency in classifying the great variety of vocations across research studies.

Educational and Occupational Aspirations - "Generally speaking, junior college students have lower educational and occupational aspirations than their peers who begin their education in four-year colleges" (Cross, 1968, p. 41). However, as she notes, about three-quarters of the freshman two-year college students indicate that they intend to obtain at least a bachelor's degree (page 42). Nonetheless, such studies as Davis (1964), Trent and Ruyle (1965), and Panos and Astin (1967) have indicated that both junior and senior college students have unrealistically high educational aspirations as freshmen. As Cross points out, there is a very close correlation between the degree of aspirations of the parents and that of their students. This applies to all three levels of the study--non-college, two-year, and four-year college--and is reflected by the fact that "educational aspirations of young people are influenced at an early age" (page 42).

To further substantiate this thesis, she states that nearly

... 90 percent of the four-year college group in the SCOPE study had taken the college preparatory course in high school; 62 percent of the junior college entrants had; but only 25 percent of the non-college group had the necessary educational requirements for college work.

A further analysis of the data indicates that about 30 percent of the two-year college students were ineligible for regular four-year college admission. Cohen et al (1971, p. 93) tend to support these conclusions when they state that students seeking vocational training quite often are not "talented students with intellectual and academic orientations." It is interesting to note that Stafford (1976, p. 39) claims, "Community colleges are most often chosen as 'back-up' schools by students who planned to attend other schools or who originally had not planned for higher education."

In discussing the wide range of student ability that exists in community colleges, Fields (1962, p. 78) notes that this is primarily the result of convenient accessibility of the institution, the availability of comprehensive programs, and the relative nonselective admission policies of these institutions. It is with this latter point that Knoell (1970, p. 130) seriously questions the wisdom of many educational institutions which require only a minimum amount of general education and other verbal content abilities of students planning to enroll in occupational programs. She feels this policy may lead to other, and perhaps just as serious, problems for these students. Elaborating further on her dissatisfaction with this policy, Cross (1968) explains that if two-year college students had the opportunity to repeat their high school programs, close to one-half would do so. This ratio is very similar to the non-college group and about double the rate for the four-year college group (page 42).

Upon reaching their senior year in high school, 49 percent of the two-year college students had decided what to do after graduation whereas over two-thirds of the four-year college students had already made that same decision. Another 33 percent of the two-year college group decided during their senior year. At their high school graduation date, 13 percent of the two-year college group and 21 percent of the non-college group still were undecided as to their future plans. Cross further explains that of the two-year college students who did enroll, less than one-fifth actually knew what they wanted to do, while three-quarters of these students indicated that they would like some additional information and assistance (page 45). This latter ratio is a little higher than the two-thirds of the non-college and four-year college students wanting assistance in the same area. The expression of personal concern by two-year college students and their desire for information is supported by Snyder and Blocker (1969a, p. 10), who note that these "students are concerned with immediate relationships and interactions with the environment."

In another study Butler (1968), using the College Characteristics Index, reports that although both student groups have generally comparable personalities, two-year college students appear more objective

toward life and favor less self-indulgent experiences than do four-year college students. He also maintains that the two-year college exposure to diversity in terms of faculty, public discussion, and innovation results in less encouragement for developing leadership and self-assurance qualities.

An Illinois Public Community Colleges study conducted in 1975, involving a statewide three-phase follow-up on occupational students, reports that "although there are some slight differences in the original (educational) intent between male and female students, the significant differences occur between the full-time and part-time students" (page 6). For example, 71.5 percent of full-time students reported that their original intent was "preparation for employment in occupational career areas," while only 39.2 percent of the part-time students indicated that this was their original intention. Of the latter group, 35.1 percent indicated their original intent was "improvement of skills and competencies in present job or business", as opposed to only 8.7 percent of full-time students who indicated this same original intent.

As has already been noted earlier, a study reported by Medsker (1960) indicated that in community colleges men outnumber women by about two to one. Rossi (1976, p. 41), however, quoting from the National Center for Education Statistics, comments that the total number of women enrolled in two-year institutions during the years 1972 to 1974 has increased 33 percent while the overall institutional student increase has been only 27 percent during the same period. Monroe (1973, p. 187) notes that along with the traditional community views of the role of females in society, the sex ratio of any given institution probably also includes such things as "the employment opportunities for women and the ethnic and racial patterns of female behavior rather than any inherent aversion to education on the part of the female student."

It is interesting to note, as Monroe points out, that among the black community college students the males are outnumbered by females, "a condition which reflects the matriarchal pattern among lower-class black families" (page 187). Examining this phenomena further, Stafford (1976, p. 39) states that although the college aspirations of black and

white females is very similar, the white males have considerably higher college aspirations than do the black males. However, in considering the minority students at the community college level, Monroe (1973, p. 188) cautions that minority-group students, by and large, represent only a small fraction of the entire college enrollment, even though in certain metropolitan areas they may comprise the entire institutional enrollment.

Looking more closely at the curriculum that is available to students and what affect this has on their educational aspirations, Monroe (1973, p. 59) emphatically states that "the one part of the community college curriculum which has been offered abundantly, enthusiastically, and almost universally is that part which prepares students to enter the senior colleges and universities." The college-parallel or college-preparatory program, which is what the transfer program is also called, was the original program instituted almost exclusively in the majority of community/junior colleges. As Monroe even notes today, the vast majority of community colleges are "still predominantly transfer institutions" (page 84). With the ratio typically holding steady at three to one in favor of transfer programs, the logical conclusion would therefore appear to be that the majority of students do transfer to four-year institutions. Going back to 1952, however, Medsker (1960) found that in that year an average of only one-third of all students entering a public junior college transferred to a four-year college. In addition, he also states that only 35 percent of all entering students graduated from their two-year institution, and only 56 percent of those graduates actually transferred, although two-thirds of the entering students had expressed a desire to transfer when they originally enrolled.

Hills (1965) reports on his review of students who transferred from two-year institutions to four-year institutions in the years from 1928 through 1964 that, on the average, the transfer student suffers academically in the first semester after transferring, but that grades normally tend to improve after the student becomes established at that institution. Although a number of two-year college students who do transfer eventually become honor students after transferring, native

students, on the whole, normally obtain better grades than do the transfer students. These conclusions are also supported by Bird (1956, p. 85), Knoell and Medsker (1964, p. 157), and Falkenberg (1969).

Dennison and Jones (1968), in a three-year study of student at Vancouver City College who later transferred to the University of British Columbia, found that the eventual graduation and attrition rates of the students who transferred basically varied according to the type of university program that they entered. They also note that older students (25 years or more) were more likely to graduate than were younger students, and that community college students transferring after one year displayed better academic performances than did students who transferred after two years.

Falkenberg (1969) also notes that in Alberta two-year college women students on the whole achieved higher grade point averages than their male peers. This trend was evident for both the two-year program and the transfer degree program.

Although Willingham and Findikyan (1969) report that only a few transferees from two-year occupational programs succeed at four-year institutions, Dennison and Jones feel that on the whole, the transfer students compare favorably with the native university student and that a transfer student with at least a 2.0 grade point average and sufficient incentive could be successful at a four-year institution (page 77).

Cohen et al (1971, p. 70) feel that the two-year college transfer program is functioning well and should be continued--if for no other reason than it provides a second chance for many students who would otherwise be denied the opportunity of attending a four-year educational institution. Clark (1960, p. 574) says much the same thing for as he explains the effect of the two-year college alternative provides the students who have not had a particularly bright academic history or opportunity to "find their occupational and academic future being redefined."

The typical student characteristics that are reflected by students who attend community colleges in the first place are also reflected by those students who eventually transfer to four-year colleges. As

Anthony (1964) reports, transfer students as compared with terminal students come from families of higher socioeconomic levels, transfer students have higher academic high school backgrounds, score higher on college tests, are upwardly more mobile, and place a greater emphasis on prestige in selecting a career occupation.

As noted earlier by Monroe, the transfer category has always existed at community colleges. Now, however, Martin (1974, p. 31) has detected a new category known as the "reverse transfer". She explains that this is a student who has already obtained a bachelor's degree and after experiencing considerable difficulty in obtaining employment or experiencing a desire for change in occupational aspirations, now returns to the community college to acquire the occupational skills required for many initial jobs.

In concluding the discussion dealing with occupational aspirations of students, Cross (1968, p. 45) categorically states that "All groups of young people strive for upward mobility to reach a higher occupational level than that of their fathers." She further notes, as do many research studies, that of the one-third of junior college students who come from managerial and professional homes, about two-thirds of them aspire to reach at least these occupational levels. As for the four-year college students, about half of their parents are in these occupational areas now; therefore, the almost 90 percent of students who aspire to achieve this level for themselves is not surprising. Although the majority of the unskilled occupations are represented by the non-college group, only 14 percent of these students aspire to attain this level of occupation for themselves.

With such definitive trends already on the horizon the obvious solution, as Cross succinctly suggests, is to move "students out of transfer majors into terminal programs of vocational, business, or semi-professional training" so that they will be able to realize their occupational goals and aspirations (page 46).

Community College Students -- Attrition

Overview

During the past two decades, not including extensive publications under the auspices of the American Association of Community and Junior Colleges, at least four extensive national studies have been conducted on the perplexing phenomena of the attrition student in community colleges. Reporting findings are such prominent researchers as Iffert (1958), Trent and Medsker (1967), Astin and Panos (1969), and Astin (1972). In addition, a profusion of additional explorative studies, ranging from localized specific research projects to multi-campus comprehensive investigations, has covered almost all aspects of community college student involvement and interaction. For example, Alfred (1972) in his report of attrition among community college students notes that for the past forty years researchers have viewed early withdrawals as a loss of time, energy, and resources. He cites such studies as Sheider (1939), Dressel (1943), MacIntosh (1948) and Astin (1972) to support his contention. In addition, Alfred also reports on other studies during that same period which covered such areas as the attrition rate by type of college, size of the graduating class, and age of the entering student--Dwyer (1939), Coffey (1940), Hilton and Carpenter (1943), Mercer (1943), Dressel (1954), Farnsworth (1955), Iffert (1956), and Astin (1972) are included in these categories.

Going back even further, Alfred (1972, p. 3) notes that a series of studies covering the past forty-five years has considered such problems as attrition in terms of investigating the extent of correlation between "length of persistence" and high school grades, aptitude and achievement test scores, family financial status, illness and injury, motivational factors, and countless other variables. He provides the following brief list of such studies: Strong (1933), Dressel (1943), Weigand (1951), Thompson (1953), Farnsworth et al (1955), Rust and Ryan (1955), Summerskill and Darling (1955), Iffert (1957), Suddarth (1957), Eckland (1964), and Astin (1972). Although not all of the aforementioned research studies are specifically documented in this review, numerous

other research reports dealing with the attrition problem are covered--some in considerable detail.

The following selected quotations represent a few of the conclusions reached by a limited number of distinguished researchers who have reported on their findings of the ever-present dilemma of student attrition in two-year colleges.

Most colleges regard a heavy attrition, or dropout rate, as a serious waste of education resources and personal potential. (Monroe 1973, p. 207).

. . . attrition is realized in the truism that financial resources are relinquished from the income side of an institutional budget as students withdraw from the community college. (Alfred 1972, p. 2).

Whether the phenomenon is called dropout, withdrawal student mortality, attrition, or academic failure, dropping out of college has widespread ramifications, both educational and social. It has generated much concern on the part of educators, psychologists, sociologists, economists, the students themselves, their parents, and the general public. (Cohen et al, 1971, p. 64).

Whether studies of dropouts deal with single schools and thus are considered parochial in nature, or whether they are of nationwide scope and concern many institutions, what we know today differs little from what we knew in the past. In fact, Summerskill's 1962 statement that the percentage of dropout remained the same over forty years is still applicable. (Cohen, Brawer, Lombardi 1971, p. 65).

Administrators pale at the loss of FTE (full time equivalency), counselors wring their hands over the failure of the institution, and board members demand to know why we can't design programs that will retain students. (Hahn 1974, p. 35).

"Dropout," a word typically applied alike to students who fail to complete a semester or who fail to register for the next series of courses in a particular curriculum, is often coupled with the word "problem," to form a term which suggests something that must be "solved". Depending on one's view, a student who drops out has either failed to achieve his potential; (play the game according to the rules) or has been let down by schools which have neglected to provide an "experience appropriate to his needs." In either case, the "problem" exists. (Cohen 1969, p. 130).

Alarmed at the high dropout rate of low income, minority students, community college teachers all over the country are becoming more concerned about how to "motivate" their students. Part of the answer may lie in taking a new approach to the problem: to understand different personality types and to help students change their view of themselves and to achieve successes, which will set expectation for future success rather than failure. (Roueche and Mink 1976, p. 49).

Dropout is considered important in viewing educational systems because the easiest measure of output is the number of students emerging from the system and because we attach particular importance to certification of individuals. (Cohen and Brawer 1970, p. 52).

A more reasonable approach for a community college would be to make courses available to the student, for him to take whatever he wants, and to allow that student, free of any pressure, to drop out at whatever point he feels he is ready to leave. (Hahn 1974, p. 40).

Moore (1974, p. 3) says when trying to define the term "dropout" that

. . . the measurement of 'attrition' rates must take into account the expectations of students when they enter the institution . . . anything else, such as foolhardy efforts to measure attrition by counting the number of degrees earned, is ill-advised and self-defeating.

Lightfield (1974, p. 4), meanwhile, elaborates further: ". . . a number of students and, in fact, an increasing percentage of students, are pursuing what would traditionally be defined as an erratic or irregular pattern of enrollment." Cohen (1969a, p. 49), on the other hand, boldly suggests that "Perhaps 'dropout' is not a negative term. Indeed, the dropout might be exhibiting strengths not possessed by his fellow students." Bromley (1973, p. 9) goes even further when she suggests that the term "dropout" should not be used: ". . . its connotations are negative, misleading and non-standardized"--the term should fall into disuse. Hahn (1974, p. 40), meanwhile, does not go that far but does suggest that

. . . there is no clear evidence that dropping out is necessarily harmful for the student; schools have been operating on the premise that education is everything and those that drop out before completing a high school or post-high school program are doomed to be failures.

Meanwhile, Brawer (1973, p. 2) attempts to put the issue into its proper perspective by suggesting that

The construct--dropout or stop-out--provides a comparatively clear-cut, either/or situation, one that can be readily assessed as an objective dependent variable. However, the ease of assigning a designation and the plethora of material available in the literature do not necessarily imply that the phenomenon is clearly understood.

Alfred (1972, p. 17) poses another thought--perhaps this is the position that should be adopted when dealing with community college students today!

Motivation is not a static concept: interests, needs, and goals shift and evolve rapidly among college students to the extent that a recurring phenomenon in higher education today is the 'informal drop' or termination without withdrawal.

Thus it becomes abundantly clear--authorities do not appear to agree on the effect that early withdrawal from a community college has on the student. Is it a negative or positive move, and should anyone really become too concerned? After all, the attrition phenomena is not a new innovation, and it is not likely to disappear in the near future.

Family Background

The family background of both persister and dropout students influence, as numerous research studies report, to a considerable extent the levels of accomplishment in both two- and four-year college student's educational experiences.

The influence in persistence experienced by two-year college students is directly related to the socioeconomic level of the student's family. Concurring are Astin (1964), Eckland (1964c), Wolford (1964), Sewell and Shah (1967), Wegner (1967), MacMillan (1969), Synder and Blocker (1969a), Turner (1970), and Spady (1971). As Monroe (1973, p. 212) notes, a high percentage of the persisters have fathers who hold

"high-level occupations", and that withdrawal students have a relatively high percentage of fathers with "low-status occupations".

Tinto (1975, p. 99) also maintains in his summary of research that as well as the many documented studies that deal generally with socioeconomic status, which is undoubtedly reflected by the student's social status as well, other specific family attributes definitely contribute to college persistence. He cites studies conducted by Cope (1969), Chase (1970), Jaffe and Adams (1970), Spady (1971), and Fenstemacher (1973) as supportive evidence that persister students have parents who are better educated and according to Eckland (1964c) and Van Alstyne (1973), more affluent. As for finances, Iffert (1958) noted that this factor was cited third in importance for withdrawing, while the Illinois Board of Education (1969, p. 8) indicated that one-fourth of the withdrawal students indicated it was an important factor in their decision to discontinue their studies. Other studies, also noting finances as problems, included Blai (1969), Davis (1970), and MacMillan (1970). Sandford (1967, p. 647) claims that there is a definite relationship between financial status and success in college. Although Astin (1972, p. 37) agrees that students have a better chance at persisting in college if they receive "a major part" of their support from their parents, he also notes, on the other hand, that "parents' income, as such, showed no consistent relationship to persistence in college" (page 38).

According to Trent and Medsker (1968, p. 100) a positive correlation does exist between the amount of parental encouragement, family interest, and parental expectation and the extent of college persistence and academic performance by their offspring. Monroe (1973, p. 212) notes that only one-third of dropout students indicated that their family's influence was an important factor in persisting, while about three-fourths of persister students reported that it was. Even students from low-income families agreed with the above assessment. Weigand (1957), Congdon (1964), Trent and Ruyle (1965), and Hackman and Dysinger (1970) reported results which also supported the above findings. As Tinto (1975, p. 100) says ". . . patterns of intergenerational mobility may be built upon the

passing on of family expectations to their children." Hughes et al (1968, p. 1) also support this contention for they note that apparent familial influence is evident in the attrition process because children of "dropouts" are the most likely to become dropouts themselves.

Eagle (1973, p. 9) also agrees with the importance of the family background and the degree of success that college students will realize, for as she states,

There is growing evidence that non-intellective, non-cognitive, non-scholastic factors such as achievement motivation, and demographic factors such as financial need and home conditions can facilitate considerably the identification of the potential dropout.

Individual Characteristics

An extensive review of the literature indicates that the ability to identify the dropout student from a persister student is at best a difficult task. Aiken (1968, p. 1) in citing studies completed by Goertz (1967), Marks (1967), and Williams (1967) notes that comparison studies were conducted between dropout students and persisters. Aiken further explains (citing Nichols and Stafford, 1966; and Goertz, 1967) that many researchers were not able to identify "particular characteristics which would identify them (dropouts) as being different from other students in college."

Disagreeing with the above claim, other researchers do conclude that there are considerable individual differences between dropouts and persisters, and further, these differences have been documented.

Notwithstanding the many recognized and identifiable external influences and pressures that are exerted upon the student in a two-year educational institution, the fact still remains, however, that the most important single factor related to persistence is the ability of the individual student. As Astin (1972, pp. 24-29) notes, there is a "consistent positive relationship between persistence" and high school grades and the student's level of academic aptitude as measured by college admission tests. He further explains that two to four times as many students who obtain the best grades and test scores persisted in

college, while eighty percent of the students with the lowest test scores and grades considered themselves unsuccessful and consequently withdrew from college. This general conclusion is also supported by Matson (1955), Berg (1965), Lavin (1965), Knoell (1966), Sensor (1967), Wegner (1967), Aiken (1968), Coker (1968), Panos and Astin (1968), Chase (1970), Cohen and Brawer (1970), Davis (1970), Gold (1970), Greive (1970), Jaffe and Adams (1970), Taylor and Hanson (1970), Blanchfield (1971), Lawhorn (1971), Puffer (1971), and Greenburg (1972).

It is interesting to note that Turner (1970) finds that with the dropout student there is an interplay between the student's perceived ability and his actual ability. Chickering (1969, p. 333) commenting along the same vein, also stresses the fact that many times dropout students do not lack motivation, but rather have high motivation, but which unfortunately is not channelled into avenues acceptable to the college environment.

Not all studies, however, agree with the above conclusions. Heath, Lee, and MacDonald (1973, p. 2) for instance, point out that similarities between dropout and persister students are so great that a college could not really justify the claim that the eventual dropouts did not originally belong in that environment. They further claim that for the vast majority of colleges the dropout and persister students could not be differentiated by their high school academic credentials. Eagle (1973, p. 8) also verifies this conclusion for he notes that academically deficient students who enter community colleges through the "open door" policy do not have a higher dropout rate than the fully academically-qualified students.

Jones and Dennison (1972) found in British Columbia that all types of students, including those with high academic ability, also withdrew from the comprehensive community college.

Kievit (1971) reports that scholastic aptitude was not significantly related to withdrawal from college, Stocking (1969) also found no significant differences, and Roueche (1967) found that academic ability scores were not good dropout predictors. Black (1969), on the other hand, maintains that high school GPA's were the best predictors of college

success, followed by the ACT-English test scores.

Although measures of ability, which are obtained from earned high school grades and various standardized tests scores and ratings, do reflect individual attributes and competencies, they are, however, indicators of different phases of individual potential. Astin (1972, p. 36) notes that of these two just described, the former measure of ability (high school grades) represents the best predictor of success because the two-year college educational experiences are analogous to the high school educational experiences in many respects because both educational settings have somewhat similar academic and social climates. In addition, Cross (1968, pp. 13-14) carefully explains that the bulk of students now entering the community colleges are increasingly coming from the second, third, and lowest quartiles of measured academic ability. However, as Summerskill (1962), Hakanson (1967), Trent and Medsker (1968) and Alfred (1972) conclude, native ability as a determinant of persistence is inconclusive--it appears that perceived ability is the best indicator of motivation.

Motivation, or the lack thereof, is a reflection of the student's personality and as such also plays a vital role in determining the degree of success the student will or will not achieve while attending college. As Alfred (1972, p. 5) comments, citing Clark (1964), Corwin (1968), and Trent and Medsker (1968), sociologist and psychologists maintain that "motivation is formed early in life, probably largely in response to parental influence and early school experience." Astin (1972, p. 42) indicates that plans and aspirations of the student (both immediate and future) will be reflected in the accomplishment of the student. Monroe (1973, p. 212) also agrees that many of the studies dealing with the dropout problem indicate that the college environment and the college student are not compatible. Therefore, such personality characteristics as attitudinal and personality differences become the focal point in the decision of continuing or dropping studies. Pervin, Reik, and Dalrymple (1966) claim that if a number of dropout students had attended a different college, there is a good possibility that many of their problems would not have been encountered.

This mismatch between college experiences and student expectancies are reflected in such areas as the emphasis in college curriculum, academic standards, and the social environment. Various personal background differences including religion, ethnic origin, and socioeconomic status of the student result in ultimate incompatibility and withdrawal. This thesis is also supported by Summerskill (writing in Sanford, 1967), pages 418-440) and by Katz et al (1968, pp. 229-238). Cohen (1969, p. 93) suggests that often the withdrawal student leaves because he cannot ". . . cope with the mechanics of education." He further elaborates by stating that the student's "so-called learning ability is likely to be related to the knack of finding one's way through a procedural labyrinth. The means of education do more than effect the ends, they become ends."

Other studies dealing with this topic indicate that many other reasons exist for students to dropout. For example, Jones (1955), Lavin (1965), and Trent and Medsker (1968) found that the college dropouts lacked flexibility, open-mindedness, and adaptability to situations which they encountered in the college setting. Vaughan (1968) found dropouts to be more impulsive, less able to benefit from their past experiences, and not capable of developing an emotional commitment to education.

Although Trent and Medsker (1968) did not find that conformity on the part of the student was an advantage to persistence or success in college, Monroe (1973, p. 213) says that social conformists are more likely to remain in college than are the nonconformists. Rose and Elton (1966) note that dropouts display greater maladjustment tendencies than do persisters. The dropouts also tend to be more illogical, irrational, and uncritical in their approach to problem solving. They dislike reflective and abstract thought as evidenced by their lack of interest in literature, art, and philosophy. Heath et al (1973, p. 27) also suggest that the dropout students are "more aloof, self-centered, impulsive, and assertive than the persister."

Morgenstein and Strongin (1970, p. 49) note that there was a higher proportion of hours worked while attending college by students who eventually became dropouts. Cohen, Brawer, and Connor (1969, p. 4) also confirm similar results when they report that there was a significant

difference between the dropout students who tended to be employed outside the college more frequently than did the persister students. In addition, they also indicate that dropout students had a tendency to be enrolled for fewer than 12 units (considered to be a full class load), while persisters normally carried 12 or more units. They also indicate that although the dropout students may be less committed to their academic studies than persister students, the dropouts actually may be more realistic (page 6). Cohen et al also report that dropout students had attended more schools prior to high school than did the persister students and the mothers of these dropout students had, in addition, received less education than the mothers of persister students. Stocking (1969), however, reports that 82 percent of the mothers of dropout students and 75 percent of the mothers of persister students had actually completed high school. Whereas 80 percent of the persisters indicated family support to attend college, only 56 percent of dropouts reported that same support. In addition, 17 percent of withdrawal students indicated pressure to attend, even though they did not wish to do so.

The sex of the individual appears to have some bearing on the degree of college persistence. Spady (1970), Cope (1971), and Astin (1972) all report that a higher proportion of men eventually finish college and obtain their degree, but as Lembesis (1965), Robinson (1967), Spady (1971), and Mehra (1973) note, a greater proportion of the women voluntarily withdraw, as opposed to men who have a higher rate of academic dismissal. Alfred (1972, p. 19), on the other hand, states that men have a higher withdrawal rate than women. Gold (1970) also supports this position and agrees with the findings of the NORCAL study (Kester, 1971) when he reports that female student persistence compared with males is clearly higher at Los Angeles City College. He further notes that although the persistence rates appear to be slightly higher today than a decade ago, there is less concern expressed about getting the associate degree or the length of time to obtain it (page 25). Alfred (1972, p. 12) citing Eells (1956), Matson (1965), and Ellish (1969) explains that researchers have supported the hypothesis that sex

is a causative factor in attrition--the rationale being that women have lower attrition rates because they are more likely to "develop a sense of belonging and of identity with the college environment."

Tinto (1975, p. 105) indicates that although both Coker (1968) and Spady (1971) report that more males drop out of college because of academic dismissal, particularly in the first year, it appears that grade performance seems to be more important to male students than to female students.

Cohen and Brawer (1970, pp. 16-17) note that of the college persisters nearly 70 percent reported, while seniors in high school, that they received positive parental influence to attend college as opposed to less than half of the withdrawal students. Slightly less than 10 percent of the non-college attenders reported such similar family interest. Alfred (1972, p. 5) also reports that family expectations and influence, along with previous school experience are definite factors in college persistence.

In a study conducted by Rice and Scofield (1969) over a five-year period on Yakima Valley College students in Washington, the educational level of both the father and mother were found to be of borderline significance. However, sex, high school GPA, declared major, proximity to YVC, and father's occupation provided significant differences between dropout and persister students.

Although Aiken (1968, p. 9) claims that a comparison of demographic characteristics of withdrawees and persisters does not produce sufficient significant differences to identify one group from the other, Heath et al (1973, p. 27) citing Astin (1968), maintain that several identifiable differences are prevalent. They indicate that of the non-intellective factors, dropout students apply for fewer scholarships, initially plan to take less training, and more often come from lower socioeconomic backgrounds.

In conclusion, Trent and Medsker (1968, p. 154) offer this explanation.

If persistence in college is related to personality development, then it may be argued that the longer the exposure to college the more change in attitudes and values is fostered or at least facilitated by the college. If change takes place early, then it may be argued that the eventual persisters are from the beginning more open to change than the eventual withdrawals.

Institutional Characteristics

"Since dropout is the outcome of a multidimensional process involving the interaction between the individual and the institution, it is not surprising that the characteristics of the institution, even at the aggregate level, have also been shown to relate to differential rates of dropout." (Tinto 1975, p. 111). He further explains that the characteristics of the institution--the combination of its members, resources, facilities, and structural arrangements--provide the parameters in which the individual integration of the various "college presses" of academic and social climates must be resolved. As Alfred (1972, p. 12) suggests, many times it is the failure of the students to relate their personality with that of the institutional environment and thus feelings of dissatisfaction and irrelevance to the educational goals of both the student and institution soon develop. Cohen and Brawer (1970, p. 19) also feel that academic attrition is "multifacted"--an interaction of the "college milieu" consisting of peers, faculty, and administrative forces intertwined with the general campus environment.

Alfred (1972, p. 5) also agrees with this assessment, but further elaborates by stating that there are two types of factors which play a vital role in the attrition process. One is the self-related factors which have already been discussed in some detail and the other is college related factors, which he defines as "those influences which bear on the student after he enters the college community." He does concede that although the latter are more difficult to evaluate, they do consist of "a composite of relationships between the self and interpersonal relationship groups, faculty, administrators, curriculum, and

institutional norms, in which expectations are tightly interwoven."

Mehra (1973, p. 18), too, also notes that investigators have consistently covered the biographical, academic, social, and psychological characteristics of persister and dropout students while unfortunately ignoring the effect of the various institutional characteristics.

Heath, Lee, and MacDonald (1973, p. 2) in their explanation of the research conducted by Cope, also note that a "relationship between dropping out and the 'pressures' of the college environment" does exist. For an example, they suggest that students who are mainly interested in the social activities of a college would encounter frustration at a campus that stressed academic and intellectual values, while at the same time a scholarly student would be equally frustrated if campus emphasis was primarily devoted to social and athletic activities. Kievet (1970), on the other hand, in her comparison of 791 community college and technical institute freshmen states that no significant differences were found for the college environments, for persister and withdrawal students, and for scholastic aptitude. Blai (1969) reported that at Harcum Junior College one-quarter of the attrition students stated that the institutional calibre was below their expectations.

Back in 1958, Iffert reported that "general dissatisfaction" was listed as the major reason for leaving the campus, while Panos and Astin (1967) noted the same reason for four-year college students as well. Turner (1970) lists two college-related factors--an unfavorable introduction to the campus, and the student's lack of proper adjustment to faculty, curriculum, and student mores--as mainly being responsible for early student withdrawal.

As might be expected, Astin (1972) reports that private institutions of higher learning have a higher retention rate of students than do public colleges--probably due mainly to the more selective admission procedures of the private colleges. Blai (1971) reports dropout rates of 29 percent for church-related colleges as opposed to 24 percent for private, independent colleges. In another study, Blai (1972, p. 9) notes that the co-ed private, church-related schools reported retention rates of only 60 percent--the lowest for 18 institutions surveyed. Cohen and Brawer

(1970, p. 52) point out that the dropout dilemma is basically the result of the open door policy; however, screening potential community college students would result in a number of students being denied the opportunity of further education. Perhaps, as Clark (1960) explains, the "screening" or "cooling-out" process may well be one of the valid functions of the two-year colleges.

Although the size of the institution does seem to have a bearing on the attrition rates, no clear and precise trend emerges. Kamens (1971) reports that larger institutions have lower dropout rates, while Blai (1972), defining smaller enrollment schools of up to 750 students, reports they have lower attrition rates. Blai (1971) further states that intermediate and larger enrollment schools have attrition rates of about 30 percent while the smaller enrollment schools average about 20 percent. Rock, Centra, and Linn (1970) also agree with Blai when their study focused on achievement of students rather than actual student dropouts. The logical explanation for Kamen's findings according to Tinto (1975, p. 116) hinges upon the fact that "the larger institution, normally more heterogeneous in student composition, may enhance persistence through its ability to provide for a wider variety of student subcultures, and therefore through its effect upon social integration into the institution.

On the other hand, however, whatever facilities and program offerings that the smaller schools cannot provide for their student populations is somewhat successfully counterbalanced by the smaller class sizes and more personal and individualized attention that the student receives. Although the degree of influence that a college environment plays in the developmental process of an individual student is not clearly defined, as Jacob (1957) explains, "Its direct influence is subtle and presently unknown."

Blai (1972, p. 12), reporting on a 1965 study conducted by Dr. Edward A. Levenson, states that the "typical" dropout was found to be generally above average in intelligence and creativity, and although this student is bright, he is "mixed up" and a social "loner." Therefore, when this type of personality encounters what to him is "an alien campus setting, the potential dropout becomes an actual dropout."

Withdrawal

Rates - Attrition rates from community colleges range from a low of 15 percent to over 50 percent, with at least half of this loss occurring in the freshman year (Monroe 1973, p. 207). As Blai (1972, p. 1) notes, "Student attrition rates are not sterile statistics; they reflect extinguished hopes of young people deprived of the opportunities and advantages of higher education." To support his contention, he maintains that only 38 percent of two-year college students actually earn their associate degrees (page 11).

Knoell (1966, p. 70) expresses perplexity at the high dropout rates at community colleges during the first year and further notes that only a small percentage of transfer students actually enroll in other institutions.

In 1957, a HEW publication¹ reported that the attrition rate in colleges had remained rather static for the past 40 years. Summerskill (1962) notes that the attrition rate which averaged about 50 percent actually ranged from 12 percent to 82 percent. Berg (1965) reported that from 17 to 40 percent of students continue through to the fourth year. Thornton (1965, p. 155) stated that a 50 percent loss in sophomore enrollments occurred during the years 1963 to 1965. Grieve (1970) stated that 20 percent of the entering class did not return for the second year, while Blai (1971) indicated that from all respondents in his study, an average of 28 percent withdrew from the first to the second year.

Lawhorn (1971, p. 1) cites departmental attrition rates of 46 to 48 percent for the year 1966 to 1968, and a total college withdrawal rate of 28 and 25 percent during the same period of time. Of the 3,246 students that Alfred (1972, p. 17) studied, 36 percent of that student population did not return for the following spring semester. He further notes that only 56 percent, however, actually completed formal withdrawal procedures before the conclusion of that first semester.

¹ Retention and Withdrawal of College Students, Bulletin Number One, United States Department of Health, Education and Welfare, Washington, D.C. (Government Printing Office), 1957.

Bromley (1973, p. 7), in a follow-up study in Gainesville, Florida, found that of the 1965 sample she studied, only 40 percent had actually graduated.

Astin (1975, p. 1) reporting on a four-year follow-up study of over 100,000 student which concluded in 1972, makes the following observations. "Dropping out of college is a little like the weather: something everyone talks about but no one does anything about." He further explains that the actual dropout rate for public two-year colleges ranges from 56 percent for females to 59 percent for males (p. 113). Western states, he notes, tend to have a higher dropout rate than expected, while institutions with less than 500 students also have dropout rates higher than expected (p. 127).

Similar conclusions are reported by Flannery et al (1973, p. 2) when they indicated that although about 70 percent of the entering freshmen in the fall of 1969 indicated that they intended to graduate from the transfer program, in reality only 7.7 percent actually did graduate by the end of the Winter term, 1971. By the completion of the Winter term, 1973, four years into the study, only 31.86 percent of this population in fact had graduated. Monroe (1973, p. 208) citing from an Illinois study of freshmen students in 1960, notes that only 20.6 percent graduated in the normal two years, while over a seven-year period the figure rose to only 30.2 percent. He further explains that a return rate of 50 percent for the second year is high--the normal average for many of the larger community colleges being at about 30 percent.

Reasons -

In dealing with the effects of individual and institutional characteristics upon individual integration into the academic and social systems of the college, it is, as noted, important to distinguish between the varying types of dropout behaviors, especially between academic dismissal and voluntary withdrawal. (Tinto, 1975, p. 116).

He elaborates by saying that while academic dismissal normally is linked with grade performance, or lack of intellectual and social development, voluntary withdrawal, on the other hand, much more frequently "appears to relate to the lack of congruency between the individual and both the

intellectual climate of the institution and the social system composed of his peers" (page 117). He further claims that voluntary withdrawal students normally demonstrate higher intellectual development and higher grade achievement than do the average persisting students.

The Illinois Board of Higher Education (1969) reports that six percent of its freshman community college students were dismissed and another 24 percent voluntarily withdrew--a dismissal rate of one-quarter the voluntary withdrawees. Utilizing somewhat different terminology but still maintaining an ambivalent approach to attrition is Alfred (1972, p. 4), who maintains that although his classification of two basic types of attrition is somewhat of an oversimplification, he nevertheless does identify "self-related factors" and "college related factors" as representing the dichotomous attrition student. (The latter has already been dealt with under the topic of Institutional Characteristics). He explains that "self-related factors" in attrition are comprised of individual and group variables such as actual and perceived student ability, socio-economic background, and motivation toward college--all interdependent factors related in what is vicariously known as a 'variable complex'" (page 4).

Continuing his explanation, Alfred, citing the following studies: Lynch (1959), Summerskill (1962), Hilleary (1963), Matson (1965), and Astin (1972), notes that attrition patterns differ among students according to selected individual characteristics. For example, he explains that the place and type of residence, enrollment status, and sex of the individual represent identifiable and salient attrition characteristics.

In his summary of the attrition problem, Mayhew (1968, p. 150) agrees with other researchers who suggest that a major contributing factor to the dropout phenomenon may well be attributed directly to the inability of the student to delay immediate gratification. In another study covering the same topic, however, of the 13 possible responses that respondents were asked to rate as to why they discontinued their enrollment at Harrisburg Area Community College, Snyder and Blocker (1969, p. 11) report that just over 28 percent indicated what they described as positive reasons (such as objectives being achieved), 23 percent indicated

negative reasons (encountering insurmountable barriers to continuance), and about 48 percent indicated neutral reasons (volunteering or were drafted for armed forces, 15 percent; employment, 12 percent; and marriage, 7 percent) for discontinuing their education.

Blai (1972, p. 7), quoting Astin (1972), explains that two-year colleges probably have a higher rate of attrition because students entering these institutions have a lower level of motivation and on the whole a poorer academic preparation than do entering four-year college students. In her study conducted in Gainesville, Florida, Bromley (1973, p. 7) reports that students listed financial problems, 25 percent; employment, 16 percent; personal, 14 percent; and other, 15 percent as reasons for not re-enrolling to continue their community college education. She further explains that of those students who did not continue their studies, 60 percent were working full-time and only 9 percent transferred to another college, although 79 percent indicated they did plan to resume their studies at some future date. This figure is higher than that reported eight years earlier by Thornton (1965, pp. 155-156) who predicted that about half of the dropouts would return and eventually obtain a degree.

Hahn (1974, p. 39) carries the attrition analysis one step further when he claims that "Students 'drop in' as well as dropout; more significantly, many seem to 'drop back,' time after time." Ford (1966, p. 83) commenting in a similar vein says that when researchers study attrition, they should consider "the possibilities of both loss and benefit." For as Hahn (1974) maintains, researchers have not presented clear evidence that non-return to college is necessarily harmful for the student nor tragic in his or her career pursuits. As a matter of fact, Gell and Bleil (1973, p. 60) suggest "early placement" would be a much more appropriate term than dropout when referring to uncertificated college students who leave early to take full-time employment. Pervin et al (1966) also agree, for they explain that even when students make the decision by themselves to withdraw from college rather than having that decision mandated by the institution, the step is not taken lightly.

Conceding the fact that although the dropout student is not a dead loss to the college and society because presumably he has gained something from his college experience, Coombs (1968, p. 65) still maintains, however, that "the important point is that societies and educational systems themselves make a sharp distinction between finished and unfinished products." Cohen (1969a, p. 44), however, notwithstanding the above argument still maintains that "a single class drop may not relate significantly to an actual drop from college, but it is probable that successes or failures have cumulative and far-reaching effects." Perhaps Knoell (1966, p. 79) most concisely summarizes the arguments when she states: "Neither our statistics nor our insights into the phenomenon of the junior college dropout are now adequate to the task of assessing this loss of talent."

A somewhat similar study as that conducted by Bromley, only completed a few years earlier, and reported by Greive (1970, p. 4) found that 20 percent of the 1,950 students at Cuyahoga Community College in Cleveland, Ohio, did not re-enroll for the spring 1969 quarter. Of the 56 percent who responded to a follow-up attrition survey, "military service", "full-time employment", and "transferred to another college" were most commonly listed as reason for not continuing. In addition, Grieve indicated that 83 percent of the non-transferring students who left college had earned less than a 2.0 GPA; while 91 percent of the transferring students had earned above a 2.0 GPA.

Gell (1974, pp.2-4) indicated that three-fifths of the 15 percent of students who did complete their first year and were eligible to begin their second year, chose to accept employment rather than continue with their second-year studies. In addition, 20 percent of these non-returners said they were "satisfied" with their college program, while 46 percent felt that their college training had not prepared them at all or only to a minor degree.

Interesting results are reported in a study conducted by McMurry (1974, p. 14), who found that a significant difference for the reasons of attrition existed between the athletic and non-athletic student. He reports that athletic students were more prone to "transfer to senior

institutions" from the two-year colleges, while the non-athletic students more frequently withdrew because of "personal problems."

Alfred (1972, p. 10) citing studies conducted by Lynch (1959), Hilleary (1963), Matson (1965), and Hughes (1967), points out that part-time student attrition is very high because in most cases the major commitment by the student is to his employment. He further explains that community college enrollment on a part-time basis, for most students, is more for social than academic reasons.

Therefore, according to the research analysis, whatever reason a student may have for withdrawing, the results may have both positive and/or negative benefits for both the student and the institution. On a concluding note, Cohen (1969a, p. 63) poses a searching question:

If our basic thrust in America today is to educate all who desire education through the fourteenth year, is it then reasonable to expect that attrition can be lowered--both in view of the open-door policy of the junior colleges and of the great diversity in certain dimensions of students entering the schools?

Potpourri of Research Studies - The following summaries, presented chronologically by year, represent a sample of the research that has been conducted in the area of community college attrition and has not been reported earlier in this review in any detail.

Matson (1955, p. 1787) in a study conducted in Concord, California, identified five out of twelve factors which indicated statistical significance between persisters and withdrawal students. They are: age (greater number of older students withdrew), high school graduation (greater number of non-high school graduates withdrew), high school curriculum (fewer college preparatory students in the withdrawal group), educational plan (withdrawal group planned on briefer college training), and occupational choice (more students in withdrawal group chose clerical occupations or were undecided). Employment and finances were the most frequently cited reasons for withdrawing.

Cowhig (1963, p. 333) reports that dropout students listed employment (21 percent), lack of money (18 percent), loss of interest (15 percent), and poor grades (5 percent or less), while marriage for men (7 percent) was listed five times more frequently for women. Knoell (1966, pp. 66-68)

states that while such factors as academic progress, motivation, and finances are important determinants in attrition rates, illness and injury play only a small role, and social factors are inconclusive. She further states that possible reasons for high attrition rates are the expanded growth of community colleges, increased heterogeneity of the student populace, sound vocational programs that lead directly to immediate employment (many times before the completion of the two-year program), improvements in the quality of entering freshmen and the apparently unidentifiable reasons for the initial choice of attending college.

Anderson (1967, p. 6) concludes that from the results of placement tests administered during registration, dropout students tended to resemble more closely non-enrolled applicants than those students who completed their first semester. In considering differences and similarities between persister and dropout student, Weigel (1969) notes that a significant difference did occur between non-persisters and persisters in that the latter group were more interested in "preparation for a better paying job", and "encouragement by people outside the college"; and, as a result, were not as likely to withdraw early.

Morgenstein and Strongin (1970, p. 14) indicated that although both groups had more younger than older siblings, the dropout group averaged 1.4 siblings as opposed to the persister group which averaged 1.2 siblings. They also note that the family and personal earnings accounted for the majority of the financing for both groups, although dropouts on the whole tended to come from families earning less money. Also, a large majority of dropout students held full-time jobs while attending college and after leaving college almost 90 percent of the dropouts who gained employment, did so in business areas.

Davis (1970) explains that in his study of 143 withdrawees, the majority of them expressed more disappointment with themselves than with others, and listed finances, irrelevancy of college education, discouragement with meeting academic standards, marriage, health, and family problems as the main factors behind their lack of persistence. Commenting on the results of their findings, Hanson and Taylor (1970, p. 545)

maintain that "A student's ability will influence whether he succeeds academically in an Institute of Technology while personality characteristics will influence whether or not he withdraws or remains."

Kester (1971, p. 6) who reported on the NORCAL study results indicates that by grouping students according to ability and sex that 70 percent of the students could be correctly identified as persisters or dropouts simply by assessing the pattern of their weighted responses to a brief biographical questionnaire. She further notes that although a substantial number of potential withdrawals were observed, the "high liability" students were principally represented by metropolitan minorities. In her assessment of community colleges and technical institute students, Kester explains that the public images of the two types of schools were not sufficiently different so as "to attract students with different expectation for environment press or divergent personality needs" (page 15). She further concludes that of the students in occupational curricula, "The findings on variations between personality needs of students who continue and those who drop out, suggest a differential selective retention power based less on scholastic ability or demographic variables than on variations within a narrow range of intellectual interests and motivation."

Spady (1971) in his study concludes that there were ten identifiable factors which led to withdrawal. Although "grade performance" was the dominant factor, others such as academic potential, family, previous educational background, social integration, and institutional commitment are listed as having played a deciding role in the decision to withdraw or continue.

Astin (1972) commenting on a 62 percent dropout rate suggests that the principal predictors of persistence in college is represented by:

- analyzing grades in high school
- analyzing scores on tests of academic ability
- being a non-smoking male
- being unemployed during the academic year
- having high level aspirations upon college entrance
- showing a religious preference
- financing one's college education chiefly through parental aid, scholarships or personal savings

He further states that the principal predictors of non-persistence in college consist of:

- planning to marry while in college
- holding a job during the academic year
- smoking cigarettes
- being female
- turning in paper or theme late
- having no religious preference

Greenburg (1972, p. 10) states that of the students in his study over one-half of their parents had never attended college. He further explains that although ability is "clearly the key factor in discriminating between persister and withdrawees," he suggests that because of the size of the standard deviation and the number of correct predictions (about 67 percent), there will always be some students who obtain high scores who withdraw early and vice versa. His prediction for withdrawal is close to that of the NORCAL results at 7 out of 10.

Jones and Dennison (1972, p. 70) in a study conducted at Vancouver City College in British Columbia also found support for the conclusion that all types of students "including those of serious intellectual interests and high academic ability" may also withdraw early from the college. They also ranked the reasons for withdrawal, in order, as lack

as lack of finances, prefer to work, lack of interest^{*}, health reasons, academic difficulties^{*}, travel, inappropriate courses^{*}, moving, and family opposition (page 67). It is also interesting to note that of the entire dropout group, one-third re-enrolled within a year and that three-fifths of these graduated; while on the other hand, one-fifth withdrew for a second time.

Fenske, Scott and Carmody (1972, p. 18) in a longitudinal study comparing backgrounds and characteristics of students who began college in their local community as opposed to those who migrated from their home community to a college within the state or beyond found that during the latter part of the 1960's that interstate migration declined significantly and that the proportion of those attending local colleges increased significantly.

Willet (1973, p. 4) states that Moraine Valley Community College in Illinois experienced higher retention rates within an academic year (fall to spring) than between academic years (spring to fall). He further explains that students who have accomplished their goals tend to drop out after the end of the semester (74 percent), as opposed to those students who were unable to accomplish their goals and thus drop out before the end of the semester (page 12). Sixty-two percent of the students not returning gave goal achievement--personal or educational--as the reason for their decision. The composite profile of typical non-persisting students at MVCC in 1972 was a male, 19 to 21 years old, member of the freshman class, enrolled in a transfer program, a graduate of the local public high school, earned less than a 3.0 G.P.A., and took less than 12 semester hours.

Farine (1973, p. 7) reports that vocational students have more financial problems than do university transfer program students, although vocational graduates are better paid than the general program graduates. Almost half of the dropout students were working and earning money while still going to college.

* College related problems

Brightman (1974, pp. 14-15) in his summary of findings from Coast Community College District in California, arrives at the following conclusions:

Most students who quit community college courses do so early in the semester and many of those never show up again.

No upsurge in dropout rates immediately after vacation periods.

Instructors, typically, do not know why students quit their courses.

Over 40 percent of those who quit their courses never attended at all.

Students reported having to quit their courses because of changes in work and class schedules more frequently than any other reason.

Students do not usually confer with instructors or counselors prior to quitting a course.

Working does not contribute to a student's propensity to quit college courses.

Forty percent of those students who quit one college course had left college altogether.

Mahon (1974, p. 14) reporting on an eight-year follow-up study of students from Bucks County Community College in Pennsylvania indicates that 68 percent of those who graduated came directly from high school, while an additional 17 percent were "Stop In" and "Stop Out" students¹. Sixteen percent of the "Stop In" and "Stop Out" students had a primary educational goal of an associate degree, while 26 percent came for personal enrichment, and 31 percent were concerned with upgrading or retraining. Mahon further explains that at a later time 70 percent of the "Stop In" and "Stop Out" students indicated that they intended to continue their formal education, which as he states "lends support to the fact that education in our society is recognized as a life long process."

¹ Students who interrupted their studies at least once.

Powell (1974, p. 12), in his survey of recent literature, provides a rank order of dropout personality characteristics and reasons given for leaving college prematurely. Reasons most often cited:

money problems

conflict of personal values with the institution

part-time vs full-time enrollment

lower high school grades and standardized test scores

lack of personalized education (teacher attention)

academic problems

lack of backing from Home and Family

poor counselling

lack of personal commitment

Reasons least often cited were low self-attitude, and drug and alcohol problems.

Hall (1975) combined four annual attrition studies at El Paso Community College, Texas, and in the Abstract notes that in all four studies that were conducted, the major reasons given for leaving college were financial difficulties, transfer to another college, and insufficient time for both work and study. He further explains that a return to college at another time was the intention of a majority of students. His summary of the non-returning student was that of a 21 to 35 year old vocational/technical or business major, a "freshman" in terms of credits accrued, and a member of an ethnic minority.

Another 1975 study conducted by the Illinois Community College Board which involved 46 community colleges and 27,663 students found that in occupational/career programs that the sex ratio was even, that part-time students slightly outnumbered full-time students, and that 56 percent of students were in preparation for employment in career areas and 21 percent were enrolled in skill improvement.

Stine (1976), in his three-year study of students at Los Angeles Community College, reports that of the dropouts, 65 percent came from non-caucasian backgrounds, 46 percent were male, 48 percent had not been employed, and only 26 percent were employed full-time. He further explains that although about one-half expect to return to college, 97 percent reported that they felt "adequately served by the college."

In their discussion of data collection, Bower and Myers (1976, p. 17) report that attrition survey returns are anywhere from 15 to 40 percent lower than most other surveys; therefore, other methods of data collection must be undertaken. They also suggest that dropout information should be collected for more than one term because "nonreturning students between spring and fall term often leave to transfer to another school, while mid-year and mid-term dropouts more frequently leave for other such reasons as personal, emotional, and financial difficulties" (page 19).

In conclusion, Blai (1972, p. 17), abstracting from numerous studies, provides an excellent summary of tendencies and characteristics (in no particular order) and presents the following "profile" of the college non-persister student as contrasted with the persister student. The non-persister student is depicted as:

- employed more time outside school
- more enroll in schools as part-timers
- attend more schools prior to 10th grade
- more often attend private, church-related and co-ed schools than other types of junior colleges
- lower high school GPA
- lack of proximity to college
- seek transfers to four-year colleges
- find institution calibre not as high as expected
- desired subjects not in curriculum
- experience academic difficulty

lack of goals or college-oriented interests

"general" dissatisfaction

marriage

lack of interest in subjects

lack of open-minded, flexible and autonomous disposition

fewer parents urge college attendance

financial pressures

lower normative congruence

lower friendship support

lower social integration

lesser institutional commitment

want time to reconsider interests and goals

changed career plans

come from lower socioeconomic backgrounds

have lower initial educational aspirations

smoke cigarettes

being a female

turning in paper or theme late

having no religious preference

health problems

family problems

Secretarial Science Students

As Roueche and Boggs (1968) so astutely point out, "The junior college typically is not geared to performing indigenous studies. Even though research--basic or applied--is seen more and more as one of its functions, it is still not a hallmark of this institution." In the area of secretarial science this statement is even more meaningful, because the number of community college studies dealing mainly with females is relatively limited, while the number of research projects focusing on the secretarial area is of even greater scarcity.

However, the little-published information that is available indicates that according to Hulbert (1976, p. 11) a "disproportionate percentage of female students," represent 96 percent of the enrollment in stenographic, secretarial, and related fields. He further explains that females comprise 82.2 percent of the filing and office machines field; typing and related areas, 79.6 percent; information communication, 72.4 percent; personnel, training, and related areas, 63.3 percent; and accounting and computing fields, 59.8 percent. Hulbert further notes that of the vocational programs, office occupations at 76.4 percent, health occupations at 84.7 percent, and home economics at 91.6 percent represent the female dominated programs. He does note that of all the office occupations instructional fields, supervisory and administrative management is the only area in which females comprise a minority (27.6 percent). About equal representation occurs in only two of these instructional fields--business data processing systems, represented by females at 49.0 percent, and materials support and transportation at 51.7 percent. As noted earlier, on an institutional basis, female students may be outnumbered by as large a ratio as two to one.

Although one-year completion rates are considerably higher than two-year program graduation rates, it appears that shorthand, as a secretarial course in both the first and second year, has the highest failure rate of all the secretarial courses. As Lawhorn (1971, p. 41) notes, shorthand normally is required in three of the four semesters; therefore, ". . . it would seem that success [in shorthand] is the key

to the completion of the two-year degree." As Anderson (1967, p. 92) explains, a more careful selection of beginning shorthand students could obviously reduce the attrition rate in this area. However, although shorthand does represent a major attrition problem for secretarial students, there are some secretarial programs that do not require either a symbolic or alphabetic shorthand course; therefore, other significant factors which also contribute to the same attrition problem must also exist.

Rice (1969, p. 22) notes that in Yakima Valley College in Yakima, Washington, both the Secretarial Training Department, as well as the Business Administration Department, experienced "dropout grades" that approached double the "success grades." He suggests that these programs attract numerous students because of popular appeal, interest, and self-improvement, although many of them cannot, or are not prepared to, face the "harsh realities of a challenging curriculum." Elaborating further, Rice also indicates that more "failure" grades than "success" grades are encountered in the vocational programs, while the converse is true for the other two-year terminal programs (page 59).

Farine (1973, p. 4), commenting on community colleges in Quebec, notes that of the graduating class 58.2 percent were female and conversely only 41.8 percent of the dropouts were female students. The explanation provided is that although females represent a greater percentage of the graduating class, they also ". . . take the shorter way to the working world as nurses, technicians, and qualified secretarial workers." He further elaborates that females are more "dreamy" (personal aspirations) and that they become dropouts more for health reasons and less for academic reasons than do males. Of the non-academic reasons for withdrawal from vocational programs, female students ranked sociological factors (family, college adjustment problems, health, marriage, and personal aspiration) at 45.7 percent, psychological factors (being fed up with the college program and establishment) at 27.9 percent, and financial problems at 20.2 percent.

Lawhorn (1971, p. 65) reports that "regardless of the reasons stated by the dropouts, the college academic records showed that 66 percent of

the first-term dropouts and 50 percent of the second-term dropouts were either failing or had less than a 'C' (2.0) overall grade point average at the time they withdrew from the program." She further notes that shorthand appeared to be the "key to success" in this program because 48 percent of the first-term dropouts and 40 percent of the second-term dropout students were failing their shorthand courses. Alfred (1972, p. 19) notes that in his study of the Metropolitan Junior College District in Kansas City, Missouri, the full-time female students attempted to maintain at least a partial credit load and only terminated their enrollment as a last resort.

In her description of what the dropout secretarial students planned to do after leaving the program, Lawhorn (1971, p. 68) indicated that 56.8 percent reported "full-time employment," and 13.5 percent "marriage" as the two most important reasons for their decision. Of the employed females, Perkins (1975, p. 337) indicated that women earned approximately 60 percent of the average earnings in male dominated areas of employment.

Lawhorn further explains that teachers were evenly divided (44 percent for and 44 percent against) on the opinion that lack of student interest and motivation contributed to the department's dropout rate (page 85). In Alberta, Mehra (1973, p. 12) reported that "marriage" and "loss of study interest and motivation." along with an "unsatisfactory college experience" were ranked as the most important reasons for withdrawal by the University of Alberta female students. Cowhig (1963, p. 333) notes that marriage claimed 35 percent of the female dropout students in his study.

Morgenstein and Strongin (1970, p. 44) found that 68 percent of the dropout and transfer students voluntarily chose to enroll in the secretarial science program, compared with only 59 percent of the remaining students. Information contained in a 1973 "Report of Biographical Information of Minnesota Area Vocational-Technical Institutions," indicates that almost 12 percent of all the students were enrolled in a secretarial and/or clerical training; 82 percent of the students reported being single, 15 percent were married, 40 percent were 18 years of age, and only 8 percent were over 25 years or older (page 7).

In another study conducted at Williamsport Area Community College during the years 1969 to 1973, it was found that secretarial graduates listed typing, office practice, and business communications as their most important courses and key-punching, computer programming, and accounting principles as their least important courses.

Listing reasons given by the students as to why they chose to enter that particular institution, 43.7 percent of the dropouts and 62.5 percent of the persisters reported that it was "inexpensive," while close to another one-fifth added that it was "close to home" (Lawhorn, 1971, p. 91).

Age of the students according to Lawhorn (1971, p. 95) did not show a significant difference between the persisters and dropouts, as all were between 17 and 19 years, with 61 percent of the students being 18 years at the time they enrolled. Snyder and Blocker (1969, p. 11) report that the average age of female dropouts at Harrisburg Area Community College was 21.6 years.

Blai (1972, p. 13), reporting on reasons why students attending a two-year private junior college for women did not return for their second year, indicates that 60 percent were classified as "presumed dissatisfied" because no responses were received, while 18 percent "transferred to a four-year college" and 9 percent each for "difficulty in adjusting" and "finances."

Reporting on female students attending the University of Lethbridge in Alberta, Mehra (1972, p. 5) did not find any difference between the freshmen students who registered in the fall semester as opposed to those initially registering in the spring semester when comparing marital status, type of high school attended, and place of residence.

Lee (1975, p. 34) in presenting a paper at the American Educational Research Association in Washington, D. C., notes that "reverse transfer" female students coming from four-year colleges and entering community colleges are "very much like the native community college students in most characteristics." She strongly advocates that "Follow-up studies which determine why students leave the community college . . . might give some insight into means of 'salvaging' a larger percentage of the

female students."

As Lawhorn (1971, p. 115) concludes, the high school grade point average is the best predictor of secretarial success, although college grade point average, shorthand grade point average, and English scores as well, comprised the four variables which produced significant differences in identifying dropout and persister students in the secretarial program.

Summary

The community college (junior college, technical institute, agriculture college, or vocational college) is a post-secondary, two-year educational institution offering a comprehensive curriculum (university transfer, occupational/vocational, and adult programs) specifically designed to provide ultimately a universal education to meet the needs of the immediate community in which it is located.

Numerous studies conducted over the past thirty years indicate that the community/junior college students as a group appear to be somewhat less able academically than their four-year college peers but do score higher on ability tests than do the non-college group as a whole. A tremendous variation in academic ability at community colleges does exist, although four-year colleges tend to draw a larger percentage of the top one-quarter of the graduating high school seniors. A majority of freshman community college students average at least a 'C' (2.0 GPA) grade in their high school programs.

The typical full-time community college student ranges in age from 18 to 22 years, is single, a freshman, has a Protestant religious background, and more often than not is a male. Generally speaking, the two-year college students come from homes of lower white-collar and blue-collar families (lower-middle and lower class homes) whose parents do not have a college education. Transfer students, however, tend to come from higher socioeconomic levels, receive more family encouragement to succeed, and appear to be more upwardly mobile.

Although few community college students indicate that finances are their major concern, there is no question that the relative low cost

and easy accessibility of these two-year institutions adds to their attractiveness for the majority of students. In addition, students indicate that the practical emphasis on vocational and occupational programs further enhances the other positive aspects of these institutions. Although there is no unanimous agreement about why students choose the two-year college, the majority of the students express satisfaction at their choice and confidence in their training.

The personality characteristics of community college students reflect the middle and lower classes of the society from which they come. In comparison to four-year college students, the two-year college students tend to score lower on personality ratings, with a smaller percentage in the high score range, although the overlap of individual scores reflect group differences rather than "distinct populations." Although the amount of influence that community colleges impart to their students is not easily measured nor clearly understood, the fact that only two years of community college exposure occurs may in part explain some of the resulting ambiguity in this area.

Historically, community colleges have emphasized the traditional "transfer" program (providing a "second chance" to university)--in some cases to the exclusion of all other programs. More recently, however, occupational programs are becoming relatively popular, with the business enrollment increasing most rapidly. The actual choice of major by the student appears to be largely influenced by the home environment and family values which are instilled in the young offspring during the developmental years of maturation. Research results indicate that "transfer students" and "reverse transfer students" both compare favourably with their native peers once the institutional and environmental adjustment is facilitated.

Attrition in community colleges, which runs to over 50 percent in some institutions, has been, and still is, a hotly debated issue; its effects are just as confusing as ever. Is it a loss to the student with negative connotations for the institution, or a bold and decisive step for the student with positive benefits for the institution? Although leading authorities cannot arrive at a consensus, some do suggest that

perhaps this phenomenon should be viewed as one of the legitimate results of an increasing number of students attempting to obtain a post-secondary level of education.

As numerous research studies indicate, the dropout student is more deficient both in his own background (academically, socially, and intellectually) and that of his parents (socioeconomically, occupationally, and educationally), when compared with his persister peers within the same institution. In addition, a sampling of other causative factors include lack of motivation; incongruence of student expectation and college curriculum, social environment, and academic standards; personal background generated conflicts of religion, ethnic origin, and socioeconomic status differences; non-conformity and/or maladjustment to environmental restrictions; and the realization of personal goal achievement; or the recognition that the educational goal achievement is unattainable. Another possible attrition situation arises when the potential "withdrawal" personality is confronted with a "college milieu" (peers, faculty, administration, and campus environment) that is inconsistent and incompatible with the "self" concept of the individual.

Numerous research studies that were summarized indicated that although there was considerable variation and overlap in data reported and lack of agreement in the interpretation of some information, nevertheless, over 30 student characteristics, which tended to distinguish attrition student characteristics as opposed to persister student characteristics, were identified.

The scarcity of specific information on secretarial science students in two-year colleges is alarming, because this group generally represents about one-tenth of the total college enrollment and comprises 96 percent of the stenographic and clerical instructional areas. Shorthand appears to be the single most dominant factor in determining whether or not a secretarial student will be successful or become a dropout. "Marriage" and "full-time employment" represent two of the major benefactors of the college female attrition students.

Although this chapter has attempted to review the majority of the major research studies dealing with the community college student and

some of the associated attrition problems, numerous studies have not been included. As Cohen, Brawer, Lombardi (1971, pp. 97-98) aptly explain, in summary of the hundreds of studies that describe various aspects of the community college student:

Taken individually or as a group, the reports are like descriptions of a bed of pebbles. They tell us much about a few general characteristics but little that delineates a single pebble or an individual student. There are a few anecdotal reports; almost nothing tells what college has meant to one student or to one type of student. One way to cope with this mass of literature on students is to look at people as pebbles--how they appear on the surface and then how they look under close scrutiny. To talk about characteristics of either pebbles or people and to come up with an approximate picture of the average are not at all difficult tasks. It is infinitely more difficult, however--and vastly more interesting--to describe unique traits of a single pebble or an individual and, eventually, to arrive at the conclusion that no pebble--and no person--is exactly like any other. If we cherish our differences--as so many of us do--let them live by incorporating them into our understanding of man.

III. DESIGN OF THE STUDY

Selection of the Sample

The full-time secretarial science students who participated in the data collection phase of this investigation represented a stratified cluster sample of students enrolled in secretarial science programs at selected two-year¹ post-secondary non-university educational institutions in Alberta.

A total of 309 one- and two-year secretarial science students² completed and returned to the College Auto-Biographical Inventory (CABI) from which the data for this investigation were obtained. The results from one student were subsequently withdrawn because the Inventory had only been partially completed. The students who composed the sample in this study represented 26.55 percent of the 1,164 full-time secretarial science students enrolled in the academic year 1975-76.³ Excluding university secretarial programs, the total student enrollment in secretarial programs in the province represented 3.88 percent of the entire college student population in Alberta.

Included in this study were the following seven institutions which represent a cross section of large and small colleges in rural and urban localities in Alberta.

¹ Length of academic year includes quarters, semesters, trimesters, and four-week entry points.

² Representing 70 percent of the secretarial students enrolled in the institutions cooperating in this study. (Exclusion of the results from the one institution with a low return rate would have increased the student representation to 84 percent.)

³ Alberta Vocational Centers offer only one-year programs.

Public Colleges:¹

Grande Prairie Regional College, Grande Prairie
Lethbridge Community College, Lethbridge
Mount Royal College, Calgary

Technical Institutes:

Northern Alberta Institute of Technology, Edmonton

Agricultural/Vocational Colleges:

Keyano College, Fort McMurray

Vocational Centers:

Alberta Vocational Center, Grouard
Alberta Vocational Center, Lac La Biche

The Instrument

The instrument selected for this study was the College Auto-Biographical Inventory (Experimental Form X5), Hammond, Callis, and Ommen (1974)² which is composed of a 110-question, five-variable forced choice response inventory dealing with demographic, attitudinal, and personal characteristics.

Although some of the questions contained in the Inventory specifically pertained to American students and were not applicable to Alberta students, the instrument itself was not modified so that as many valid comparisons as possible could be made with students in both geographic locations. Results from questions which were not considered relevant to the Alberta college student were ignored in the analyses of the data.

In addition, a standardized questionnaire format was used to identify and collect information about attrition students throughout the academic year.

¹ As defined by the Colleges Act of Alberta, 1969.

² Used with the kind permission of the authors.

Collection of the Data

Initial contact, consisting of a personal interview and telephone calls, was made with officials from the Department of Advanced Education and with instructors and administrators of the selected institutions in an attempt to secure their cooperation in conducting this investigation. Follow-up letters providing detailed information required to administer the Inventory and confirmation of time schedules were sent.

The secretarial science students at Lethbridge Community College were the first group to complete the CABI. After evaluating the results and experiences of the instructors who were involved in the administration of the Inventory, minor changes to the "Instructions" were made. Copies of the Inventory, along with copies of the "Answer Sheet" and appropriate instructions, were sent to the participating institutions.¹

Through the cooperation of various administrators and instructors in each of the various participating institutions across the province, the CABI was successfully administered and results returned to this investigator during the academic year beginning September 1975 and concluding at the end of April, 1976.

In addition, attrition data were provided by the instructors or administrators involved in this investigation when it was possible to identify such attrition students within those particular institutions. Personal follow-up procedures were conducted with a selected number of the dropout students throughout the year of 1976. Telephone calls or personal interviews were utilized in an attempt to verify the actual reason for withdrawing from the program.

Statistical Analyses of the Data

After receiving the CABI data results, each Inventory Answer Sheet was coded so that identification of the responses could be made by type of institution as well as by student. The age of each student was then

¹ Some delays were encountered in both sending and receiving the Inventory material due to a Canada-wide mail strike in the fall of 1975.

converted into months by utilizing the birth date. Responses from each student were then coded and key punched on I.B.M. cards, and the resulting punch card deck was inspected for accuracy.

A computer program was written to tabulate results for each variable and processed through the computing services at Northern Alberta Institute of Technology in Edmonton, Alberta. In addition, chi-square, cross-tabulations, and discriminant function analyses were conducted at the Computer Center at Oregon State University, Corvallis, Oregon, and at the Computer Center, University of Lethbridge, Lethbridge, Alberta, using the Biomedical Statistical Computer Programs (Dixon, 1973), and the Statistical Package for the Social Sciences (Nie et al, 1975).

The results of the data collected from this investigation basically fall into three categories.

1. The development of a secretarial science student "composite profile" based on a summary of provincially tabulated totals and percentages dealing with demographic, attitudinal, and personal descriptive data characteristics.
2. Statistical treatments involving 308 secretarial students and all 110 CABI variables.
 - a) Chi-square analyses of student responses to the CABI statements from the following identified groups-- "public colleges" versus "other institutions," and "dropouts" versus "persisters."
 - b) Stepwise Discriminant Function Analysis of student responses to the CABI variables comparing dropout students with persister students.
3. A summary of identifiable attrition students' stated reasons for withdrawal.

IV. ANALYSIS AND PRESENTATION OF THE FINDINGS

The findings of this investigation are presented in five separate sections which parallel the purposes of this investigation.

The first section, entitled "Student Characteristics" describes the province-wide sample of secretarial science students in both frequency distributions and percentage totals. The student responses to the 52 personal inventory questions are summarized in one table which is designed to identify and distinguish the various traits, attributes, and background characteristics of the students involved in this inquiry.

The second section, entitled "Student Attitudes" presents the responses of students to the 58 personal inventory questions. The data are summarized by frequency distributions and percentage totals in one table and utilizing a five-point continuum scale (from strongly agree to strongly disagree) to indicate how students personally assessed themselves and identified with the various statements and opinions presented.

The third section, entitled "Comparison of Students from 'Public Colleges' and 'Other Institutions,'" presents a comparison of student responses from three public colleges and responses from students representing a technical institute, an agricultural college, and two small vocational training centers. The results of a chi-square analysis of the 110 questions in CABI, which identify those variables that differ significantly at the .05 level, are presented in 18 tables.

The fourth section, entitled "Dropouts versus Persisters," presents a comparison of the data representing the identified dropout students with the persister students. A chi-square analysis, presented in summary form in two tables, identified the 18 variables which were statistically different at the .05 level of significance. In addition, the results of a stepwise discriminant function analysis on 29 variables, and the resulting weighted coefficient equations which were generated, are presented in six tables.

The fifth section, entitled "Stated Reasons for Student Attrition," summarizes the responses received from 49 dropout secretarial science students.

Student Characteristics

Demographic Background

According to Table 27, (see Appendix A, page 185) which summarizes the students' modal responses to the CABI statements dealing with personal characteristics, approximately 99 percent of the enrolled students were females, with a median age of 21.84 years as at January 1, 1976, three-fourths were under 20 years of age (one-third were 18 years old), two-thirds were single.

Parental educational backgrounds, for the most part, is similar to that of two-year college students in the United States. Results indicate that almost two-thirds of fathers and just over one-half of the mothers did not graduate from high school. Almost two-thirds of the fathers were reported to have occupational and vocational jobs while about two-fifths of the fathers were reported in semi-skilled level occupations. Just under one-half of the mothers were not employed outside of the home. Nearly two-fifths of the students indicated that they were financially independent, while close to one-fifth of the students estimated their parental income at over \$12,000 yearly.

As might be expected, the majority of young women approaching the end of their teens were involved in a variety of dating patterns and frequencies. Approximately one-third of the students dated one person "seriously," while another one-quarter of the students indicated that they dated "a lot of different people." Although two-fifths of the students reported that they had "gone steady" at least once in the past year, one-quarter indicated that they had not. The only apparent trend in dating patterns that seemed definite was that one-half of the students did not intend to get married for at least two or three years after the completion of their college education. Just over one-tenth of the students sampled reported that they were married.

The vast majority of students (four out of five) attended a small public high school. Two-thirds of the secretarial students reported fewer than 250 students were in their graduating class--almost two-fifths having fewer than 100 students. For one-half of the students, their schools were located in a rural area or a small town. Only one-quarter

of the students had attended a school in a medium sized city, while less than one-fifth had attended a school located in a large city.

High School Academic Background

High school cumulative grade point averages for the secretarial science students in Alberta reflect American high school students' achievement, as about seven-tenths of the students reported earning at least a "B" grade or better. The mode, at one-third of the group, was a "B" grade. Close to one-half of the students did not know where they ranked academically in their high school classes. Just over one-third of the students responded that they were in the top half of their high school class.

In terms of subjects which require the student to obtain special help before taking a college course, little variation between the subjects was indicated. One-quarter of the students identified mathematics, followed closely by English and a foreign language. When rating their "weakest characteristic," however, over one-half of the students felt "giving a speech" caused the most problems.

As for extracurricular activities during high school, a little over one-half of the students reported they did not participate, with just under one-quarter reported having participated in only one activity. About two-fifths of the students reported that they did not work for pay while attending high school in their senior year, while one-fifth reported working from 1 to 8 hours per week, and just over one-tenth working from 9 to 15 hours per week. Although four-fifths of the students indicated that they had up to four summers of paid employment, one-quarter of the students had worked for two summers only.

Beginning with the ninth grade, just over one-quarter of the students reported taking three or four "business and commercial" courses although four-fifths indicated that they had at least one course or more during their high school training. On the other hand, close to one-half of the students said that they had taken one or two courses in "vocational shop, agriculture, or home economics" beginning with the ninth grade. During that same period about one-third of the students indicated that they had not taken a foreign language course while another one-third

claimed to have taken at least one or two semester courses.

Background Information

As for information leading to college attendance, close to three-fifths of students entered college within less than a year from the time that they had graduated from high school. About one-tenth of the students had delayed their college training for at least four years or more. Just over one-half of the students submitted applications for college admission from Easter onwards.

Over one-half of the students reported that they would prefer to live in a "private apartment or house" while attending college, one-quarter preferred living with their parents, and one-tenth said that they would choose a "college residence hall."

Although three-quarters of the students reported that their parents' homes were within a radius of 150 miles of the college that they were attending, two-fifths were within 10 miles or less, and one-tenth reported a distance of more than 300 miles.

Financing College

One-third of the secretarial science students reported that their parents were financing their college education. Personal savings accounted for close to one-quarter of the students, scholarships and grants, loans, and working during college represented just under an additional one-third of the financing. Close to one-half of the students indicated that they had not, and did not, intend to apply for financial aid while attending college. Just over two-thirds of the students did not intend to work, except possibly during holidays. Slightly under one-quarter of the students reported they may take employment up to a half-time basis (20 hours per week).

College Attendance

Two-thirds of the secretarial students reported that it was their own decision to go to college, as opposed to only one-fifth who indicated that "parents or close relatives" played a dominant role in that decision. Seven out of ten students were in the secretarial program to "learn a good vocation or profession." However, almost one-half of the students

indicated that they would not be in college if they "could find something else interesting to do." Approximately one-third of the students indicated that they "always assumed" that they would eventually go to college--undoubtedly mainly due to family influences during their younger years, although only a relatively small number of students admitted that parents and family influenced their decision to attend.

Two-fifths of the students reported that the greatest influence to attend the particular institution they were attending was that that institution was close to their home. Another one-fifth of the students were there because the college had a "good general reputation," while slightly over one in ten felt the institution was strong in the secretarial area.

The students' reaction to the particular institution that they were attending was very favorable. One-half of the students reported that they "enjoyed" their experiences, while almost nine out of ten responded in a positive manner.

Although three-fourths of the students were "fairly" or "quite" sure of their choice as to college major or career, about one-half still entertained the possibility of further exploration or change in this area.

One-half of the students felt that they could obtain a "B" average in their college courses while another one-fifth felt that they could obtain at least a "minimum necessary to graduate."

As for future educational plans, slightly over one-half of the secretarial students planned to complete one year of course work while another one-third hoped to complete two years of training.

Miscellaneous Characteristics

Just over two-fifths of the students reported that they did not smoke, while one-third indicated that they smoked fairly regularly but averaged less than a pack a day.

As for the "drug scene," just over one-half of the students felt that drugs are used as an "escape" outlet activity, while another one-quarter of the students felt that drugs are used "for recreation and good fellowship."

Slightly over three-fifths of the respondents indicated that dancing and one-quarter that partying represented their most enjoyable leisure activity.

Student Attitudes

Family Relationships

Table 28 (see Appendix A, page 188) summarizes the students' modal responses to the CABI statements dealing with student attitudes. Secretarial students in this investigation indicated that, by and large, their relationships with their respective families were of a positive nature. Close to one-half of the students did not express a greater desire to confide in their parents, and two-thirds of the students did not agree that "parents and relatives finding fault" was a problem. Family "love and companionship" also was reported in a positive perspective when eight out of ten students agreed that it existed. As for leaving home, just over two-fifths reported that at times they very much wanted to, while one-third responded in the opposite manner.

In responding to statements involving family influences, almost three out of four students were convinced that their parents wanted them to choose a career that they the students would be satisfied with. This contention is supported by the fact that over eight out of ten students felt that their family supported their decision in choosing a secretarial major and their subsequent entry into the secretarial field of work.

High School Experiences

The majority of secretarial science students in this study appeared to recall their high school experiences in a typically expected manner. For example, in response to the statement "In high school good grades came rather easily for me," approximately two-fifths of the students agreed and an equal number disagreed. Eight out of ten students indicated that they did not encounter discipline problems during their high school years. As for extracurricular activities, approximately one-half of the students participated and an equal number did not.

Health Background

Research findings indicate that women, more frequently than men, identify poor health as contributing to their lack of success in college. However, the secretarial student responses in this study reflect the expected "healthy" state of the students when at least four-fifths reported feeling well most of the time and having a good appetite. On the other hand, some of the unsettling decisions that also have to be made at this time of life are reflected by the fact that just under one-half of the students indicated that "thoughts or ideas" bothered them when they were trying to go to sleep. However, an equal number of the students reported that they "felt rested in the morning."

Promptness and Organization

The secretarial students' reaction to planning and organization shows that close to four-fifths completed their term paper assignments on time, although one-half of them did admit that they "put off until tomorrow" what should have been completed today. Almost three-fifths of the students claimed that their work was "carefully planned and organized."

Daily Expectation

The reaction of the secretarial students to statements which described their feelings about day-to-day levels of interest indicated that over three-fifths of the students did not agree that everything they did was "an effort" and that they dreaded facing a new day. On the other hand, slightly over one-half admitted becoming bored unless they were "doing something active" but disagreed that they had difficulty completing a project.

Student Behavior and Regulations

Only one-half of the four CABI statements of a philosophic nature provided conclusive results. Approximately three-fifths of the secretarial students did not agree that they had "always disliked regulations" and also disagreed with a similar statement which said that "I dislike following a set schedule."

Views on Drugs

Although the publicity about drugs and younger people has somewhat subsided, the topic is still one that generates diverse opinions and heated debate. The opinions expressed by the secretarial students in this investigation indicated that one-half of the students disagreed that "There is too much criticism of the 'drug scene' today." As for the reason as to why students join the "drug scene," just over two-fifths of the students felt that drugs were used as an "escape from personal problems."

Views on Law Enforcement

The compiled data shows that almost three-fourths of the students supported the contention that policemen were helpful and did a good job and indicated that their experiences with law enforcement members were positive.

Views on Life

Almost without exception, between seven and eight students out of ten disagreed with such negatively worded statements as received "a raw deal from life," "lack of success is due to others," "have been wrongfully punished," and agreed with such positively worded statements such as "life is full of interesting things," "pleased with life," and "happy with the way I am doing things."

Miscellaneous Self-Concepts and Opinions

A series of statements covering a wide range of topics were presented to the students in an attempt to solicit responses to their own perception of themselves and of their own opinions. Over three-fifths of the students agreed that their "feelings are easily hurt" and that they "frequently find it necessary to stand up" for what they think is right.

As for "X-rated" movies, almost one-half of the students indicated that they did not enjoy them.

Just over one-half of the students reported that they did not feel that others would consider their friends as being "unconventional."

Almost one-half of the students disagreed with the statement that there are too many girls on the "pill."

Feelings About College

Although over three-fifths of the students agreed that they "enjoy attending college" and disagreed that it was a "difficult decision" to make, only slightly over two-fifths disagreed with the statements which expressed concern about attending college and not obtaining a college degree.

Over three-quarters of the students disagreed that they would have chosen a different institution if "outside influence" had been eliminated.

The statement which attempted to identify whether or not one or two years of work experience better prepares a student for college life provided inconclusive results.

Realities of College Life

As already noted, by and large, the majority of students expressed satisfaction with their choice of a post-secondary educational institution and with their initial experiences there. This same optimism is expressed in responses to statements dealing with some of the realities of college life.

Close to two-thirds of the respondents felt that "home problems" would not interrupt their college education. Approximately three-quarters of the students disagreed that school work was a serious problem or that their work schedule would interrupt their college education. Exactly one-half of the students felt that they were obtaining lower grades than they were capable of making.

Comparison Of Students From Public Colleges

And Other Institutions

The returned inventory responses from the 308 secretarial science students were divided into two groups based on the type of institution they attended. The "public colleges" group (Grande Prairie Regional College, Lethbridge Community College, and Mount Royal College), with a total of 176 students, was compared with the "other institutions" group (Northern Alberta Institute of Technology, Keyano College, Alberta Vocational Center, Grouard, and Alberta Vocational Center, Lac La Biche), representing a total of 132 students.

Although the age classification was not statistically significant, "public colleges" students' average age was 22.530 years compared to those from the "other institutions" average student age of 20.909 years. The provincial total sample secretarial science student average age was 21.836 years.

A chi square statistical test¹, a nonparametric test utilizing nominal or ordinal measures based upon the concept of independence for discrete data (one variable is not related to nor affected by another variable), was conducted on the 110 variables listed in the College Auto-Biographical Inventory. The actual computer program used for this phase of the data analyses was Subprogram Crosstabs (Nie et al, 1975).

¹ A test of statistical significance which helps determine whether or not a systematic relationship exists between two identified variables. The computation of cell frequencies, which would be expected if no relationship is present between the variables, produces row and column totals called marginals. The expected cell frequencies are then compared to the actual values found in the table utilizing the following formula:

$$X^2 = \frac{(f_o^i - f_e^i)^2}{f_e^i}$$

The variables (or CABI statements) which demonstrated statistical significance, a rejection of the null hypothesis at the .05 level of significance, are explained in this section and summarized in Tables 1 through 18.

When the student responses to the CABI statements were subjected to a chi square analysis, a total of 18 variables were identified as rejecting the null hypothesis of no statistical difference between the students from the "public colleges" group and the students representing the "other institutions" group. Of this total, 15 variables represented personal characteristics, and the other three represented attitudinal variables.

¹ continued

where f_o^i = the observed frequency in each cell

f_e^i = the expected frequency as calculated by the following formula.

$$f_e^i = \frac{c_i r_i}{N}$$

where c_i = the frequency in a respective column marginal

r_i = the frequency in a respective row marginal

N = the total number of valid cases.

Small values of chi square, which may be explained as reasonably expected deviations because of chance, indicate that the sample populations are similar, and no statistical independence exists. Conversely, large values of chi square, which rejects the notion that deviation occurs because randomly selected sample data differences are due to chance alone, implies "that a systematic relationship of some sort exists between the variables"--an indication of a statistical independent relationship.

The greater the discrepancies between the expected and actual frequencies, the larger the chi square value becomes. (Nie, et al, 1975, pp. 223-224).

Personal Characteristics

Variable No. 10 (See Table 1). A total of 80.5 percent of the sampled secretarial science students attended a public high school during their last two years. This total was composed of 47.7 percent from the "public colleges" group, as opposed to 32.8 percent from the "other institutions" group. An additional 13.3 percent indicated they had attended a "military academy," while only 3.6 percent said that they had received their education through some other type of institution.

Over four-fifths of the "public colleges" students (83.5 percent) came from public high schools as opposed to about three-quarters of the "other institutions" students (76.5 percent).

The degree of significant difference for this variable was .0233; therefore, the null hypothesis was rejected at the .03 level.

Variable No. 11 (See Table 2). About two-fifths of all the students (38.6 percent) attended a high school in which the graduating class comprised less than 100 students--60.5 percent came from "public colleges," while 39.5 percent represented "other institutions." Close to two-thirds of the students (65.2 percent) reported graduating from a class which had less than 250 students. Almost 18 percent indicated their graduating class contained 250 to 499 students while only 9.7 percent had graduated from classes involving over 500 students. The percentage distribution for the larger graduating classes (500 or more students) was greater for "other institutions" respondents at 5.5 percent than for the "public colleges" students at 4.2 percent.

The degree of significant difference for this variable was .0104; therefore, the null hypothesis was rejected at the .02 level.

TABLE 1
TYPE OF HIGH SCHOOL ATTENDED

CABI No. 10 What type of high school did you attend for the greatest part of your last two years in high school?

- 0. no response
- 1. public high school
- 2. church related high school
- 3. military academy
- 4. private high school not church related and not a military academy
- 5. something other than above

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	2	147	19	0	5	3	176
	Row Percent	1.1	83.5	10.8	0	2.8	1.7	57.1
	Column Percent	100.0	59.3	46.3	0	100.0	27.3	
	Total Percent	.6	47.7	6.2	0	1.6	1.0	
Other Institutions	Number	0	101	22	1	0	8	132
	Row Percent	0	76.5	16.7	.8	0	6.1	42.9
	Column Percent	0	40.7	53.7	100.0	0	72.7	
	Total Percent	0	32.8	7.1	.3	0	2.6	
Column Total		2	248	41	1	5	11	308
Total Percent		.6	80.5	13.3	.3	1.6	3.6	100.0

Raw Chi Square = 13.00417

Significance = .0233

TABLE 2
SIZE OF HIGH SCHOOL GRADUATING CLASS

CABI No. 11 How many students were (are) in your high school graduating class?

- 0. no response
- 1. less than 100
- 2. 100 to 249
- 3. 250 to 499
- 4. 500 to 749
- 5. 750 or more

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	7	72	53	31	5	8	176
	Row Percent	4.0	40.9	30.1	17.6	2.8	4.5	57.1
	Column Percent	31.8	60.5	64.6	56.4	27.8	66.7	
	Total Percent	2.3	23.4	17.2	10.1	1.6	2.6	
Other Institutions	Number	15	47	29	24	13	4	132
	Row Percent	11.4	35.6	22.0	18.2	9.8	3.0	42.9
	Column Percent	68.2	39.5	35.4	43.6	72.2	33.3	
	Total Percent	4.9	15.3	9.4	7.8	4.2	1.3	
Column Total		22	119	82	55	18	12	308
Total Percent		7.1	38.6	26.6	17.9	5.8	3.9	100.0

Raw Chi Square = 14.98549

Significance = .0104

Variable No. 13 (See Table 3). Over three-fifths of the students (63.6 percent) lived within a radius of 50 miles of the institution that they were attending when this study was conducted. Of this total, 39.3 percent lived within 10 miles or less. The most noticeable difference between the two groups was in the category of 10 miles to 150 miles distance; a total of 24.1 percent of the "public colleges" students indicated that distance, compared to only 10.4 percent of the "other institutions." Slightly over one-half of the students who lived more than 300 miles away were attending "other institutions" (51.4 percent).

The degree of significant difference for this variable was .0020; therefore, the null hypothesis was rejected at the .01 level.

Variable No. 18 (See Table 4). Close to three-quarters of the secretarial students (72.1 percent) indicated that they had been out of high school for one year or less before they continued their post-secondary training. Although 35.4 percent of the "public colleges" students reported being out of school for one year, an additional 8.1 percent indicated that they had spent four or more years before returning to further their education. The students identified as attending the "other institutions," on the other hand, reported that 23.4 percent of them had been out a year and only 3.6 percent indicated a lapse of four or more years. Therefore, it appears that although a larger percentage of the "public colleges" students attend a college within a year after completing high school, they also have a higher percentage of students who did not return until after four or more years had elapsed.

The degree of significant difference for this variable was .0133; therefore, the null hypothesis was rejected at the .02 level.

TABLE 3
DISTANCE FROM PARENTS HOME TO COLLEGE

CABI No. 13 How far is your home (parent's home) from the college you plan to attend?

- 0. no response
- 1. 10 miles or less
- 2. 11 - 20 miles
- 3. 51 - 150 miles
- 4. 151 - 300 miles
- 5. more than 300 miles

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	5	67	43	31	13	17	176
	Row Percent	2.8	38.1	24.4	17.6	7.4	9.7	57.1
	Column Percent	22.7	55.4	69.4	70.5	54.2	48.6	
	Total Percent	1.6	21.8	14.0	10.1	4.2	5.5	
Other Institutions	Number	17	54	19	13	11	18	132
	Row Percent	12.9	40.9	14.4	9.8	8.3	13.6	42.9
	Column Percent	77.3	44.6	30.6	29.5	45.8	51.4	
	Total Percent	5.5	17.5	6.2	4.2	3.6	5.8	
Column Total		22	121	62	44	24	35	308
Total Percent		7.1	39.3	20.1	14.3	7.8	11.4	100.0

Raw Chi Square = 18.89117

Significance = .0020

TABLE 4
LENGTH OF TIME FROM HIGH SCHOOL GRADUATION TO ENTRANCE INTO COLLEGE

CABI No. 18 How long will it be between the time you graduated from high school and the time you enter college?

- 0. no response
- 1. less than a year
- 2. one year
- 3. two years
- 4. three years
- 5. four or more years

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	7	109	21	8	6	25	176
	Row Percent	4.0	61.9	11.9	4.5	3.4	14.2	57.1
	Column Percent	25.9	60.2	51.2	61.5	60.0	69.4	
	Total Percent	2.3	35.4	6.8	2.6	1.9	8.1	
Other Institutions	Number	20	72	20	5	4	11	132
	Row Percent	15.2	54.5	15.2	3.8	3.0	8.3	42.9
	Column Percent	74.1	39.8	48.8	38.5	40.0	30.6	
	Total Percent	6.5	23.4	6.5	1.6	1.3	3.6	
Column Total		27	181	41	13	10	36	308
Total Percent		8.8	58.8	13.3	4.2	3.2	11.7	100.0

Raw Chi Square = 14.39194

Significance = .0133

Variable No. 33 (See Table 5). Although 21.1 percent of the students had applied for admission by Christmas, another 23.4 percent had applied by Easter, an additional 26.3 percent by early July, and 26.3 percent more during the last two summer months before the academic year began in 1975.

About double the percentage of the students attending the "other institutions," however, applied for admission during the Christmas to Easter period--15.6 percent compared to 7.8 percent for the "public colleges" students. Almost twice as many "public colleges" students, on the other hand, applied during the two summer months--17.2 percent versus 9.1 percent.

The degree of significant difference for this variable was .0000; therefore, the null hypothesis was rejected at the .0001 level.

Variable No. 34 (See Table 6). A total of 61.4 percent of the students indicated that they planned to complete at least one year of post-secondary education--61.2 percent from "public colleges" and 38.8 percent from "other institutions." Just under one-third of the students (32.8 percent) felt they would continue their studies for two years. This total represents 31.3 percent of the "public colleges" students, and 34.8 percent of the "other institutions" students.

Although only 7.8 percent of the students who were sampled reported that they would finish only one semester; 70.8 percent of that total represented responses from the "public colleges" students.

The degree of significant difference for this variable was .0014; therefore, the null hypothesis was rejected at the .01 level.

TABLE 5
DATE OF APPLICATION TO COLLEGE

CABI No. 33 When did you apply for admission to this college?

- 0. no response
- 1. before last Thanksgiving
- 2. between last Thanksgiving and Christmas
- 3. between Christmas and Easter
- 4. between Easter and the 4th of July
- 5. after the 4th of July

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	7	22	25	24	45	53	176
	Row Percent	4.0	12.5	14.2	13.6	25.6	30.1	57.1
	Column Percent	77.8	59.5	89.3	33.3	55.6	65.4	
	Total Percent	2.3	7.1	8.1	7.8	14.6	17.2	
Other Institutions	Number	2	15	3	48	36	28	132
	Row Percent	1.5	11.4	2.3	36.4	27.3	21.2	42.9
	Column Percent	22.2	40.5	10.7	66.7	44.4	34.6	
	Total Percent	.6	4.9	1.0	15.6	11.7	9.1	
Column Total		9	37	28	72	81	81	308
Total Percent		2.9	12.0	9.1	23.4	26.3	26.3	100.0

Raw Chi Square = 32.48103

Significance = .0000

TABLE 6
PLANNED LENGTH OF COLLEGE EDUCATION

CABI No. 34 Right now I think I'll go to college for

- 0. no response
- 1. one term (semester or quarter)
- 2. one year
- 3. two years
- 4. three years
- 5. four years or more

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	0	17	101	55	2	1	176
	Row Percent	0	9.7	75.4	31.3	1.1	.6	57.1
	Column Percent	0	70.8	61.2	54.5	66.7	25.0	
	Total Percent	0	5.5	32.8	17.9	.6	.3	
Other Institutions	Number	11	7	64	46	1	3	132
	Row Percent	8.3	5.3	48.5	34.8	.8	2.3	42.9
	Column Percent	100.0	29.2	38.8	45.5	33.3	75.0	
	Total Percent	3.6	2.3	20.8	14.9	.3	1.0	
Column Total		11	24	165	101	3	4	308
Total Percent		3.6	7.8	53.6	32.8	1.0	1.3	100.0

Raw Chi Square = 19.71559

Significance = .0014

Variable No. 36 (See Table 7). Over one-half of the students (54.2 percent) indicated that they preferred to live in a private apartment or house. This total represents 62.9 percent of the "public colleges" students as opposed to 37.1 percent of the "other institutions" group. Close to one-third (30.3 percent) of the 132 students representing "other institutions" indicated their preference was to live with their parents, while only 18.8 percent of the 176 students from the "public colleges" group indicated that same preference.

Of the students who chose the alternative of living in a "college residence hall," 66.7 percent were from the "public colleges" group and only 33.3 percent came from the "other institutions" group.

The degree of significant difference for this variable was .0003; therefore, the null hypothesis was rejected at the .001 level.

Variable No. 39 (See Table 8). Over three-fifths of the secretarial students (63.6 percent) reported that the only employment they planned to take was during holidays. However, 33.0 percent of the "public colleges" students and 28.0 percent of the "other institutions" students indicated they would seek employment.

Of those students who planned to work a total of up to 10 hours per week, 57.5 percent came from the "public colleges" group. This group also led in all other work categories with 64.5 percent of those planning to work up to 20 hours, 63.2 percent of those planning to work over 20 hours, and 60.0 percent of those planning to work full time.

These figures are consistent with the data presented in Table 7 which indicated that a greater percentage of the "other institutions" students preferred to live at home. Therefore, they had the benefits of cheaper living costs and less need for additional financial support during the academic year.

The degree of significant difference for this variable was .0347; therefore, the null hypothesis was rejected at the .05 level.

TABLE 7
PREFERENCE FOR LIVING ACCOMMODATION

CABI No. 36 While attending college I would prefer to live

- 0. no response
- 1. in a college residence hall
- 2. in a fraternity or sorority
- 3. in a private apartment or house
- 4. with my parents
- 5. none of these

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	0	24	1	105	33	13	176
	Row Percent	0	13.6	.6	59.7	18.8	7.4	57.1
	Column Percent	0	66.7	50.0	62.9	45.2	68.4	
	Total Percent	0	7.8	.3	34.1	10.7	4.2	
Other Institutions	Number	11	12	1	62	40	6	132
	Row Percent	8.3	9.1	.8	47.0	30.3	4.5	42.9
	Column Percent	100.0	33.3	50.0	37.1	54.8	31.6	
	Total Percent	3.6	3.9	.3	20.1	13.0	1.9	
Column Total		11	36	2	167	73	19	308
Total Percent		3.6	11.7	.6	54.2	23.7	6.2	100.0

Raw Chi Square = 23.51625

Significance = .0003

TABLE 8
PLANNED EMPLOYMENT WHILE ATTENDING COLLEGE

CABI No. 39 How many hours per week (on the average) do you intend to work while attending college?

- 0. no response
- 1. none, except possibly during holidays
- 2. some, up to quarter-time
- 3. quarter-time to half-time
- 4. at least half-time but less than full-time
- 5. full-time (about 40 hr/wk)

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	3	115	23	20	12	3	176
	Row Percent	1.7	65.3	13.1	11.4	6.8	1.7	57.1
	Column Percent	17.6	58.7	57.5	64.5	63.2	60.0	
	Total Percent	1.0	37.3	7.5	6.5	3.9	1.0	
Other Institutions	Number	14	81	17	11	7	2	132
	Row Percent	10.6	61.4	12.9	8.3	5.3	1.5	42.9
	Column Percent	82.4	41.3	42.5	35.5	36.8	40.0	
	Total Percent	4.5	26.3	5.5	3.6	2.3	.6	
Column Total		17	196	40	31	19	5	308
Total Percent		5.5	63.6	13.0	10.1	6.2	1.6	100.0

Raw Chi Square = 12.00356

Significance = .0347

Variable No. 40 (See Table 9). Although close to one-half of the students (48.1 percent) indicated that the available responses did not describe them very well, a total of 46.5 percent of the remaining students indicated that scholarships or grants at 16.6 percent, off-campus employment at 15.3 percent, and loans at 14.6 percent represented the major planned sources of funding during their college education.

The "public colleges" group, representing 63.8 percent of the students who reported that they would rely on off-campus employment, approached double that of the "other institutions" responses of 36.2 percent.

A total of 14 students from the "other institutions" chose not to respond to this statement.

The degree of significant difference for this variable was .0003; therefore, the null hypothesis was rejected at the .001 level.

Variable No. 38 (See Table 10). Exactly one-half of the students reported that they would wait at least two or three years after completing their college education before they planned to get married.

Of the 15.9 percent of the students who indicated that they would marry immediately after completing their college education, only one-quarter (24.5 percent) were from "other institutions," and the remainder (75.5 percent) were from "public colleges."

Although over twice as many "public colleges" students suggested that perhaps they might never marry, the actual percentage of married students in each group was almost identical--51.1 percent for the "public colleges" and 48.9 percent for the "other institutions."

The degree of significant difference for this variable was .0179; therefore, the null hypothesis was rejected at the .02 level.

TABLE 9
SOLICITED FINANCIAL AID

CABI No. 40 Which of the following financial aids have you applied for or intend to apply for?

- 0. no response
- 1. scholarship or grant
- 2. part-time work on campus
- 3. loan
- 4. I have (or will have) a job off-campus
- 5. none of the above describes me very well

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	0	27	3	25	30	91	176
	Row Percent	0	15.3	1.7	14.2	17.0	51.7	57.1
	Column Percent	0	52.9	100.0	55.6	63.8	61.5	
	Total Percent	0	8.8	1.0	8.1	9.7	29.5	
Other Institutions	Number	14	24	0	20	17	57	132
	Row Percent	10.6	18.2	0	15.2	12.9	43.2	42.9
	Column Percent	100.0	47.1	0	44.4	36.2	38.5	
	Total Percent	4.5	7.8	0	6.5	5.5	18.5	
Column Total		14	51	3	45	47	148	308
Total Percent		4.5	16.6	1.0	14.6	15.3	48.1	100.0

Raw Chi Square = 23.32897

Significance = .0003

TABLE 10
MARRIAGE PLANS

CABI No. 38 With regard to marriage my tentative plans are to get married

0. no response
1. during college
2. as soon as I finish college
3. not before two or three years after college
4. perhaps never
5. I am married now

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	3	4	37	78	30	24	176
	Row Percent	1.7	2.3	21.0	44.3	17.0	13.6	57.1
	Column Percent	42.9	50.0	75.5	50.6	69.8	51.1	
	Total Percent	1.0	1.3	12.0	25.3	9.7	7.8	
Other Institutions	Number	4	4	12	76	13	23	132
	Row Percent	3.0	3.0	9.1	57.6	9.8	17.4	42.9
	Column Percent	57.1	50.0	24.5	49.5	30.2	48.9	
	Total Percent	1.3	1.3	3.9	24.7	4.2	7.5	
Column Total		7	8	49	154	43	47	308
Total Percent		2.3	2.6	15.9	50.0	14.0	15.3	100.0

Raw Chi Square = 13.56918

Significance = .0179

Variable No. 45 (See Table 11). Although half of the students predicted that they could achieve an average of a "B" grade in their college studies, two-thirds came from "public colleges" (66.9 percent) and the remainder (33.1 percent) were from "other institutions." Only 6.8 percent of the sample expressed doubts of failing or achieving less than a "C" average, while 16.2 percent felt they could earn mostly "A" grades.

The degree of significant difference for this variable was .0006; therefore, the null hypothesis was rejected at the .001 level.

Variable 30 (See Table 12). Two-thirds of all the students (67.5 percent) reported that the decision to attend college was their own decision. This total was composed of three-fifths "public colleges" students (60.9 percent) and the remainder represented "other institutions" students (39.4 percent). Close to one-fifth of the students (18.8 percent) attributed their decision to attend college to "parents or close relatives"--an even split of 50 percent for each group.

The degree of significant difference for this variable was .0011; therefore, the null hypothesis was rejected at the .01 level.

TABLE 11
ESTIMATED COLLEGE GRADES

CABI No. 45 With reference to making grades in college

- 0. no response
- 1. I think I can make mostly A's
- 2. I think I can make a B average
- 3. I think I can make the minimum necessary to graduate
- 4. I'm not sure if I can make a C average
- 5. I'm afraid I'll flunk out

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	3	27	103	31	8	4	176
	Row Percent	1.7	15.3	58.5	17.6	4.5	2.3	57.1
	Column Percent	21.4	54.0	66.9	44.9	80.0	36.4	
	Total Percent	1.0	8.8	33.4	10.1	2.6	1.3	
Other Institutions	Number	11	23	51	38	2	7	132
	Row Percent	8.3	17.4	38.6	28.3	1.5	5.3	42.9
	Column Percent	78.6	46.0	33.1	55.1	20.0	63.6	
	Total Percent	3.6	7.5	16.6	12.3	.6	2.3	
Column Total		14	50	154	69	10	11	308
Total Percent		4.5	16.2	50.0	22.4	3.2	3.6	100.0

Raw Chi Square = 21.73608

Significance = .0006

TABLE 12
INFLUENCE TO ATTEND COLLEGE

CABI No. 30 Which of the following influenced most your decision to go to college?

- 0. no response
- 1. my parents or close relatives
- 2. my classmates or friends
- 3. my teachers or counselors
- 4. myself
- 5. none of the above

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	0	29	5	2	126	14	176
	Row Percent	0	16.5	2.8	1.1	71.6	8.0	57.1
	Column Percent	0	50.0	71.4	66.7	60.6	70.0	
	Total Percent	0	9.4	1.6	.6	40.9	4.5	
Other Institutions	Number	12	29	2	1	82	6	132
	Row Percent	9.1	22.0	1.5	.8	62.1	4.5	42.9
	Column Percent	100.0	50.0	28.6	33.3	39.4	30.0	
	Total Percent	3.9	9.4	.6	.3	26.6	1.9	
Column Total		12	58	7	3	208	20	308
Total Percent		3.9	18.8	2.3	1.0	67.5	6.5	100.0

Raw Chi Square = 20.25438

Significance = .0011

Variable No. 32 (See Table 13). A total of 70.8 percent of the students (three-fifths or 59.2 percent from the "public colleges" group) maintained that their real reason for attending college was to "learn a good vocation or profession."

Just under 10 percent indicated a desire to "become a better person." Only 2.9 percent admitted that their attendance was to "satisfy my parents," and the same percentage indicated it was to "learn how to earn money."

The degree of significant difference for this variable was .0157; therefore, the null hypothesis was rejected at the .02 level.

Variable No. 31 (See Table 14). A total of 40.6 percent of the students sampled ("public colleges" represented 79.2 percent of this total) said that their main reason for choosing this college was that it was "close to my home." Another 20.8 percent (73.4 percent were students representing "other institutions") said it was that it had "a good general reputation."

Three-fifths (61.9 percent) of the 13.6 percent of students who chose this particular college because of its strong major were from the "public colleges" group. On the other hand, the "advice of someone who has attended this college" was indicated by 11.7 percent of the students--an almost perfect expected ratio of 55.6 percent for "public colleges" in comparison to 44.4 percent for "other institutions."

The degree of significant difference for this variable was .0000; therefore, the null hypothesis was rejected at the .0001 level.

TABLE 13
REAL REASON FOR ATTENDING COLLEGE

CABI No. 32 My real reason for going to college is to

- 0. no response
- 1. satisfy my parents
- 2. learn a good vocation/profession
- 3. become a better person
- 4. learn how to earn money
- 5. none of these

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	1	5	129	18	6	17	176
	Row Percent	.6	2.8	73.3	10.2	3.4	9.7	57.1
	Column Percent	7.7	55.6	59.2	62.1	66.7	56.7	
	Total Percent	.3	1.6	41.9	5.8	1.9	5.5	
Other Institutions	Number	12	4	89	11	3	13	132
	Row Percent	9.1	3.0	67.4	8.3	2.3	9.8	42.9
	Column Percent	92.3	44.4	40.8	37.9	33.3	43.3	
	Total Percent	3.9	1.3	28.9	3.6	1.0	4.2	
Column Total		13	9	218	29	9	30	308
Total Percent		4.2	2.9	70.8	9.4	2.9	9.7	100.0

Raw Chi Square = 13.98085

Significance = .0157

TABLE 14
REASON FOR CHOOSING THIS PARTICULAR COLLEGE

CABI No. 31 Which of the following most influenced you to choose the college that you plan to attend?

0. no response
1. the college has a good general reputation
2. the college is strong in the area of my major
3. low costs (tuition, fees, etc.)
4. advice of someone who has attended this college
5. the college is close to my home

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	4	17	26	10	20	99	176
	Row Percent	2.3	9.7	14.8	5.7	11.4	56.3	57.1
	Column Percent	25.0	26.6	61.9	40.0	55.6	79.2	
	Total Percent	1.3	5.5	8.4	3.2	6.5	32.1	
Other Institutions	Number	12	47	16	15	16	26	132
	Row Percent	9.1	35.6	12.1	11.4	12.1	19.7	42.9
	Column Percent	75.0	73.4	38.1	60.0	44.4	20.8	
	Total Percent	3.9	15.3	5.2	4.9	5.2	8.4	
Column Total		16	64	42	25	36	125	308
Total Percent		5.2	20.8	13.6	8.1	11.7	40.6	100.0

Raw Chi Square = 59.44739

Significance = .0000

Variable No. 48 (See Table 15). Three-quarters of the sample (75.3 percent) reported that they had not received a citation for a "moving violation" while driving a car. Three-fifths of the 15.9 percent of those students who said that they did not drive, however, came from the "other institutions" group. About three out of every four drivers who received one or two tickets came from the "public colleges" group.

The degree of significant difference for this variable was .0498; therefore, the null hypothesis was rejected at the .05 level.

Attitudinal Characteristics

Variable No. 101 (See Table 16). A total of 56.9 percent of the students indicated that they would like to have their own car, while 22.8 percent disagreed. Of the one-third of the students who "strongly agreed" with the statement of owning their own car, 60.6 percent came from the "public colleges" group. In responding to the "agree" alternative, however, the percentage ratio was almost reversed--54.9 percent representing the "other institutions" group.

A total of 68.4 percent of the 57 students who were undecided, came from the "public colleges" group. The "strongly disagree" alternative was chosen by slightly over one-half (56.5 percent) of the "other institutions" group.

The degree of significant difference for this variable was .0490; therefore, the null hypothesis was rejected at the .05 level.

TABLE 15
TRAFFIC CITATIONS

CABI No. 48 How many times have you received a ticket for a "moving violation" while driving a car?

- 0. no response
- 1. none
- 2. one
- 3. two
- 4. three or more
- 5. I don't drive

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	1	135	14	3	3	20	176
	Row Percent	.6	76.7	8.0	1.7	1.7	11.4	57.1
	Column Percent	100.0	58.2	73.7	75.0	100.0	40.8	
	Total Percent	.3	43.8	4.5	1.0	1.0	6.5	
Other Institutions	Number	0	97	5	1	0	29	132
	Row Percent	0	73.5	3.8	.8	0	22.0	42.9
	Column Percent	0	41.8	26.3	25.0	0	59.2	
	Total Percent	0	31.5	1.6	.3	0	9.4	
Column Total		1	232	19	4	3	49	308
Total Percent		.3	75.3	6.2	1.3	1.0	15.9	100.0

Raw Chi Square = 11.08078

Significance = .0498

TABLE 16
DESIRE TO OWN A CAR

CABI No. 101 I certainly would like to have my own car now even if I have to pay for it all myself.

- 0. no response
- 1. strongly agree
- 2. agree
- 3. uncertain
- 4. disagree
- 5. strongly disagree

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	5	63	32	39	27	10	176
	Row Percent	2.8	35.8	18.2	22.2	15.3	5.7	57.1
	Column Percent	83.3	60.6	45.1	68.4	57.4	43.5	
	Total Percent	1.6	20.5	10.4	12.7	8.8	3.2	
Other Institutions	Number	1	41	39	18	20	13	132
	Row Percent	.8	31.1	29.5	13.6	15.2	9.8	42.9
	Column Percent	16.7	39.4	54.9	31.6	42.6	56.5	
	Total Percent	.3	13.3	12.7	5.8	6.5	4.2	
Column Total		6	104	71	57	47	23	308
Total Percent		1.9	33.8	23.1	18.5	15.3	7.5	100.0

Raw Chi Square = 11.12263

Significance = .0490

Variable No. 92 (See Table 17). Of the 35.0 percent of the students who agreed that they did become fatigued rather easily, 67.6 percent came from the "public colleges" group. A total of 52.6 percent, however, disagreed with the statement--with close to an even split between the two designated groups. These results may be due to a higher percentage of "public colleges" students who live away from home and perhaps keep somewhat less regular hours, resulting in an increased susceptibility to fatigue.

The degree of significant difference for this variable was .0409; therefore, the null hypothesis was rejected at the .05 level.

Variable No. 109 (See Table 18). Close to three-quarters of the sample (73.4 percent) expressed positive sentiments about the results of their actions. Only 8.5 percent indicated dissatisfaction--1 percent of the "other institutions" group reported strong disagreement. Of the 17.5 percent who were not sure how they felt about the statement, "public colleges" respondents represented 75.9 percent of that total.

The degree of significant difference for this variable was .0089; therefore, the null hypothesis was rejected at the .01 level.

As indicated earlier, a total of 15 personal student characteristics and three attitudinal characteristics were identified as representing a significant difference at the .05 level of confidence when the responses of the two groups of students were compared. Therefore, the overall null hypothesis of no significant difference between secretarial science students at "public colleges" and secretarial science students at "other institutions" was rejected for the 18 identified CABI variables.

TABLE 17
EASILY FATIGUED

CABI No. 92 I tire easily.

- 0. no response
- 1. strongly agree
- 2. agree
- 3. uncertain
- 4. disagree
- 5. strongly disagree

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	2	12	61	19	67	15	176
	Row Percent	1.1	6.8	34.7	10.8	38.1	8.5	57.1
	Column Percent	100.0	85.7	64.9	52.8	50.4	51.7	
	Total Percent	.6	3.9	19.8	6.2	21.8	4.9	
Other Institutions	Number	0	2	33	17	66	14	132
	Row Percent	0	1.5	25.0	12.9	50.0	10.6	42.9
	Column Percent	0	14.3	35.1	47.2	49.6	48.3	
	Total Percent	0	.6	10.7	5.5	21.4	4.5	
Column Total		2	14	94	36	133	29	308
Total Percent		.6	4.5	30.5	11.7	43.2	9.4	100.0

Raw Chi Square = 11.58715

Significance = .0409

TABLE 18
PLEASED WITH MY ACTIONS

CABI No. 109 I'm happy with the way I'm doing things.

- 0. no response
- 1. strongly agree
- 2. agree
- 3. uncertain
- 4. disagree
- 5. strongly disagree

Group	Distribution	Student Responses						Row Total
		0	1	2	3	4	5	
Public Colleges	Number	2	36	84	41	13	0	176
	Row Percent	1.1	20.5	47.7	23.3	7.4	0	57.1
	Column Percent	100.0	57.1	51.5	75.9	56.5	0	
	Total Percent	.6	11.7	27.3	13.3	4.2	0	
Other Institutions	Number	0	27	79	13	10	3	132
	Row Percent	0	20.5	59.8	9.8	7.6	2.3	42.0
	Column Percent	0	42.9	48.5	24.1	43.5	100.0	
	Total Percent	0	8.8	25.6	4.2	3.2	1.0	
Column Total		2	63	163	54	23	3	308
Total Percent		.6	20.5	52.9	17.5	7.5	1.0	100.0

Raw Chi Square = 15.37701

Significance = .0089

Dropouts Versus Persisters

Samples and Treatments

The 308 secretarial science student responses from the College Auto-Biographical Inventory were divided into two groups. The persister group, consisting of 289 students who completed the academic year 1975-76, was compared with the dropout group, consisting of 19 students who withdrew from their colleges before the end of the 1975-76 academic year.¹

Although a total of 49 secretarial science students were identified as dropouts by their institutions, 28 of these students (for a variety of reasons) had not completed the CABI, and for reasons of confidentiality, two other students' names were withheld from this investigator. Three of the seven institutions participating in this study were eventually unable to identify dropout students by name.

Several statistical treatments were made on the data, including chi square tests² and three stepwise discriminant analyses³.

¹ These dropout students had completed the CABI earlier during the 1975-76 academic year and subsequently withdrew from their institutions.

² Crosstabulation Subprogram (Statistical Package for the Social Sciences, Vogelback Computer Center, Northwestern University), with analysis at Oregon State University. Crosstabulations Subprogram (Statistical Package for the Social Sciences, Version 6.02C, University of Pittsburgh), with analysis at the University of Lethbridge.

³ Stepwise Discriminant Analysis Subprogram (BMD07M, Health Sciences Computer Facility, UCLA), with analysis at Oregon State University. Discriminant Analysis using stepwise procedure criterion MAHAL and WILKS subprograms (Statistical Package for the Social Sciences, Version 6.02C, University of Pittsburgh), with analysis at the University of Lethbridge.

Chi Square Analyses

The initial phase of this aspect of the data analyses utilized a chi square statistical test involving all 110 CABI statements. The chi square test was employed in order to identify whether or not a significant difference existed between the dropout and persister groups based on student responses to the CABI statements.

The chi square test determines whether a significant difference exists between an observed number of responses falling into each category in comparison to an expected number based on the null hypothesis of no difference between the two populations (Siegel, 1956, pp. 42-47).

On the basis of this analysis, a total of 6 personal student characteristics and 12 attitudinal characteristics were identified as representing a significant difference at the .05 level of confidence when the two groups were compared.

Therefore, the overall null hypothesis of no significant differences between secretarial science dropout students and secretarial science persister students would be rejected for the 18 identified CABI variables. (A summary of these data is given in Tables 19 and 20, with detailed information in Appendix C).

TABLE 19
PERSONAL STUDENT CHARACTERISTICS -- DROPOUTS VERSUS PERSISTERS

<u>CABI Number</u>	<u>Statement</u>	<u>Chi Square</u>	<u>Level of Significance</u>
3	Marital status	12.5231	$p < .05$
10	Type of high school attended	29.8116	$p < .001$
25	Amount of business or commercial courses taken during high school	13.9140	$p < .02$
34	Planned length of college attendance	12.3438	$p < .05$
42	Feelings about college attendance	13.7040	$p < .02$
51	Degree of certainty about college major/career	18.5478	$p < .01$

TABLE 20
STUDENT ATTITUDES -- DROPOUTS VERSUS PERSISTERS

<u>CABI Number</u>	<u>Statement</u>	<u>Chi Square</u>	<u>Level of Significance</u>
56	Parents want me to choose a career I like	19.38456	$p < .01$
62	Family find more fault than they should	12.93831	$p < .05$
63	Received a raw deal from life	18.70163	$p < .01$
71	Lack of success due to others	18.22802	$p < .01$
77	Have wanted to leave home	19.71269	$p < .01$
81	Going to college was a difficult decision	14.92453	$p < .02$
83	During school have been sent to the principal	22.86422	$p < .001$
87	Family opposes my major/career	21.89383	$p < .001$
95	Home problems may cause interruption at college	14.42939	$p < .02$
96	Have always disliked regulations	12.27830	$p < .05$
97	Encountering problems recently	13.08364	$p < .05$
99	Must force myself to do school work	12.15495	$p < .05$

Discriminant Analysis

Another statistical test was then applied to the CABI variables using a discriminant function analysis technique.¹ Overall and Klett (1972, p. 280) state that discriminant function analysis:

is appropriate where samples of individuals have been drawn from several different populations and where p different quantitative scores are available for each individual. The p measurements are assumed to have a multivariate normal distribution with equal variance-covariance matrices within the several populations.

The method of multiple discriminant analysis results in reduction of the multiple measurements to one or more weighted combinations having maximum potential for distinguishing among members of the different groups.

Also, Wert, Neidt, and Ahmann (1954, pp. 263-264) explain that a discriminant function technique ". . . has received considerable use in ascertaining appropriate weights for a series of variables yielding maximum separation in two groups, each of which is assumed to be normally distributed."

Specifically, the subprogram DISCRIMINANT (Nie et al, 1975, pp. 434-467) performs discriminant analysis by entering all discriminating variables through a variety of stepwise methods selecting the "best" set of discriminating variables.

Twenty-nine variables² from the 110 statements in CABI were selected for a comparison of dropout and persister student characteristics and attitudes in order to determine which variables best differentiated the two groups.

¹ Originally developed by R. A. Fisher, "The Use of Multiple Measurements in Taxonomic Problems," Annals of Eugenics, 7:179-188, 1936.

² Variables selected--18 identified as being significantly different at the .05 level by a chi square test
--11 identified by the literature as representing areas of discrimination between the two groups.

Table 21 identifies the 29 variables and presents the means and standard deviation of both the dropout and persister groups. Also included in this table is an F value¹ which can be interpreted by comparing that calculated F value to a Distribution of F Table to determine whether or not a significant difference exists and at what level. The F statistic is used in the analysis of variance² where several means are being considered.

A total of 16 variables (13 of which were significant at the .01 level and 3 at the .05 level) was identified as having means sufficiently different from each other that the variation was not due to chance alone.

Table 29 presents the Within Groups Correlation Matrix. The data included in this matrix represents a table of intercorrelations (all possible correlations) among the 110 measures involved in this analysis. This is one of the first steps in detecting "common traits or dimensions that underlie many interocrelated variables." (Popham and Sirotnik, 1973, pp. 259-265).

A comparison of the computed " r " values was then made with a Table of Correlation Coefficients. With 306 degrees of freedom, a table value of .113 results in $p = .05$, and with a table value of .148, $p = .01$. According to Table 29, (See Appendix A, page 192) there are 137 independent intercorrelations with a total of 92 combinations being significant at the .01 level, indicating that the variables in this study are independent of each other.

¹ F statistic is a robust parametric statistical test designed to reveal the homogeneity of variance between these two groups by dividing the mean square within group into the mean square between group.

² Variance is the mean of the squared deviations (errors).

TABLE 21
SIGNIFICANCE OF DIFFERENCE BETWEEN DROPOUTS AND PERSISTERS
CLASSIFIED BY 29 CABI VARIABLES

CABI Variable	DROPOUTS ¹		PERSISTERS ²		F
	Mean	Standard Deviation	Mean	Standard Deviation	
3	2.4737	1.5409	1.6401	1.1616	8.7880**
7	1.2632	0.4524	1.9481	1.3797	4.6373*
10	1.6842	1.0029	1.3010	0.8636	3.4389
12	1.9474	0.9703	1.6713	1.0570	1.2277
13	2.1053	1.7287	2.1038	1.4516	0.0000
14	3.5789	1.9240	3.3702	1.7031	0.2634
15	2.0526	1.4710	2.1419	1.4157	0.0705
19	3.2105	1.2283	3.1003	1.4411	0.1059
25	2.3158	1.0569	3.1453	1.3016	7.3898**
30	2.9474	1.7151	3.3114	1.3869	1.1913
34	2.0526	1.1773	2.2491	0.7774	1.0585
39	1.5789	1.1698	1.5225	1.0576	0.0501

¹ n = 19

² n = 289

* p < .05
** p < .01

TABLE 21 (Continued)
SIGNIFICANCE OF DIFFERENCE BETWEEN DROPOUTS AND PERSISTERS
CLASSIFIED BY 29 CABI VARIABLES

CABI Variable	DROPOUTS ¹		PERSISTERS ²		F
	Mean	Standard Deviation	Mean	Standard Deviation	
42	3.9474	1.3112	3.2941	1.8200	2.3636
48	2.6842	1.8872	1.6886	1.4337	8.2426**
51	3.4211	1.2612	2.4844	1.2335	10.2520**
56	3.0526	1.3529	1.7924	1.2012	19.3187**
62	3.1579	1.3023	3.9100	1.0955	8.2038**
63	3.8421	1.2140	4.3979	0.8685	6.9138**
65	3.4737	1.3486	4.2353	1.0737	8.6758**
71	3.5263	1.4286	4.2457	0.9234	10.0003**
77	1.9474	1.1291	2.8893	1.2916	9.6143**
81	3.1579	1.0145	3.5156	1.3310	1.3200
83	3.6842	1.7967	4.3979	0.9740	8.3867**
87	3.6842	1.1572	4.3460	0.9417	8.5487**

¹ n = 19

² n = 289

* p < .05
** p < .01

TABLE 21 (Continued)
SIGNIFICANCE OF DIFFERENCE BETWEEN DROPOUTS AND PERSISTERS
CLASSIFIED BY 29 CABI VARIABLES

CABI Variable	DROPOUTS ¹		PERSISTERS ²		F
	Mean	Standard Deviation	Mean	Standard Deviation	
95	2.6842	1.2496	3.7509	1.2830	12.3601**
96	3.0000	1.1055	3.6332	1.0293	6.6868*
97	2.8947	1.1002	3.6298	1.2295	6.4467*
99	3.2105	1.3157	3.6609	1.0846	2.9913
104	2.4737	0.7723	2.2042	0.9700	1.4069

¹ n = 19

² n = 289

* p < .05
** p < .01

Discriminating Variables

The stepwise discriminant function analysis selects independent variables for entry into the analysis procedure on the basis of their discriminating power. The analysis process involves sequentially selecting the "next best" discriminator at each step and computing a set of variables which will be found to be almost as good as the full set of variables. As Overall and Klett (1972, p. 280) explain:

The first canonical variate, or discriminant function, is that single weighted composite which of all possible weighted composites provides maximum average separation between the groups relative to variability within the groups. More precisely, the first canonical variate is that particular artificial composite variable on which the sum of square differences among group means is maximally great relative to the within-group variance for the same weighted composite.

Table 22 summarizes the 12 steps that this computer program executed in generating variables that significantly differentiated between the dropout and persister groups at an F statistical level greater than 1.0. As can be readily determined from the table, CABI variable 56 (My parents want me to choose a career that will satisfy me.) entered the analysis at an F value of 19.31871, highly significant at the .01 level of confidence.

TABLE 22
SUMMARY OF STEPWISE DISCRIMINANT ANALYSIS
ON 29 CABI VARIABLES

<u>Step Number</u>	<u>Variable Entered</u>	<u>F to Enter</u>
1	56	19.31871
2	51	8.16416
3	48	7.07838
4	77	6.33792
5	3	5.99484
6	83	4.10344
7	19	4.20636
8	71	2.44113
9	96	1.60942
10	10	1.55435
11	7	1.18762
12	30	1.13763

Discriminant Function Coefficients

After the 12 steps had been computed, the F level of the next higher variable was insufficient to enhance the predictor value of the discriminant function equation. The resulting discriminant function coefficients are presented in Table 23. Included in this table are the Unstandardized Discriminant Function Coefficients (which are used in the regression equation) and the Standardized Discriminant Function Coefficients (which represent the relative contribution of its associated variable to that function).

According to Overall and Klett (1972, p. 292), the practice of explaining the nature of the discriminant function by examining the relative magnitude of the weighting coefficients may be somewhat hazardous because the magnitudes of the coefficients are dependent upon the units of measurement involved. Therefore, in order to remove the effect of the differences in units of measurement, the discriminant function coefficient is multiplied by the standard deviation of that particular variable to which the weight is applied. The resulting product provides a basis of relative magnitude of coefficients which can then be compared to accurately determine the degree of contribution that each variable makes to the composite discriminant function. The Standardized Discriminant Function Coefficients, listed on Table 23, indicate that CABI variable 56 was the best single predictor of differences between the dropout and persister groups. This is also consistent with its highest F level entry into the analysis table. Variable 30, the last to enter the regression equation, has the lowest magnitude of the coefficients. The sign of the coefficient merely indicates whether the variable is making a positive or negative contribution.

TABLE 23
CONTRIBUTION OF 12 CABI VARIABLES TO THE DISCRIMINATION
BETWEEN DROPOUTS AND PERSISTERS

<u>CABI Variable</u>	<u>Unstandardized Discriminant Function Coefficients</u>	<u>Standardized Discriminant Function Coefficients¹</u>
3	0.25493	0.30648
7	-0.10699	-0.14454
10	0.16986	0.14878
19	0.20484	0.29238
30	-0.09428	-0.13282
48	0.20797	0.30810
51	0.23254	0.29151
56	0.31863	0.39709
71	-0.15144	-0.14757
77	-0.17433	-0.22672
83	-0.23108	-0.24333
96	-0.18094	-0.18881
Constant	0.45653	

¹ Relative contribution of its associated variable to that function.

The Unstandardized Discriminant Function Coefficients, also listed in Table 23, are multiplied by the raw values of the associated variables to arrive at a discriminant score. The desired discriminant function equation is in the general form of:

$$Y = a_1x_1 + a_2x_2 + \dots + a_px_p$$

where a_1, a_2, \dots, a_p are the weighting coefficients to be applied to the p original scores for each individual.

The Discriminant Function Coefficient for each of the 12 variables are presented in Table 23, as the Unstandardized Discriminant Function Coefficients. The discriminant scores for each dropout and persister may be computed with these Discriminant Function Coefficients and the Constant Term. The equation for these computations would be:

$$\begin{aligned} Y = & (0.25493)x_1 + (-0.10699)x_2 + (0.16986)x_3 + (0.20484)x_4 + \\ & (-0.09428)x_5 + (0.20797)x_6 + (0.23254)x_7 + (0.31863)x_8 + \\ & (-0.15144)x_9 + (-0.17433)x_{10} + (-0.23108)x_{11} + (-0.18094)x_{12} \\ & + 0.45653 \text{ (as shown in Table 23).} \end{aligned}$$

The point of separation between the dropouts and the persisters is set at 1 on the equation scale. If the score has a positive value of 1 or more, the student would be classified as a dropout. The higher the calculated value, the more likely the student will become a dropout. On the other hand, if the calculated score is less than 1 or is negative, the student would be classified as a persister. The larger the negative score, the more likely the student will stay in college.

As Nie et al (1975, p. 442) explain, "In discriminant function analysis, each group (as measured by its centroid) is treated as a point, and each discriminant function is a unique (orthogonal) dimension describing the location of that group relative to the others."

The centroids, as calculated for the two groups by utilizing the Discriminant Function Coefficients, are Dropouts 1.67659, and Persisters -0.11023. See Appendix D for a plot of the Territorial Map which indicates the parameters and means for the two groups based on the Discriminant Function Coefficients. Also, Appendix E presents the group parameters and the mean for the dropout students as determined by the

Discriminant Function Coefficient, and Appendix F presents the group parameters and the mean for the persister students as determined by the Discriminant Function Coefficients.

Group Membership Classification

Combined with the analytical use of discriminant analysis is a powerful classification technique.¹ Nie et al (1975, p. 445) explain that classification is "the process of identifying the likely group membership of a case when the only information known is the case's values on the discriminating variables." Table 24 depicts the coefficient values generated for the two classification function coefficients for the dropout group and for the persister group.

The following two equations, which produce discriminant scores from the 12 variables identified earlier, are useful in computing values which identify individual student membership in either the dropout or persister group. The equation to compute the dropout classification would be:

$$Y = (2.01755)x_1 + (0.46246)x_2 + (1.94948)x_3 + (1.89623)x_4 + \\ (1.61517)x_5 + (1.21858)x_6 + (3.80125)x_7 + (2.24677)x_8 + \\ (4.26904)x_9 + (0.36807)x_{10} + (3.28756)x_{11} + (1.43143)x_{12} + \\ (-37.50875) \text{ as shown in Table 24.}$$

¹ Classification Function--the traditional derivation of these functions are computed from the pooled within-groups' covariance matrix and the centroids for the discriminating variables. The resulting classification coefficients are then multiplied by the raw variable values, added together, and attached to a constant. (Nie et al, 1975, p. 445)

TABLE 24
CLASSIFICATION FUNCTION COEFFICIENTS

<u>CABI Variable</u>	<u>Dropout</u>	<u>Persister</u>
3	2.01755	1.46018
7	0.46246	0.69638
10	1.94948	1.57811
19	1.89623	1.44837
30	1.61517	1.82130
48	1.21858	0.76388
51	3.80125	3.29283
56	2.24677	1.55012
71	4.26904	4.60014
77	0.36807	0.74922
83	3.28756	3.79278
96	1.43143	1.82703
Constant	-37.50875	-36.79456

A total of 78.9 percent (15 out of 19) of the students were accurately classified as dropout students by using this technique.

The equation to compute the persister classification would be:

$$Y = (1.46018)x_1 + (0.69638)x_2 + (1.57811)x_3 + (1.44837)x_4 + \\ (1.82130)x_5 + (0.76388)x_6 + (3.29283)x_7 + (1.55012)x_8 + \\ (4.60014)x_9 + (0.74922)x_{10} + (3.79278)x_{11} + (1.82703)x_{12} + \\ (-36.79456) \text{ as shown in Table 24.}$$

A total of 82.7 percent (239 out of 289) of the students were correctly identified as persister students using this technique. The percentage of "grouped" cases correctly classified was 82.47 percent. (See Table 25). This means that approximately one in five students would have discriminant scores that would place that individual into the wrong group.

TABLE 25
PREDICTION RESULTS FROM CLASSIFICATION FUNCTION COEFFICIENTS

<u>Actual Group</u>	<u>Number of Cases</u>	<u>Predicted Group Membership</u>	
		<u>Dropout</u>	<u>Persister</u>
Dropout	19	15 (78.9%)	4 (21.1%)
Persister	289	50 (17.3%)	239 (82.7%)

(Percent of "grouped" cases correctly classified: 82.47%)

States Reasons For Student Attrition

A total of 49 secretarial science students were identified by their respective institutions as withdrawing prior to the end of the 1975-76 academic year. The reasons for the student attrition, which is summarized in Table 26, were obtained from administrative and instructor records, personal phone calls, or personal interviews with the students. Although 12 stated reasons by the students for their early exit from the various secretarial programs across the province have been identified, the actual classification of these reasons into identified areas is not quite as definitive as the summary would make it appear. There was an overlapping of the students' stated reasons and the almost impossible task of accurately separating "cause" and "effect" situations.

The predominant reason for withdrawing from the college secretarial programs, as stated by 22 percent of the students themselves, was to obtain employment. In fact, approximately one-half of these students were employed within one month--many at the time they actually left the institution. However, further investigation indicated that there were many extenuating circumstances which may have prompted the students in their decision to leave college and seek employment. Included were such things as health problems, academic problems, lack of finances, and domestic or family relationship problems. Although employment was given as the reason for leaving the program, in some cases this reason was the logical result of and not the actual basis for the decision to withdraw.

Approximately 14 percent of the students who left the program indicated that they were transferring to another institution. Some planned to continue studies at the university level, others planned to continue with secretarial programs at other institutions, and a few of the students indicated they were having academic problems and would continue their studies at a level of training that was more appropriate for them.

TABLE 26
DROPOUTS' STATED REASONS FOR WITHDRAWING FROM
THE SECRETARIAL SCIENCE PROGRAM

<u>Reason</u>	<u>Number</u>	<u>Percentage</u>
Obtained employment	11	22.45
Transferred to another institution	7	14.29
Domestic reasons	7	14.29
Serious academic problems	4	8.16
Administrative terminations	4	8.16
Personal reasons	4	8.16
Started program late	3	6.12
Dissatisfied with courses or program	2	4.08
Serious financial problems	2	4.08
Health problems	2	4.08
Lack of accommodation	1	2.04
Original intention	1	2.04
No stated reason	1	2.04

Domestic reasons, as stated by 14 percent of the students, included a broad area of family and home responsibilities. Examples included in this category were such things as imminent marriage, incompatibility of academic studies and family responsibilities, disruption of family environment, and pregnancy.

Although fewer than 10 percent of students actually cited academic problems as their main reason for withdrawing, as noted earlier, this problem was evident with a number of students who indicated that it was a major factor in much of their expressed discontent.

Of the 8 percent who were asked to leave (administrative termination), one-half of the students were identified as having violated institutional attendance policies, while reasons for the other terminations were kept confidential.

Less than 5 percent of the students cited financial hardship as the reason for withdrawing, although a number of others did identify this aspect as a matter of concern during their college training.

Approximately 10 percent of the students became dropouts for personal reasons, while one student indicated that her occupational commitment allowed for only one semester of training at the present.

V. SUMMARY OF THE FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Summary of the Problem

The increased demand by the business world for trained secretaries is continually increasing. The need to help fill this gap between supply and demand has resulted in an ever-expanding secretarial program that is now being offered by numerous post-secondary institutions and business education departments across the nation.

Associated with the "open door" policy with its many inherent pitfalls and the apparently unsatiated need for more secretarial personnel, the dream for many people, who realistically or otherwise plan a career as a secretary, comes to an abrupt halt with the early termination and subsequent withdrawal from the numerous secretarial training programs. Although the action of withdrawal from a program of studies cannot be accurately assessed or measured in practical terms of dollars and cents or in decreased potential fulfillment of the individual student involved, the abrupt cessation of studies on behalf of the attrition student does have an impact on the institution specifically and society in general. As to what degree this impact is of a negative nature, is open to conjecture.

Therefore, the need to have detailed information about secretarial students in Alberta--personal characteristics, attitudes, and reasons for attrition--is the basis for this investigation.

Purpose of the Study

The purpose of this study was multifold:

- 1) To describe in some detail the secretarial science students who attend post-secondary non-university institutions in Alberta in relation to their (a) personal and demographic characteristics and (b) their attitudes and reactions to a variety of current topics.
- 2) To compare the responses of the secretarial students to a number of questions and statements on the basis of the type of institutions they attended--"public colleges" versus "other institutions."

- 3) To determine whether or not identifiable differences do exist between the secretarial dropout students and the secretarial persister students.
- 4) To determine the reasons why secretarial students in Alberta withdraw from secretarial programs.

Extent and Nature of the Study

The data collected for analyses in this investigation came from responses of 308 secretarial science students representing seven selected post-secondary institutions in Alberta. These students completed the College Auto-Biographical Inventory, a 110 forced-choice personal and attitudinal inventory.

The results were key punched and processed by computer through a series of specially written and commercially available statistical programs. Besides obtaining frequency counts and percentage distributions, chi square statistical analyses and discriminant function analyses were obtained from the solicited student responses.

In addition, follow-up procedures were used (including instructor and administrative records, telephone calls, and personal interviews) to obtain attrition information about the reasons the secretarial students withdrew from the program. A documented presentation, including tables, figures, and an accompanying descriptive narrative summary, was then prepared and appears as the findings of this study.

Student Personal Characteristics and Attitudes

The literature indicates that although an accurate assessment of "typical" community college students is difficult to make, evidence suggests that their characteristics extend on a broad continuum scale from one extreme to the other. The students' ages range from 18 to over 60 years; they come from rich as well as poor families; they come for initial training or for retraining; they possess a wide range of academic abilities, interests, and levels of motivation; they represent all religious faiths, racial backgrounds, and ethnic minorities; they are full-time as well as part-time students; and although males outnumber females, all are seeking widely differing, but for the most part, very specific goals.

Academically, as a group the community college students tend to predominantly come from the lower half of the high school population, although individual exceptions do occur. Approximately three-fourths of the students are 18 years of age, with over 90 percent 25 years old or younger. The younger students, on the whole, represent the majority of full-time students, while the older students more often attend on a part-time basis or utilize the evening program. Approximately four out of five students are in their first year of college study. On the whole, men usually outnumber women 55 to 45 percent, although in some cases the ratio may be as high as five to three.

Socioeconomically, the majority of community college students represent the middle and lower income families, and the lower white-collar and blue-collar occupational areas. The majority of the parents do not hold college degrees and did not graduate from high school. The most often stated reason for attending college, as given by the students themselves, is to increase social mobility and to obtain a better occupation than their fathers.

Although a relatively low percentage of the students indicated that finances were a major problem in continuing their studies, investigation shows that one of the dominant reasons for students to choose community colleges was because of their relatively low tuition costs and the close proximity to their homes. Two-year college students tend to finance their own education much more frequently than their four-year counterparts. Recent figures indicate that approximately only one in five students attending two-year institutions estimated their parental income exceeded \$20,000 annually.

As a group, community college students reflect lower self-confidence in academic, intellectual, motivational, and leadership areas than did four-year college students. However, the two-year college group, taken as a whole, exhibited higher ability in athletic, artistic, and manual dexterity areas. The community college students tend to be stronger in the non-academic areas (more conventional and practical in their outlook on life and less tolerant, independent, and theory oriented) when compared to four-year college students who tend more often to excel in the traditional academic and verbal areas.

In general, the two-year college students exhibit more concern for practical considerations (low cost and easy accessibility) in choosing a post-secondary institution than they do for the academic reputation of that institution. In any event, graduates of these institutions indicate that they were pleased with their experiences and would choose that method of training again, if the opportunity presented itself.

Although there is not a consensus upon what effect a two-year college education has in shaping opinion and attitudes of students, it does appear, however, that of all the college students, the two-year community college students exhibit the least influence of change.

It does appear that parents and the home environment contribute a significant degree of influence to the student's decision of a college major, occupational aspirations, and eventual career choice. Occupational areas, including business and clerical areas, semi-professional fields, and engineering are high on the priorities of two-year college student's program selections.

Only a relatively small fraction of the students actually realize their original intentions of transferring to four-year institutions. Excellent practical-oriented training programs at the community college level combined with an almost insatiable demand for skilled workers by the business world results in many students modifying their educational plans by opting for the world of work.

Student Attrition

Student attrition in educational circles has always caused controversy, perplexity, and concern, particularly in institutions operating on the "open door" concept.

Although a consensus has not been reached as to the reasons for early withdrawal or the resulting impact it has on both the student and the institution, the majority of experts express the opinion that the phenomenon produces negative ramifications.

Persistence on the part of the students to continue their studies through to their actual conclusion is influenced by the home environment--parental support, encouragement, and expectations. In families where this support is lacking, student attrition becomes much more evident.

Certain individual characteristics that a student possesses may indicate a propensity for that student to withdraw. For example, lack of motivation, lack of academic ability, lack of goal definition, or lack of commitment by the student may all result in an unsuccessful post-secondary educational experience. However, attrition and its associated problems is not just limited to the already identified areas because it also is a symptom of the academic elite, the highly motivated student, both males and females alike, the rich as well as the poor, and the upper as well as lower socioeconomic levels of society.

Institutional characteristics also influence the dropout rate, especially when students encounter campus environments in which they experience difficulties in identification. This situation may arise because of an incongruence with institutional expectations and those of the student, unfavorable campus experiences, or lack of adjustment to campus life, faculty, curricula, or student mores.

Attrition rates vary both within institutional departments and between institutions themselves. Dropout percentages may range from a low of fewer than 10 percent to a high of 80 percent. The average, however, is somewhere between 25 and 50 percent for the majority of two-year post-secondary institutions. As has been stated earlier, the reasons for attrition can be conveniently categorized into two main areas--self-related and college-related factors. Identified in the literature were over thirty "reasons" for student attrition at the community college level.

Secretarial Science Students

Although there is very little published information about secretarial science students per se, the available literature describing community college students in general somewhat reflects this group as well.

Females comprise over 95 percent of all secretarial students. At least three quarters of these students were single, with 80 percent being under 25 years of age. The vast majority of these students had enrolled in the one-year secretarial training program.

Of all the courses in the secretarial program, shorthand appears to be the best single course responsible for the highest failure rate--for both first- and second-year students. Dropout rates in the secretarial programs parallel those for the two-year institutions as a whole. As in many vocational or occupational programs the demand for trained personnel generally exceeds the supply; therefore, many secretarial students take employment prior to formally completing their educational programs. In addition, attrition students in this area also encounter similar problems to those described for withdrawal students in general. Full-time employment, marriage, and domestic responsibilities appear to account for over two-thirds of the attrition students. Dropout secretarial students and persister students, for the most part, are quite similar in many of their individual characteristics.

Although prediction of success in a secretarial program is at best uncertain, the high school GPA, the college GPA, shorthand GPA, and English scores appear to be the best indicators of success.

Major Findings

Summary of Student Characteristics

The secretarial science student sample, consisting of 26.55 percent of the provincial secretarial science student population attending post-secondary non-university institutions in Alberta, provided the following information.

Of the secretarial students surveyed, 99 percent were females whose average age was 21.84 years, three-quarters were under 20 years of age, two-thirds were single.

Two-thirds of the fathers and about one-half of the mothers did not graduate from high school. Two-thirds of the fathers held occupational or vocational jobs. About one-half of the mothers were not employed outside of the home.

The females in this study indicated a wide pattern of dating habits--at least one-half reported dating quite regularly.

Four-fifths of the students attended a small public high school, while one-half of the students came from a rural area or a small town.

Two-thirds of the students reported earning at least a "B" average in high school, although only about one-third said they were in the top one-half of their class.

Just under one-half of the students did not participate in any extra-curricular activities during their high school years. Three-fifths of the students reported working for pay during their senior year--one-fifth working up to eight hours per week.

About nine out of every ten students reported taking at least one "business or commercial" course during their high school years, but one-third of the students indicated that they did not take a foreign language during that same period.

About three-fifths of the students entered college within less than a year after completing high school.

Over one-half of the students preferred to live in a "private apartment or house," although two-fifths of them actually resided within a radius of 10 miles from the institution they were attending. Three-quarters of the students lived within 150 miles of their institutions.

About three-fifths of the students planned to finance their college education through parents or personal savings. Although three-fifths of the students did not intend to work while going to college, just under one-quarter felt they would work up to 20 hours per week on a part-time basis.

Approximately two-thirds of the students "decided on their own" that they would attend college in order to "learn a good vocation or profession." Three-fifths of them chose that particular institution either because it was close to their home or because it had a good general reputation. Nine out of ten students were pleased with their choice of institution. Three-quarters of the students indicated that they were reasonably certain that they had chosen the correct college major.

Although less than one-fifth of the students felt they could achieve an "honors" grade in college, only 4 percent felt they would not be successful in the program. One-third of the students indicated a desire to continue into a second year of education, although slightly over

one-half planned only one year of secretarial training.

Two-fifths of the students reported that they did not smoke, while one-half of them felt that drugs were used as an "escape."

Summary of Student Attitudes

Family relationships, as reported by four-fifths of the secretarial students, were positive, although only one-third of the students indicated a desire to confide more in their parents.

Three-fourths of the students felt their parents wanted them to choose a career that as students they would be satisfied with. Four-fifths of the students felt they had family support for their secretarial choice.

As for high school experiences, two-fifths of the students responded that good grades came easily. About four-fifths of them indicated that they did not have particular problems with teachers or principals while in high school.

The sampled students indicated that they were healthy (four out of five students) and that the majority of them rested well and did not have disturbing problems.

Although one-half of the students admitted to procrastinating at times, four-fifths of them claimed that they completed their term assignments in the allotted time. About one-half reported that they had a desire to be doing "something active."

Three-fifths of the students indicated that they did not have problems adhering to regulations or following "set schedules."

One-half of the students did not think that there was too much criticism of the "drug scene."

Three-quarters of the students indicated having positive experiences with law enforcement agencies, and over four-fifths disagreed that they had received a "raw deal" from life. Seven of ten students expressed positive sentiments about their daily experiences.

Approximately one-half of the respondents disagreed with the statement that too many young girls were on the "pill."

Three-fifths of the students found it necessary to "stand up" for what they think is right.

When asked to respond to statements about a two-year college education, three-fifths of the students reported that the decision to attend was not difficult. About seven in ten said that they felt attending college would be enjoyable, while four-fifths of the students were pleased with their choice of institutions.

As for difficulties encountered by the students who were enrolled in the secretarial programs, only one-third felt that "home problems" might interrupt their college education. Seven of ten students did not admit to having problems with their courses, while one-third admitted that they were achieving at their own level of ability.

Summary of the Comparison Between "Public Colleges" and "Other Institutions"

The student responses to the 110 CABI statements from the three "public colleges" (Grande Prairie Regional College, Lethbridge Community College, and Mount Royal College) were compared with the same student responses from the "other institutions" (Northern Alberta Institute of Technology, Keyano College, and Alberta Vocational Centers at Grouard and Lac La Biche) utilizing a chi square statistical test to determine whether or not any significant difference existed between the two groups.

A total of 18 variables were identified (15 personal characteristics and 3 attitudinal) as rejecting the null hypothesis of no significant difference at the .05 level of confidence.

The personal characteristics included:

<u>CABI Statement</u>	<u>Statement</u>
10	Type of high school attended
11	Number of students in the graduating high school class
13	Distance from parent's home to college
18	Length of time out of school before entering college
33	Date of applications for college admittance
34	Planned length of stay in college
36	Preference for living accommodation while in college
39	Number of hours of anticipated employment while attending college
40	Anticipated financial aid
38	Tentative marriage plans

<u>CABI Statement</u>	<u>Statement</u>
45	Anticipated grades in college
30	Influences on the decision to attend college
32	Real reason for going to college
31	Most influenced the decision to attend this institution
48	Number of "moving violations" while driving

The attitudinal responses included:

<u>CABI Number</u>	<u>Statement</u>
92	I tire easily
101	I would like to have my own car
109	I am happy with the way I am doing things

Dropouts Versus Persisters

A chi square statistical test was conducted on the student responses to the 110 CABI statements comparing the 19 secretarial dropout students with the 289 secretarial persister students.

The chi square test identified 18 variables (six personal characteristics and 12 attitudinal characteristics) which rejected the null hypothesis of no significant difference between the secretarial dropout students and the secretarial persister students at the .05 level of confidence.

The personal characteristics included:

<u>CABI Number</u>	<u>Statement</u>
3	Marital status
10	Type of high school attended
25	Number of business or commercial courses taken during high school
34	Planned length of college attendance
42	Feelings about college attendance
51	Degree of certainty about college major or career

The attitudinal characteristics included:

<u>CABI Number</u>	<u>Statement</u>
56	Parents want me to choose a career I like
62	Family find more fault than they should
63	Received a raw deal from life
71	Lack of success due to others
77	Have wanted to leave home
81	Going to college was a difficult decision
83	During school have been sent to the principal
87	Family opposes my major or career
95	Home problems may cause interruption at college
97	Encountering problems recently
99	Must force myself to do school work

The Within Groups Correlation Matrix identified a total of 137 independent intercorrelations with 92 combinations being significant at the .01 level of confidence and 45 combinations being significant at the .05 level of confidence, indicating that the variables in this study were independent of each other.

Discriminant Analysis

A stepwise discriminant function analysis was conducted on 29 CABI variables--18 identified by a chi square analysis, significant at the .05 level of confidence, and 11 variables identified by the literature as having discriminating characteristics between dropout and persister groups.

Of the 29 variables entered into this analysis, the following 16 variables were identified as discriminating between the dropout and persister groups at an F value significant at the .05 level of confidence (13 significant at the .01 level and 3 at the .05 level). CABI Number: 3, 7, 25, 48, 51, 56, 62, 63, 65, 71, 77, 83, 87, 95, 96, and 97. All were significant at the .01 F ratio level except the second and last two variables.

The stepwise discriminant function analysis also identified the variables which best discriminated between the dropout and persister groups by sequentially selecting the "next best" variable until the "computed equation" was incapable of improving its discriminatory power.

A total of 12 variables were selected in this process. The following CABI variables, listed in sequence of their entry into the analysis table, were identified: 56, 51, 48, 77, 3, 83, 19, 71, 96, 10, 7, and 30.

The resulting discriminant function equation was computed.

$$Y = (0.25493)x_1 + (-0.10699)x_2 + (0.16986)x_3 + (0.20484)x_4 + (-0.09428)x_5 + (0.20797)x_6 + (0.23254)x_7 + (0.31863)x_8 + (-0.15144)x_9 + (-0.17433)x_{10} + (-0.23108)x_{11} + (-0.18094)x_{12} + 0.45653$$

The discriminant scores for each dropout and persister may be computed with these Discriminant Function Coefficients and the Constant Term. The point of separation between the dropouts and the persisters is set at 1, with a calculated positive value of 1 or more indicating a dropout student. The greater the value, the more likely that student would be a dropout. Calculated values of less than 1 or negative values indicate a persister student. The greater the negative score, the more likely that student would be a persister.

Group centroids, using the Discriminant Function Coefficients, were calculated for the dropout students (value = 1.67659) and for the persister students (value = -.011023). See Appendix C.

Classification of Group Membership

Two classification discriminant functions were computed, and when individual student scores were calculated using these two equations the overall "grouped" cases correctly classified was 82.47 percent. This means that four out of every five students would be accurately classified as being either a potential persister or dropout student.

The discriminant scores for the dropout students, computed on the basis of the following equation, correctly identified 15 of the 19 attrition students for a prediction rate of 78.9 percent.

$$\begin{aligned}
 Y = & (2.01755)x_1 + (0.46246)x_2 + (1.94948)x_3 + (1.89623)x_4 + \\
 & (1.61517)x_5 + (1.21858)x_6 + (3.80125)x_7 + (2.24677)x_8 + \\
 & (4.26904)x_9 + (0.36807)x_{10} + (3.28756)x_{11} + (1.43143)x_{12} + \\
 & (-37.50875)
 \end{aligned}$$

The discriminant scores for the persister students, computed on the basis of the following equation, correctly identified 239 of the 289 persister students for a prediction rate of 82.7 percent.

$$\begin{aligned}
 Y = & (1.46018)x_1 + (0.69638)x_2 + (1.57811)x_3 + (1.44837)x_4 + \\
 & (1.82130)x_5 + (0.76388)x_6 + (3.29283)x_7 + (1.55012)x_8 + \\
 & (4.60014)x_9 + (0.74922)x_{10} + (3.79278)x_{11} + (1.82703)x_{12} + \\
 & (-36.79456)
 \end{aligned}$$

Stated Reasons for Student Attrition

A total of 12 distinct attrition categories were identified from the stated reasons given by the 49 secretarial science students as to why they became dropouts. The following three reasons accounted for 51.03 percent of the student attrition.

Obtained employment (22.45 percent) was the most frequently cited reason for discontinuing the secretarial program, although there is little clear evidence to determine whether that was the actual reason for leaving or rather the only viable alternative remaining as a result of the action already taken. Transferred to another institution and domestic reasons each accounted for 14.29 percent of the stated dropout reasons.

Serious academic problems, administrative terminations, and personal reasons each accounted for 8.16 percent, or an additional one-quarter of all the attrition students. The remaining one-quarter of the students indicated such problems as starting the program late, dissatisfaction with courses or the program, or serious problems including finances, health, or accommodation.

Conclusions

Within the limitations of this study, the following major conclusions seem relevant:

1. The secretarial science students attending post-secondary non-university institutions in Alberta, by and large, share a high percentage of common personal characteristics and attitudes with their peers across Canada and the United States.
2. Significant differences were found between the responses of secretarial students attending "public colleges" and those attending "other institutions." A total of 18 variables (15 personal and 3 attitudinal) of the 110 CABI statements were identified as rejecting the null hypothesis at the .05 level of confidence.
3. Significant differences were found between the responses of secretarial dropout students and secretarial persister students. A total of 18 variables (6 personal characteristics and 12 attitudinal) of the 110 CABI statements were identified as rejecting the null hypothesis at the .05 level of confidence.
4. Significant differences were found between the responses of secretarial dropout students and secretarial persister students when subjected to a stepwise discriminant function analysis. A total of 16 variables (out of 29 entered for analysis) were identified as having an F value significant at the .05 level of confidence (5 were personal characteristics and 11 were attitudinal).
5. The stepwise discriminant function analysis identified 12 variables (out of 29 entered for analysis) with F values capable of discriminating power between secretarial dropout students and secretarial persister students. The resulting regression equation which was calculated provided Discriminant Function Coefficients and a Constant Term capable of plotting individual student scores and representative group centroids.

6. Two classification equations were computed, providing Discriminant Function Coefficients and a Constant Term, which accurately classified four out of five students into either persister or dropout groups.
7. Three main reasons account for just over one-half of the attrition secretarial students--employment (22 percent), transfer to another institution, and domestic reasons. Serious academic problems, administrative terminations, and personal reasons accounted for another one-quarter of the dropout students.
8. There appears to be very little diagnostic work currently underway in the various post-secondary institutions in Alberta which attempts to identify, from a heterogeneous and frequently high-risk population which enters via an "open door" concept, potential dropout students and endeavors through individual systematic remedial programs to rectify that possibility.
9. Accurate and complete attrition statistics, including the identification of students who withdraw and their reasons for doing so, are, for the most part, very inadequate or non-existent both from the Department of Advanced Education level through to the individual institutions themselves.

Recommendations

Based on the analyses of the data presented in this investigation, the following recommendations are tendered in order to give direction for improved practices in the various secretarial science programs which ultimately will result in a substantial reduction in the existing excessive attrition rate.

Recommendation No. 1 -- Faculty and Administrative Awareness

Improvements in the dropout rate will more likely be realized if the personnel involved in the educational process of the secretarial students are better informed as to the potential hazards and pitfalls that the students face in their training programs. In-service programs

should be designed which will better acquaint the secretarial science faculty with student characteristics, attitudes, and associated attrition problems. The secretarial science department personnel should endeavor to better coordinate the existing remedial and counselling services that are in existence and/or expand the opportunities for closer liaison between the two areas.

Recommendation No. 2 -- Screening and Placement Testing

It is recommended that all secretarial students be administered screening and placement tests as part of their admission procedures. The obtained results could provide an opportunity to identify individual strengths and weaknesses of each secretarial student at a time when maximum improvement in deficient areas could occur.

Also, students coming from high school business education programs have wide-ranging levels of secretarial skills because of variations in student academic achievement and evaluation standards of the various institutions. Therefore, unless there is close liaison between individual high school secretarial departments and the college secretarial department, placement of the students in advanced work in the community college secretarial program may result in unnecessary failure or course attrition.

Recommendation No. 3 -- Early Identification of Potential Dropouts

Through a systematic screening of all the full-time secretarial students early in the academic program, potential dropout students could be identified and all the resources available in the college should then be utilized in the form of remedial action in order to help eliminate the problems.

The Discriminant Function equation which resulted from this investigation is capable of accurately predicting the student's propensity for group membership in four out of five cases. However, continual review and updating of the equation should occur in order to increase its prediction accuracy.

Recommendation No. 4 -- Faculty Advisement of Students

The secretarial science faculty should be appointed as academic advisers for an equal number of students in the secretarial program. The roster, containing the names of both students as well as the advisers, should be made available for all groups to utilize.

Faculty members should be encouraged to refer students with academic problems to their individual advisers. The instigation of coordinated liaison between the secretarial faculty and the student services personnel and/or learning resource centers should provide the students with ample opportunity to explore possible solutions to everyday problems as they occur.

Recommendation No. 5 -- Student Orientation

A formalized student orientation session, consisting of two or three hours of demonstration and explanation, should be conducted at the beginning of each term in order to adequately acquaint students with college life expectancies and realities. Topics to be covered could include expected standards of achievement; efficient methods of taking notes; maximum utilization of study time; introduction of the faculty advisers; and detailed explanations (possibly actual tours) of library, learning resource center, and remedial support services available.

Recommendation No. 6 -- Provision for Individual Differences

Whenever possible, the secretarial science program should seek to incorporate maximum allowances for individual differences. This approach may involve a variety of instructional methods (such as audio-visual aids, independent learning courses or modules, and remedial programs) as well as specifically designed laboratory-type classrooms which enable students with identified problems to work concurrently, if possible, on remedial activities.

Recommendation No. 7 -- Formalized Withdrawal Procedures

An exit interview with either the academic adviser or a student counsellor could provide the institution with much valuable information that now virtually does not exist. Although it is literally impossible

to interview all attrition students (some just do not bother coming back to the institution) a vast majority of them do formally withdraw in one manner or another. A person who is somewhat familiar with the withdrawing student, and using a standardized exit form, could obtain very valuable information about circumstances leading to attrition itself.

Recommendation No. 8 -- Continuous Dropout Research

This investigation, which focused on secretarial science student characteristics, attitudes, and attrition, should only be the beginning of an on-going institutional and/or departmental research program designed to identify salient characteristics which lead to a student propensity for withdrawal.

The computed Discriminant Function equation provides a basis for early identification of potential student attrition; however, a continual evaluation and revision program must be implemented in order to achieve some measure of improvement in the holding power of students enrolled in the program. The actual measure of success can only be recognized in a lower secretarial science dropout rate.

Implications for Further Study

This research paper, including the CABI instrument, could be effectively utilized in a program designed to early identify potential secretarial science attrition students in a two-year post-secondary educational institution.

A comparison of results from a similar study conducted on a longitudinal basis and covering more than one academic year could help verify the findings of this investigation.

The possibility exists that the 110 CABI statements could be greatly reduced and still retain its group discriminating qualities. Further statistical analysis would be required in order to disprove this assumption.

BIBLIOGRAPHY

- Abbas, R. D. Interpersonal values of the junior college and university student. NDEA Institute. University of Missouri. Columbia, MO. 1968. Educational Resources Information Center. ED 023 390.
- _____. Academically disadvantaged minority group students in public two-year colleges. Pennsylvania State Department of Education. Harrisburg, PA. 1971. Educational Resources Information Center. ED 057 775.
- Aiken, J. A. Comparison of junior college withdrawees. University of Missouri. Columbia, MO. 1968. Educational Resources Information Center. ED 023 389.
- Alfred, Richard L. 1971-72 student attrition: Antecedent and consequent factors. Report MJCD-S-102-72. Metropolitan Junior College District. Kansas City, MO. 1972. Educational Resources Information Center. ED 070 435.
- Alfred, Richard L. Student attrition: Strategies for action. Community College Conference Proceedings, Kansas City. Metropolitan Junior College District, May 9-10, 1973.
- Alfred, Richard L. and Mary F. Good. The status of women in higher education and the professions: Metropolitan Junior College District 1971-72. Metropolitan Junior College District. Kansas City, MO. October, 1972. Educational Resources Information Center. ED 070 436.
- American College Testing Program. College student profiles: Norms for the act assessment. American College Testing Program. Iowa City, Iowa, 1966.
- American College Testing Program. The two-year college and its student. Iowa City, Iowa, 1969.
- American Council on Education Office of Research Staff. The American freshman: National norms for fall 1972. ACE Research Reports. Vol. 7, No. 5, December, 1972.
- Anderson, Bert D. Comparison of enrolled and non-enrolled applicants for Modesto Junior College, fall 1966. Modesto Junior College. Modesto, CA. September, 1967. Educational Resources Information Center. ED 014 303.
- Anderson, H. D. Whose children attend junior colleges? Junior College Journal. January, 1934.

- Anthony, D. M. The relationship of certain socioeconomic and academic factors to student choice of occupation and program in the public junior college. Unpublished doctoral dissertation. University of Texas. 1964. Educational Resources Information Center. ED 019 088.
- Astin, Alexander W. College dropouts: A national profile. ACE Research Reports. Vol. 7, No. 1. Washington, 1972.
- Astin, Alexander W. The college environment. American Council on Education. Washington, 1968.
- Astin, Alexander W. An empirical characterization of higher educational institutions. Journal of Educational Psychology. Vol. 53, 1962.
- Astin, Alexander W. Personal and environmental factors associated with college dropouts and high aptitude students. Journal of Educational Psychology. Vol. 55, 1964.
- Astin, Alexander W. Preventing students from dropping out. Jossey-Bass Publishers. San Francisco, 1975.
- Astin, Alexander W. Who drops out of college? American Council on Education. Washington, 1972a.
- Astin, Alexander W. Who goes where to college? Science Research Associates. Chicago, Illinois, 1965.
- Astin, A. W. and J. L. Holland. The environmental assessment technique: A way to measure college environments. Journal of Educational Psychology. No. 52, 1961.
- Astin, A. W., M.R. King, J. M. Light and G.T. Richardson. The American freshman: National norms for fall 1974. Cooperative Institutional Research Program. American Council on Education. University of California, Los Angeles, 1975.
- Astin, A. W. and R. J. Panos. The educational and vocational development of college students. American Council on Education. Washington, 1969.
- Astin, A. W., R. J. Panos and J. A. Creager. National norms for entering college freshmen--fall, 1966. ACE Research Reports. American Council on Education. Washington, 1967.
-
- _____. Attrition and retention of first-time, full-time students in two-year and baccalaureate degree programs, class of 1973. Report No. 4-74. State University of New York, Albany. October, 1974. Educational Resources Information Center. ED 098 902.

- Baird, Leonard L. Focusing on measures of college environments. The College Board Review. No. 86. Winter, 1972-73.
- Baird, Leonard L. The undecided student--how different is he? American College Testing Program. Iowa City, IA. 1967. Educational Resources Information Center. ED 017 230.
- Baird, L. L., J. M. Richards and L. R. Shevel. A description of graduates of two-year colleges in The two-year college and its students. The American College Testing Program. Iowa City, IA. 1969.
- Bayer, Alan E. College dropouts: Factors affecting senior college completion. Sociology of Education. Vol. 41, No. 3, 1968.
- Bayer, A. E., J. T. Royer and R. M. Webb. Four years after college entry. ACE Research Reports. Vol. 8, No. 1. Washington, March 1973.
- Behm, H. D. Characteristics of community college students: A comparison of transfer and occupational freshmen in selected midwestern colleges. Unpublished dissertation. University of Missouri. 1967.
- Berg, Ernest H. Selected factors bearing on the persistence and academic performance of low ability students in four California Junior Colleges. 1965. Educational Resources Information Center. ED 031 192.
- Best, John W. Research in education. Prentice-Hall, Inc. Englewood Cliffs, New Jersey, 1970.
- Bird, G. V. Preparation for advanced study in The public junior college (N. B. Henry, Editor). Fifty-fifth yearbook of the National Society for the Study of Education. University of Chicago Press. Chicago, IL. 1956.
- Black, Hubert P. The efficiency of the American college testing program and high school grades for predicting the achievement of Chesapeake college students. 1969. Educational Resources Information Center. ED 029 626.
- Blai, Boris. Characteristics of Harcum Junior College students. Harcum Junior College. Bryn Mawr, PA. 1969. Educational Resources Information Center. ED 034 521.
- Blai, Boris. Sustained student "holding power" at Harcum. IRR 71-25. Harcum Junior College. Bryn Mawr, PA. September, 1971.

- Blai, Boris. Two-year college dropouts--why do they leave? Who are they? How many? Harcum Junior College. Bryn Mawr, PA. March, 1972. Educational Resources Information Center. ED 058 879.
- Blanchfield, W. C. College dropout identification: A case study. Journal of Experimental Education, Vol. 40, 1971.
- Blocker, Clyde E. Purposes, growth, and transition of the community college. National Business Education Quarterly. December, 1967.
- Blocker, C. E., R. H. Plummer and R. D. Richardson. The two-year college. A social synthesis. Prentice-Hall. Englewood Cliffs, NJ. 1965.
- Bogue, Jesse P. The community college. McGraw-Hill Book Company. New York, 1950.
- Bosetti, R. A. The Alberta system of post-secondary non-university education: Master plan number one. Alberta Colleges Commission. Edmonton, Alberta, September, 1972.
- Bosetti, R. A. Personal interview. Department of Advanced Education. Edmonton, Alberta, 1974.
- Bossen, D. A. and C. W. Burnett. What happens to the withdrawal student? Junior College Journal. June-July, 1970.
- Bossone, R. M. Understanding junior college students. Junior College Journal. May, 1965.
- Bourland, W. Selected characteristics of an Illinois community college. Unpublished analysis of ACT Test Data for students at Prairie State College. Prairie State College. Chicago Heights, IL. 1969.
- Bowen, H. R. Higher education: A growth industry? Educational Record. Vol. 55, No. 3, 1974.
- Bowen, Cathleen and Edward Myers. A manual for conducting student attrition studies in institutions of post-secondary education. Technical Report No. 74. National Center for Education Management Systems at Western Interstate Commission for Higher Education. Boulder, CO. March, 1976. Educational Resources Information Center. ED 119 604.
- Brawer, Florence B. A comparison of personality characteristics of community college student dropouts and persisters. ERIC Clearinghouse for Junior College Topical Paper No. 37. University of California, Los Angeles. December, 1973. Educational Resources Information Center. ED 083 980.

- Brawer, Florence B. The concept of ego strength and its measurement through a word association technique. Unpublished doctoral dissertation. University of California, Los Angeles, 1967.
- Brawer, Florence B. The person: A conceptual synthesis. ERIC Clearinghouse for Junior Colleges Topical Paper No. 11. University of California, Los Angeles, 1970. Educational Resources Information Center. ED 037 210.
- Brightman, Richard W. When and why students quit community college courses. Coast Community College District. Costa Mesa, CA. May, 1974. Educational Resources Information Center. ED 091 031.
- Bromley, Ann. Two attrition studies at Santa Fe community college. Paper presented at American Educational Research Association Meeting. New Orleans, LA. February, 1973. Educational Resources Information Center. ED 075 022.
- Brown, Roberta D. Student characteristics and institutional impact of the large publicly controlled vs the small private institution. College and University. Spring, 1967.
- Bruner, Jerome S. Toward a theory of instruction. Harvard University Press. Cambridge, MA. 1966.
- Burn, Barbara B. Higher education in nine countries. McGraw-Hill Book Company. New York, 1971.
- Butler, R. R. Differences in need-press variables as perceived by university and junior college students. NDEA Institute. University of Missouri. Columbia, MO. 1968. Educational Resources Information Center. ED 023 386.
- Campbell, Gordon. The community college in Canada. Junior College Journal. November, 1969.
- Campbell, Gordon. Community colleges in Canada. Ryerson Press. McGraw-Hill of Canada. Toronto, Ontario, 1971.
- Carnegie Foundation for the Advancement of Teaching. More than survival. Jossey-Bass Publisher. San Francisco, 1975.
- Chase, C. I. The college dropout: His high-school prologue. Bulletin of the National Association of Secondary School Principals. Vol. 54, 1970.
- Chickering, A. W. and W. Hannah. The process of withdrawal. Liberal Education. Vol. 55, No. 4, 1969.

- Ciampa, Bartholomew J. College attrition: A cause appraisal technique. Nasson College. Springvale, ME. 1972. Educational Resources Information Center. ED 077 338.
- Clark, B. R. Open door college: A case study. McGraw-Hill Company. New York, 1960.
- Cleveland, Raymond E. and Philip T. West. The community college and avocational education: In the pursuit of pleasure principle. Community College Review. March, 1975.
- Cohen, Arthur M. Dateline '79: Heretical concepts for the community college. Glencoe Press. Beverley Hills, CA. 1969.
- Cohen, Arthur M. The relationship among student characteristics, changed instructional practices and student attrition in junior college. Final Report. 1969a. Educational Resources Information Center. ED 032 074.
- Cohen, A. M. and F. B. Brawer. Student characteristics: Personality and dropout propensity. ERIC Clearinghouse for Junior Colleges Monograph No. 9. American Association of Junior Colleges. Washington, 1970. Educational Resources Information Center. ED 038 130.
- Cohen, Arthur M., F. B. Brawer and Aikin Connor. Selected personality correlates of junior college dropouts and persisters. 1969. Educational Resources Information Center. ED 027 883.
- Cohen, Arthur M., F. B. Brawer and John Lombardi. A constant variable. Jossey-Bass Publisher. San Francisco, 1971.
- Coker, D. Diversity of intellectual and non-intellectual characteristics between persisting students and non-persisting students among campuses. Office of Education Report BR-6-2728. 1968. Educational Resources Information Center. ED 033 645.
- Colleges Act (The). Government of the Province of Alberta. Chapter 56 of the Revised Statutes of Alberta. 1970.
- Congdon, J. D. Personality factors and capacity to meet curriculum demands. Personnel and Guidance Journal. Vol. 42, 1964.
- Cooley, W. W. and S. J. Becker. The junior college student. Personnel and Guidance Journal. January, 1966. Educational Resources Information Center. ED 012 609.
- Coombs, Phillip Hall. The world educational crisis; a systems analysis. Oxford University Press. New York, 1968.

- Cope, Robert. An investigation of entrance characteristics related to types of college dropouts. Office of Education Report BR-0-1-068. Washington, 1971. Educational Resources Information Center. ED 052 749.
- Cope, Robert and William Hannah. Revolving college doors. John Wiley and Sons. New York, 1975.
- Cornett, Joe D. and Weldon Beckner. Introductory statistics for the behavioral sciences. Charles E. Merrill Publishing Company. Columbus, OH. 1975.
- Cowhig, James D. Why do they leave college? School Review. Autumn 1963.
- Crandall, Deborah. General education for the occupational student: A survey of the literature. Community College Review. June, 1975.
- Cross, K. P. Beyond the open door. Jossey-Bass Publisher. San Francisco, 1971.
- Cross, K. P. The junior college student: A research description. Educational Testing Service. Princeton, NJ. 1968. Educational Resources Information Center. ED 024 354.
- Cross, K. P. Occupationally oriented students. Junior College Research Review. November, 1970. Educational Resources Information Center. ED 043 328.
- Dave, J. P. Evaluation of the developmental program: Fall 1967-68. Central YMCA Community College. Chicago, IL. 1968. Educational Resources Information Center. ED 024 357.
- Davis, Billy H. The community junior college experience as perceived by students who have withdrawn. 1970. Educational Resources Information Center. ED 046 386.
- Dennison, J. D. and G. Jones. A study of the characteristics and subsequent performance of Vancouver city college students who transferred to the University of British Columbia in September 1967. Vancouver City College. Vancouver, British Columbia, 1968. Educational Resources Information Center. ED 026 061.
- DeVecchio, Richard C. Characteristics of non-returning community college freshmen. Journal of College Student Personnel. September, 1972.
- Dickinson, J. Alvin and Vernon A. Musselman. The secretarial curriculum in the community college. National Business Education Quarterly. December, 1967.

- Dixon, W. J. (Ed.) BMD:Biomedical computer programs. University of California Press. Berkely, CA. 1973.
- Drake, Sandra L. (Ed.) 1975 community, junior, and technical college directory. American Association of Community and Junior Colleges. Washington, 1975.
- Dressel, P. L. and I. J. Lehman. Values of college students in Learning and the professor. O. Milton and E. J. Shoben (Editors). Ohio University Press. Athens, OH. 1968.
- Dupuis, P. The community college in Canada, present status/future prospects. College Administration Project. The University of Alberta. Edmonton, Alberta, 1971.
- Eagle, Norman. Dropout prediction at an urban community college following open admission. Paper presented at the annual meeting of the American Education Research Association. New Orleans, LA. February, 1973. Educational Resources Information Center. ED 073 753.
- Eckland, Bruce K. College dropouts who came back. Harvard Educational Review. Summer, 1964a.
- Eckland, Bruce K. A source of error in college attrition studies. American Journal of Sociology. No. 70, 1964b.
- Eckland, Bruce K. Social class and college graduation: some misconceptions corrected. American Journal of Sociology. No. 70, 1964c.
- Educational Testing Service. Comparative Guidance and Placement Program. Program Summary Statistics. College Entrance Examination Board. Princeton, NJ. 1968.
- Falkenberg, Eugene Edward. A survey of the success of junior college transfer students to the University of Alberta, Edmonton, and the University of Calgary from public junior colleges in the province of Alberta, Canada. Doctoral dissertation. University of Montana. Missoula, MT. 1969.
- Farine, A. Demographic and social accounting: A follow-up on the withdrawals from Quebec colleges. Paper presented at the annual meeting of the American Educational Research Association. New Orleans. February 25-March 1, 1973. Educational Resources Information Center. ED 074 889.
- Faunce, Patricia Spencer. Personality characteristics and vocational interests related to the college persistence of academically gifted women. Journal of Counseling Psychology. January, 1968.

- Fenske, R. H. Who selects vocational-technical post-high school education in The two-year college and its students. The American College Testing Program. Iowa City, IA. 1969.
- Fenske, R. H. and C. S. Scott. The changing profile of college students. American Association for Higher Education. Research Report No. 10. 1973.
- Fenske, R. H., C. S. Scott and J. F. Carmody. College student migration. ACT-RR-54. American College Testing Program. Iowa City, IA. December, 1972. Educational Resources Information Center. ED 079 396.
- Fields, Ralph R. The community college movement. McGraw-Hill Book Company. New York, 1962.
- Fisher, Ronald A. The precision of discriminant function. The Annals of Eugenics. No. 10, 1940.
- Fisher, Ronald A. Statistical methods for research workers. Hafner Publishing Company. New York, 1973.
- Flanagan, J. C. and W. W. Cooley. Project talent: One year follow-up studies. USOE Cooperative Research Project No. 2333. University of Pittsburgh. Pittsburgh, PA. 1966.
- Flanagan and Associates. Project talent: The identification, development, and utilization of human talents. The American high school student. Final Report. Cooperative Research Project No. 635. U. S. Office of Education. University of Pittsburgh. Pittsburgh, PA. 1964.
- Flannery, John and Associates. Final report from the ad hoc committee to study attrition at Miami-Dade Community College, North Campus. Miami-Dade Junior College. Miami, FL. May, 1973. Educational Resources Information Center. ED 085 052.
- Ford, C. R. Institutes of technology in Canada. University Affairs. April, 1960.
- Ford, Donald H. and Hugh B. Urban. College dropouts. Successes or failures? in The college dropout and the utilization of talent. L. Pervin et al (Editors). Princeton University Press. Princeton, NJ. 1966.
- Fox, L. J. A study of relationships between grades and measures of scholastic aptitude, creativity, and attitudes in junior college students. Unpublished doctoral dissertation. University of Southern California. 1967.

- Fretwell, David Herbert. Analysis of selected factors, relating to academic success, utilization of training and return home of Latin American students who have graduated from the California state college system. Unpublished doctoral dissertation. Oregon State University. Corvallis, OR. 1972.
- Froomkin, J. Changing credential objectives of students in post-secondary education. U. S. Department of Health, Education, and Welfare. Contract No. 0574257. Washington, 1974.
- Gell, Robert L. and David F. Bleil. Where have all the freshmen gone? Office of Institutional Research. Montgomery Community College. Rockville, MD. 1973. Educational Resources Information Center. ED 091 025.
- Gell, Robert L., Suzanne C. Harkness and David F. Bleil. A follow-up study of freshmen who left Montgomery College after just one semester of attendance. Office of Institutional Research and Analysis. Montgomery Community College. Montgomery County, MD. 1974. Educational Resources Information Center. ED 097 054.
- Gelso, Charles J. and David Rowell. Academic adjustment and the persistence of students with marginal academic potential. Journal of Counseling Psychology. Vol. 14, No. 5, 1967.
- Gleazer, Edmund J. An introduction to junior colleges in American Junior Colleges. American Council on Education. Seventh Edition. Washington, 1967.
- Gleazer, Edmund J. Junior colleges in the United States: Trends and directions. National Business Education Quarterly. December, 1967a.
- Gleazer, Edmund J. This is the community college. Houghton Mifflin Company. Boston, MA. 1968.
- Gold, Ben K. Persistence of L.A.C.C. students entering in fall, 1967. Los Angeles City College. Los Angeles, CA. September, 1970. Educational Resources Information Center. ED 042 446.
- Goldberg, I. and J. T. Dailey. Research on academic degree projections: The identification and development of talents of 1960 high school graduates. Unpublished manuscript. Project Talent. Palo Alto, CA. August, 1963.
- Goulden, Cyril H. Methods of statistical analysis. John Wiley and Sons. New York, 1952.

- Greenberg, Barry. Predicting who will withdraw during their first semester of attendance at Miami-Dade Junior College, South Campus. Department of Educational Research. Miami-Dade Junior College. Miami, FL. June, 1972. Educational Resources Information Center. ED 078 830.
- Grieve, D. E. A study of student attrition. Part I. Cuyahoga Community College. Cleveland, OH. 1970. Educational Resources Information Center. 038 976.
- Grout, D. R. Psychological security-insecurity of Illinois Central College students. Unpublished master's thesis. Illinois State University. 1969. ED 037 196.
- Gum, H. Sanford. A study of dropout propensity of selected college students. Unpublished doctoral dissertation. Oregon State University. Corvallis, OR. 1973.
- Hackman, R. and W. Dysinger. Commitment to college as a factor in student attrition. Sociology of Education. Vol. 43, 1970.
- Hahn, Ralph W. In defence of dropping out: A forthright refutation of community college dogma. Community College Review. Winter, 1974.
- Hakanson, J. W. Selected characteristics, socioeconomic status, and levels of attainment of students in public junior college occupation centered education. Unpublished doctoral dissertation. University of California. Berkeley, CA. 1967. Educational Resources Information Center. ED 013 644.
- Hall, George L. Behind the bramble bushes: A mid-century history of the community college. Community College Review. Fall, 1974.
- Hall, L. H. Personality and attitude variables among achieving and nonachieving college of the Sequoias freshmen from different socioeconomic backgrounds. 1968. Educational Resources Information Center. ED 027 016.
- Hall, Toni L. El Paso Community College attrition studies, fall 1971-fall 1974. El Paso Community College. El Paso, TX. 1975. Educational Resources Information Center. ED 110 114.
- Handbook of Data and Definitions in Higher Education. Joint committee on data and definitions in higher education. Sponsored by the American Association of Collegiate Registrars and Admissions Officers. 1962.
- Hannah, William. Withdrawal from college. The Journal of College Student Personnel. November, 1969.

- Hanson, Gary R. and Ronald G. Taylor. Interaction of ability and personality: Another look at the drop-out problem in an institute of technology. *Journal of Counseling Psychology*. November, 1970.
- Harlacher, E. L. The community dimension of the community college. Prentice-Hall Publisher. Englewood Cliffs, NJ. 1969.
- Harris, Robin S. Changing patterns of higher education in Canada. University of Toronto Press. Toronto, Ontario, 1966.
- Haven, E. W. The freshmen norms sample for the general examination of the college-level examination program. Statistical Report SR-67-32. Educational Testing Service. Princeton, NJ. June, 1967.
- Havighurst, R. J. and B. L. Neugarten. Society and education. Allyn and Bacon. New York, 1957.
- Heath, Elinor K., Frederick S. Lee and Douglas S. MacDonald. Retention/attrition--preventing college dropouts. August, 1973. Educational Resources Information Center. ED 091 013.
- Heist, P and Associates. Omnibus personality inventory. Psychological Corporation. New York, 1968.
- Hills, J. R. Transfer shock--the academic performance of the junior college transfer. *Journal of Experimental Education*. Spring, 1965. Educational Resources Information Center. ED 010 740.
- Hoffer, Eric. The ordeal of change. Harper and Row. New York, 1963.
- Holmstrom, Engin I. Low achievers: Do they differ from "typical" undergraduates? ACE Research Reports, Vol 8, No. 6. American Council on Education. Washington, September, 1973.
- Holmstrom, Engin I. Low-income students: Do they differ from "typical" undergraduates? ACE Research Reports, Vol. 8, No. 5. American Council on Education. Washington, September, 1973a.
- Holmstrom, Engin I. Older freshmen: Do they differ from "typical" undergraduates? ACE Research Reports Vol 8, No. 7. American Council on Education. Washington, October, 1973b.
- House, F. Wayne. Business education and the two-year college. *National Business Education Quarterly*. December, 1967.
- Hoyt, D. P. and L. Munday. Academic description and prediction in junior colleges. ACT Research REports. American College Testing Program. Iowa City, IA. February, 1966.

- Hoyt, D. P. and L. A. Munday. Academic description and prediction in junior colleges in The two-year college and its students. The American College Testing Program. Iowa City, IA. 1969.
- Huck, Schayler W., William H. Cormier and William G. Bounds. Reading statistics and research. Harper and Row. New York, 1974.
- Hughes, Harold G., Robert N. Burnham and Charles L. Stanley. A follow-up study of discontinuing students at Grossmont College. Grossmont College. El Cajon, CA. 1968. Educational Resources Information Center. ED 019 085.
- Hulbert, J. E. Sex discrimination in vocational office occupations programs. Business Education Forum. December, 1976.
- Hunt, Beverly English. Characteristics, perceptions and experiences of married women students at Lansing Community College, 1965. Unpublished doctoral dissertation. Michigan State University. 1966.
- Iffert, R. W. Retention and withdrawal of college students. U. S. Department of Health, Education and Welfare. Bulletin No. 1. Washington, 1958.
- Illinois Board of Higher Education. Admission and retention of students. Report of Master Plan Phase Three. Springfield, IL. June, 1969.
- _____. Illinois Public Community College statewide occupational student follow-up study: Phase I preliminary report. Illinois Community College Board. Springfield, IL. June, 1975. Educational Resources Information Center. ED 110 731.
- Isaacson, Arlene. College student attrition: An annotated bibliography. City University of New York. Brooklyn, NY. New York Brooklyn College. Brooklyn, NY. January, 1974. Educational Resources Information Center. ED 101 633.
- Jacob, P. E. Changing values in colleges. Harper Bros. New York, 1957.
- Jaffe, A. J. and W. Adams. Academic and socioeconomic factors related to entrance and retention at two and four year colleges in the late 1960's. Columbia University. New York, 1970. Educational Resources Information Center. ED 049 679.
- Jaski, E. B. The impact of the junior college environment on student values and retention. Unpublished doctoral dissertation. University of Chicago. Chicago, IL. 1969.
- Jones, E. S. The probation student: What is he like and what can be done about it? Journal of Educational Research. Vol. 49, 1955.

- Jones, Richard H. The effects of grouping practices in a community junior college on student dropout, achievement and attitudes. Dissertation Abstracts International. Vol 30 (11-A), 1970.
- Jones, Gordon and John D. Dennison. A comparative study of persister and non-persister college students. Vancouver City College, Langara Campus. Vancouver, British Columbia, June, 1972. Educational Resources Information Center. ED 062 975.
- Johnson, B. Lamar. Islands of innovation expanding: Changes in the community college. Glencoe Press. Beverley Hills, CA. 1969.
- Johnson, F. H. Brief history of Canadian education. McGraw-Hill. Toronto, Ontario, 1968.
- Kamens, D. The college "charter" and college size: effects on occupational choice and college attrition. Sociology of Education. Vol. 44, 1971.
- Karabel, J. Community colleges and social stratification. Harvard Educational Review. November, 1972.
- Katz, Joseph. Education in Canada. Archon Books. Hamden, CT. 1974.
- Katz, J. and Associates. No time for youth. Jossey-Bass Publishers. San Francisco, 1968.
- Kerlinger, Fred N. and Elazar J. Pedhazur. Multiple regression in behavioral research. Holt, Rinehart and Winston, Inc. New York, 1973.
- Kester, Donald L. The lesson from the three-year NORCAL attrition study: Many of the potential dropouts can be helped. NORCAL Project, Phase III. Final Report. July, 1971. Educational Resources Information Center. ED 057 779.
- Kievit, Mary Bach. Expectation for learning environments and personality factors of students compared to dropouts from 2-year institutions. Paper presented at the 1971 annual meeting of the American Educational Research Association. New York, February, 1971. Educational Resources Information Center. ED 047 667.
- Kintzer, Frederick C. Middleman in higher education. Jossey-Bass Publisher. San Francisco, 1973.
- Knoell, Dorothy M. A critical review of research on the college dropout in L. Pervin et al (Editors) The college dropout and the utilization of talent. Princeton University Press. Princeton, NJ. 1966.

- Knoell, Dorothy M. People who need college: A report on students we have yet to serve. American Association of Junior Colleges. Washington, 1970. Educational Resources Information Center. ED 041 573.
- Knoell, D. M. and L. L. Medsker. Articulation between two-year and four-year colleges. USOE Cooperative Research Project No. 2167. Center for Research and Development in Higher Education. University of California. Berkeley, CA. 1964.
- Knoell, D. M. and L. L. Medsker. From junior to senior college: A national study of the transfer student. American Council on Education. Washington, 1965.
- Koos, Leonard V. The community college student. University of Florida Press. Gainesville, FL. 1970.
- Korin, Basil P. Statistical concepts for the social sciences. Winthrop Publishers. Cambridge, MA. 1975.
- Kubie, Lawrence S. The ontogeny of the dropout problem in Pervin et al (Editors) The college dropout and the utilization of talent. Princeton University Press. Princeton, NJ. 1966.
- Kunhart, W. E. and G. Roleder. Counseling techniques with potential drop-out students in junior colleges. Journal of Counseling Psychology. Summer, 1964.
- Lamke, T. A. Personality and teaching success. Journal of Experimental Education. December, 1951.
- Lavin, D. The prediction of academic performance. Russell Sage Foundation. New York, 1965.
- Lawhorn, Janie T. A study of persisters and dropouts in the secretarial science program at Miami-Dade junior college. Unpublished doctoral dissertation. University of Miami. Coral Gables, FL. 1971.
- Lee, Glenda E. Reverse transfer: The "retread function" of community colleges. Paper presented at the annual meeting of the American Educational Research Association, March 30-April 3. Washington, April, 1975. Educational Resources Information Center. ED 104 471.
- LeMay, Morris. Descriptive research bulletin: The academic aptitude and achievement of the class of 1972, School of Business and Technology, Oregon State University. Counseling and Testing Center. Oregon State University. Corvallis, OR. November, 1973.

- Lembesis, A. A study of students who withdrew from college during their second, third, or fourth years. Unpublished doctoral dissertation. University of Oregon. Eugene, OR. 1965.
- Leslie, Larry L., S. B. Martorana and Jonathan D. Fife. Financing post-secondary education through students. Windfall profit or recession for community colleges? Community College Review. March, 1975.
- Levenson, Edgar A. Some socio-cultural issues in the etiology and treatment of college dropouts in L. Pervin et al (Editors) The college dropout and the utilization of talent. Princeton University Press. Princeton, NJ. 1966.
- Lightfield, E. Timothy. They came back! Student attrition at the community college. Mercer County Community College. Trenton, NJ. August, 1974. Educational Resources Information Center. ED 095 937.
- Locke, Charles K. Small group counseling compared with freshman orientation classes in reducing attrition of freshman junior college students. Dissertation Abstracts International. Vol. 31 (4-A), 1970.
- MacDonald, John B. Higher education in British Columbia and a plan for the future. University of British Columbia. Vancouver, 1962.
- MacMillan, Thomas F. Establishing a predictive model for early recognition of potential community college student attrition. 1969. Educational Resources Information Center. ED 044 102.
- MacMillan, Thomas F. NORCAL: The key is cooperation. Junior College Journal. May, 1970a.
- MacMillan, Thomas F. NORCAL Project: Phase I. Final report. Northern California Cooperative Research Project on Student Attrition. Napa College. Napa, CA. 1969. Educational Resources Information Center. ED 031 240.
- MacMillan, Thomas F. NORCAL Project: Phase II. Final report. Northern California Cooperative Research Project on Student Attrition. Napa College. Napa, CA. 1970. Educational Resources Information Center. ED 039 879.
- MacMillan, Thomas F. and Donald M. Kester. Promises to keep: NORCAL impact on student attrition. Community and Junior College Journal. February, 1973.

- Mahon, Jack. Follow-up study of stop-ins and stop-outs, 1965-1973. Office of Institutional Research. Bucks County Community College. Newtown, PA. December, 1974. Educational Resources Information Center. ED 101 788.
- Maier, Robert O. Some variations in probabilities of success, failure, and dropout. Seminar Paper. Spring, 1971. Educational Resources Information Center. ED 050 720.
- Marks, E. Student perceptions of college persistence and their intellectual, personality and performance correlates. Journal of Educational Psychology. August, 1967.
- Martin, Marie Y. Recent trends in community college occupational education. Community College Review. Winter, 1974.
- Matson, Jane E. Characteristics of students who withdraw from a public junior college. Unpublished doctoral dissertation. Stanford University. June, 1955.
- Matson, Jane E. Emphasis. Junior College Journal. September, 1966.
- Maudal, Gail R., James N. Butcher and Paul A. Mauger. A multivariate study of personality and academic factors in college attrition. Journal of Counseling Psychology. Vol. 21, No. 6, 1974.
- Mayhew, Lewis B. A rending of accounts in G. Kerry Smith (Editor) Stress and campus response. Jossey-Bass Publisher. San Francisco 1968.
- McCallum, H. N. A comparative study of male junior college graduates who made initial or deferred decisions to major in vocational/technical programs. Unpublished doctoral dissertation. University of California. Berkeley, CA. 1967. Educational Resources Information Center. ED 022 453.
- McGeever, J. and R. L. Burton. A survey of dropouts and discontinuing students and their attitudes toward selected aspects of the junior college program. Palomar College. San Marcos, CA. 1965. Educational Resources Information Center. ED 013 642.
- McMurry, Kermit R. Perceptions: Causes for attrition/retention: The student/athlete and the student/non-athlete in community junior colleges. University of Nebraska. Lincoln, NB. 1974. Educational Resources Information Center. ED 091 039.
- Medsker, Leland L. The junior college: progress and prospect. McGraw-Hill Book Company. New York, 1960.

- Medsker, L. L. and D. Tillery. Breaking the access barriers: A profile of two-year colleges. McGraw-Hill Book Company. New York, 1971.
- Medsker, L. L. and J. W. Trent. Factors affecting college attendance of high school graduates from varying socioeconomic and ability levels. USOE Cooperative Research Project No. 438. Center for Research and Development in Higher Education. University of California. Berkely, CA. 1965.
- Medsker, L. L. and J. W. Trent. The influence of different types of public higher institutions on college attendance from varying socioeconomic and ability levels. Center for the Study of Higher Education. University of California. Berkeley, CA. 1965a.
- Mehra, N. Retention and withdrawal of university students. Office of Institutional Research. University of Alberta. Edmonton, Alberta. December, 1973. Educational Resources Information Center. ED 087 296.
- Mehra, N. Who goes when to college? Office of Institutional Research and Planning. University of Alberta. Edmonton, Alberta. December, 1972. Educational Resources Information Center. ED 085 003.
- Mellinger, M. Changing trends among public junior colleges. Junior College Journal. November, 1962.
- Menefee, S. Finding new direction. Change. July-August, 1974.
- Metcalf, Alan W. Community college student characteristics. State Superintendent Public Instruction. Olympia, WA. 1965. Educational Resources Information Center. ED 010 732.
- Milton, O. and E. J. Shoben. Learning and the professor. Ohio University Press. Athens, OH. 1968.
- Mitchell, James A. and Ralph Moorehead. A study of full-time students who discontinued their attendance at A.W.C. after attending one or both semesters of the 1966-67 school year. Arizona Western College. Yuma, AZ. 1968. Educational Resources Information Center. ED 024 360.
- Monroe, Charles R. Profile of the community college. Jossey-Bass Publisher. San Francisco, 1973.
- Moore, E. B. and Horace E. Hartsell. From community college to university--research report: What influences the transfer student in his choice? Community College Review. Fall, 1974.

- Moore, E. Maynard. Student attrition in the open-door community college: A working hypothesis. Paper presented at the annual meeting of the Community College Social Sciences Association. Dallas, TX. November, 1974. Educational Resources Information Center. ED 104 464.
- Morgenstein, Melvin and Harriet Strongin. A study of student dropouts from vocationally oriented business programs at Nassau Community College. Final Report. Nassau Community College. Garden City, NY. July, 1970. Educational Resources Information Center. ED 044 100.
- Morrison, Donald G. On the interpretation of discriminant analysis. Journal of Marketing Research. Vol. 6, 1969.
- Munday, L. A. A comparison of junior college students in transfer and terminal curricula in The two-year college and its students. The American College Testing Program. Iowa City, IA. 1969.
- Munday, L. A. and J. Davis. Assessment of adult accomplishment. American College Testing Program. Iowa City, IA. 1974.
- Nie, Norman H. and Associates. SPSS: Statistical package for the social sciences. Second Edition. McGraw-Hill Company. New York, 1975.
- Nogle, D. G. A comparison of selected characteristics of transfer and terminal occupational students in a California junior college. Unpublished doctoral dissertation. University of Southern California. 1965.
- Overall, John E. and James C. Klett. Applied multivariate analysis. McGraw-Hill Book Company. New York, 1972.
- Panos, Robert J. Some characteristics of junior college students. ACE Research Reports. American Council on Education. Washington, 1966.
- Panos, Robert J. and Alexander W. Astin. Attrition among college students. American Educational Research Journal. January, 1968.
- Panos, Robert J. and Alexander W. Astin. A profile of entering 1965 college freshmen. College and University. Winter, 1967a.
- Panos, Robert J. and Alexander W. Astin. Attrition among college students. ACE Research Reports, No. 2. American Council on Education. Washington, 1967.
- Perkins, Carl D. Sex discrimination and sex stereotyping in vocational education. Government Printing Office. Washington, 1975.

- Pervin, L. A. The later academic, vocational, and personal success of college dropouts in L. Pervin et al (Editors) The college dropout and the utilization of talent. Princeton University Press. Princeton, NJ. 1966.
- Pervin, Lawrence A., Louis E. Reik and Willard Dalrymple. The college dropout and the utilization of talent. Princeton University Press. Princeton, NJ. 1966.
- Peterson, Richard E. Technical manual: College student questionnaires. Educational Testing Service. Princeton, NJ. 1965.
- Popham, W. James and Kenneth A. Sirotnik. Educational statistics: Use and interpretation. Second Edition. Harper and Row. New York, 1973.
- Powell, H. M. Focus on the Los Angeles city college student. Unpublished report. Los Angeles City College. Los Angeles, CA. 1966.
- Powell, James R. Student attrition in higher education: A survey of recent literature. Center for Community Needs Assessment. University of Florida. Gainesville, FL. August, 1974. Educational Resources Information Center. ED 100 413.
- Puffer, Karel. A study of student characteristics at a post-secondary institute of technology. Doctoral dissertation. University of Illinois. Urbana-Champaign, IL. 1971.
- Raines, Max R. Characteristics of junior college students. National Business Education Quarterly. December, 1967.
- Reik, L. E. The dropout problem. The Nation. May 19, 1962.
- _____. Report of biographical information on people who enrolled in the full-time day programs of the Minnesota area vocational-technical institutes between July 1, 1972 and June 30, 1973. Summary of all enrollees: Across the state. Vocational Follow-up System. University of Minnesota. Minneapolis, MN. November, 1973. Educational Resources Information Center. ED 110 823.
- Reynolds, James W. The comprehensive junior college curriculum. McCutchan Publishing Corporation. Berkeley, CA. 1969.
- Rice, Gary A. An examination of the earned grade distribution between "successful" and "dropout" students at Yakima Valley College. Yakima Valley College. Yakima, WA. December, 1969. Educational Resources Information Center. ED 036 293.

- Rice, Gary A. and William Scofield. A contrast between the "successful" and "dropout" student at Yakima Valley College. Washington State Board for Community College Education. Olympia, WA. 1969. Educational Resources Information Center. ED 030 416.
- Richards, J. M. and L. A. Braskamp. Who goes where to junior college in The two-year college and its students. The American College Testing Program. Iowa City, IA. 1969.
- Richards, J. M., L. M. Rand and L. P. Rand. A description of junior colleges in The two-year college and its students. The American College Testing Program. Iowa City, IA. 1969.
- Richards, J. M., L. P. Rand and L. M. Rand. Regional differences in junior colleges in The two-year college and its students. The American College Testing Program. Iowa City, IA. 1969a.
- Robinson, L. Relation of student persistence in college to satisfaction with "environmental" factors. Unpublished doctoral dissertation. University of Arkansas. 1967.
- Robinson, R. B. Survey of personal attitudes about Cerritos College from full-time day students of Mexican heritage. Cerritos College. Norwalk, CA. 1968. Educational Resources Information Center. ED 024 355.
- Rock, D., J. Centra and R. Linn. Relationships between college characteristics and student achievement. American Education Research Journal. Vol 7, 1970.
- Rose, Harriett A., and Charles F. Elton. Another look at the college dropout. Journal of Counseling Psychology. Summer, 1966.
- Rossi, Eileen J. The women's movement. Have community colleges responded? Community College Review. January, 1976.
- Roueche, John E. Research studies of the junior college dropout. Junior College Research Review. October, 1967. Educational Resources Information Center. ED 013 659.
- Roueche, John E. and John R. Boggs. Junior college institutional research: State of the art. American Association of Junior Colleges. Washington, 1968.
- Roueche, John E. and Oscar G. Mink. Helping the "unmotivated" student: Toward personhood development. Community College Review. Spring, 1976.
- Sandford, N. Where colleges fail. Jossey-Bass Publisher. San Francisco, 1967.

- Schoenfeldt, L. F. Post-high school education in Flanagan, J. C. and W. W. Cooley, Project talent: One year follow-up studies. USOE Cooperative Research Project No. 2333. University of Pittsburgh. Pittsburgh, PA. 1966.
- Schultz, Alan R. An empirical study of the problem of attrition of students of first-year accounting in Oregon community colleges. Unpublished doctoral dissertation. Oregon State University. Corvallis, OR. 1973.
- Scott, J. C. A study of the relationship between students' personal perception of environmental press and attrition at a two-year college. Dissertation Abstracts International. Vol. 32 (9-A), 1971.
- Scully, M. G. Student focus on practicality hits humanities. The Chronicle of Higher Education. February 4, 1974.
- Seashore, H. Academic abilities of junior college students. Junior College Journal. Vol. 29, No. 2. 1958.
- Seibel, D. W. Follow-up of a national sample of high school seniors: Phase two--one year after graduation. Statistical Analysis Report SR-65-62. Educational Testing Service. Princeton, NJ. October, 1965.
- Sensor, Phyllis. Follow-up of the 1965 freshmen who did not return for fall semester, 1966. Riverside City College. Riverside, CA. 1967. Educational Resources Information Center. ED 014 987.
- Sewell, W. and V. Shah. Socioeconomic status, intelligence, and the attainment of higher education. Sociology of Education. Vol. 40, 1967.
- Sheehan, Bernard S. and Margaret Reti. Relative academic performance of college transfer students at the University of Calgary. Research in Higher Education. Vol. 2, 1974.
- Siegel, Sidney. Nonparametric statistics for the behavioral sciences. McGraw-Hill Book Company. New York, 1956.
- Simon, Lora S. The cooling-out function of the junior college. The Personnel and Guidance Journal. June, 1967.
- Snyder, F. A. and C. E. Blocker. A profile of non-persisting students: A description of educational goals and achievements, activities, and perceptions of non-graduates, spring 1969. Harrisburg Area Community College. Harrisburg, PA. 1969. Educational Resources Information Center. ED 037 218.

- Snyder F. A. and C. E. Blocker. A profile of students: A description of the characteristics, attitudes, and concerns of students, spring 1969. Harrisburg Area Community College. Harrisburg, PA. 1969a. Educational Resources Information Center. ED 037 203.
- Snyder, F. A. and C. E. Blocker. A profile of students: A description of the characteristics, perceptions, and activities of graduates, spring 1969. Harrisburg Area Community College. Harrisburg, PA. 1969b. Educational Resources Information Center. ED 037 204.
- Spady, William G. Dropouts from higher education: An interdisciplinary review and synthesis. Interchange. Vol. 1, 1970.
- Spady, William G. Dropouts from higher education: Toward an empirical model. Interchange. Vol. 2, 1971.
- Spear, Mary Eleanor. Charting statistics. McGraw-Hill Book Company. New York, 1952.
- Stafford, Thomas H. Racial patterns in community college attendance. Community College Review. Spring, 1976.
- Stine, Vance. Some characteristics of students who withdrew from L.A.C.C. spring 1975, spring 1974, spring 1973. Research Study No. 76-2. Los Angeles City College. Los Angeles, CA. February, 1976. Educational Resources Information Center. ED 118 200.
- Stocking, Joyce. Non-persisting and persisting transfer program students. Paper presented at the EPDA Institute for Advanced Study in Student Personnel Work in Junior College and Technical Institutes. University of Missouri. Columbia, MO. 1969. Educational Resources Information Center. ED 044 144.
- _____. Students who were enrolled fall 1967 and did not return for spring 1968. San Jose City College. San Jose, CA. 1968. Educational Resources Information Center. ED 022 463.
- Summerskill, J. Dropouts from college in Sandford, Nevill (Editor) The American college. John Wiley and Sons. New York, 1962.
- Taylor, R. and G. Hanson. Interest and persistence. Journal of Counseling Psychology. No. 17, 1970.
- Thompson, J. R. Why students drop courses. Macomb County Community College. Warren, MI. 1969. Educational Resources Information Center. ED 026 994.
- Thornton, J. W. The community junior college. John Wiley and Sons, Inc. New York, 1965.

- Tillery, H. D. Differential characteristics of entering freshmen at the University of California and their peers at California junior colleges. Unpublished doctoral dissertation. University of California. Berkeley, CA. 1963.
- Tinto, Vincent. Dropout from higher education: A theoretical synthesis of recent research. Review of Educational Research. Winter, 1975.
- Trent, J. W. and L. L. Medsker. Beyond high school. Jossey-Bass Publisher. San Francisco, 1968.
- Trent, J. W. and L. L. Medsker. Beyond high school: A study of 10,000 high school graduates. Center for Research and Development in Higher Education. University of California. Berkeley, CA. 1967.
- Trent, J. W. and J. H. Ruyle. Variations, flow and patterns of college attendance: The high school graduate study. College and University. Fall, 1965.
- Turnbull, W. W. Relevance in testing. Paper presented at the meeting of Commission on Tests of the College Entrance Examination Board. New York, October 17-18, 1967.
- Turner, H. J. The half that leaves: A limited survey of attrition in community colleges. Florida Community Junior College Inter-Institutional Research Council. University of Florida. Gainesville, FL. 1970. Educational Resources Information Center. ED 038 127.
- Vail, Evan. Retention of students over a three year period (fall semester, 1962, 63, and 64) under three different drop policies. Riverside City College. Riverside, CA. 1966. Educational Resources Information Center. ED 014 286.
- Van Alstyne, C. Attrition rates of college students. American Council on Education. Unpublished manuscript. Washington, 1973.
- Vaughan, R. College dropouts: Dismissed vs. withdrew. Personnel and Guidance Journal. Vol. 46, 1968.
- Warriner, Clell C., Dorothy A. Foster and David K. Trites. Failure to complete as a family characteristics: A college sample. Journal of Educational Research. July-August, 1966.
- Wegner, E. The relationship of college characteristics to graduation. Unpublished doctoral dissertation. University of Wisconsin. 1967.
- Weigand, G. Adaptiveness and the role of parents in academic success. Personnel and Guidance Journal. Vol. 35, 1957.

- Weigel, Mark. A comparison of persisters and non-persisters in a junior college. Paper presented at the EDPA Institute for Advanced Study in Student Personnel Work in Junior Colleges and Technical Institutes. 1969. Educational Resources Information Center. ED 044 115.
- Wenrich, J. William, Jane Hanigan and Raymond Pflug. Keeping dropouts in: Retention of students identified as high probability dropouts. College of San Mateo. San Mateo, CA. March, 1971. Educational Resources Information Center. ED 047 684.
- Wert, James E., Charles O. Neidt and J. Stanley Ahmann. Statistical methods in educational and psychological research. Appleton-Century-Crofts, Inc. New York, 1954.
- White, James H. Individual and environmental factors associated with freshman attrition at a multi-campus community college. Dissertation Abstracts International. Vol. 32 (7-A), 1971.
- Willett, Lynn H. Non-persisting student follow-up. Moraine Valley Community College. Palos Hills, IL. March, 1973. Educational Resources Information Center. Ed 078 821.
- Willingham, W. W. and N. Findikyan. Patterns of admission for transfer students. College Entrance Examination Board. New York, 1969.
- Wilson, Donald J., Robert M. Stamp and Louis-Phillipe Audet. Canadian education: History. Prentice-Hall. Scarborough, Ontario, 1970.
- Wilson, Melvin Dee. A study of community college dropouts. Unpublished Master's Thesis. Oregon State University. Corvallis, OR. 1970.
- Wise, W. Max. They come for the best of reasons--college students today. American Council on Education. Washington, 1958.
- Worth, Walter H. A future of choices: A choice of futures. Commission on Educational Planning. Queen's Printer for the Province of Alberta. Edmonton, Alberta, 1972.
- Wolfe, D. America's resources of specialized talent: A current appraisal and a look ahead. Commission on Human Resources and Advanced Training. Report by the Director. Harper Publishing Company. New York, 1954.
- Wolford, M. A comparison of dropouts and persisters in a private liberal arts college. Unpublished doctoral dissertation. University of Oregon. Eugene, OR. 1964.

Yamamoto, Kaoru (Editor). The college student and his culture: An analysis. Houghton Mifflin Company. Boston, MA. 1968.

Zucker, Jacob D. Annotated bibliography on topics of concern to higher education 1974. Institute of Higher Education. University of Florida. Gainesville, FL. 1974. Educational Resources Information Center. ED 115 113.

Zwerling, L. Steven and Dabney Park. Curriculum comprehensiveness and tracking: The community college's commitment to failure. Community College Review. Spring, 1974.

A P P E N D I C E S

APPENDIX A

Table 27 - Secretarial Science Student Characteristics

Table 28 - Secretarial Science Student Attitudes

Table 29 - Within Groups Correlation Matrix

TABLE 27
SECRETARIAL SCIENCE STUDENT CHARACTERISTICS

CABI Statement	N	%
Sex - Female	306	99.03
Age - 18 years	112	36.24
Marital status - Single, not engaged (formally, or informally)	207	66.99
Religious preference - Protestant	127	41.10
Extent of father's education - did not graduate from high school	201	65.05
Extent of mother's education - did not graduate from high school	178	57.60
Father's occupation - elevator operator, service station attendant, hospital attendant, farm laborer, taxi driver, stockroom clerk	121	39.16
Mother's occupation - caring for the home, not employed outside the home	144	46.60
Student financial status - financially independent	115	37.22
Student dating pattern - date one person seriously	104	33.66
Marriage plans - not before two or three years after college	154	49.84
Number of times that you have "gone steady" during the last year - once	122	39.48
Type of high school attended - public high school	248	80.26
Number of students in high school graduating class - less than 100	119	38.51
Location of high school graduated from - rural or small town	159	51.46

TABLE 27 (Continued)
SECRETARIAL SCIENCE STUDENT CHARACTERISTICS

CABI Statement	N	%
High school cumulative grade point average - B grade	99	32.04
Rank in high school class based on grades earned - do not know	143	46.28
Subject needing special help before taking college level course - mathematics	78	25.24
Weakest characteristics - giving a speech	163	52.75
Participation in organized organizations during high school - none	178	57.60
Number of hours per week of paid employment during senior year in high school - none	122	39.48
Number of summers of paid employment for at least one month - two	79	25.57
Number of semesters of "business" courses taken from ninth grade - three or four	82	26.54
Number of semesters of "vocational shop, agriculture, or home economic courses taken from ninth grade - one or two	140	45.31
Number of foreign language courses taken from ninth grade - none	109	35.28
- one or two	108	34.95
Time elapsed from high school graduation to college entrance - less than a year	181	58.58
Date of application for admission to college - after Easter	162	52.42
While attending college prefer to live - in a private apartment or house	167	54.04
Distance of parents' home from college - 10 miles or less	121	39.16

TABLE 27 (Continued)
SECRETARIAL SCIENCE STUDENT CHARACTERISTICS

CABI Statement	N	%
Major source of financing college education - parents	109	35.28
Financial aids sought - none	148	47.90
Planned hours per week of work while attending college - none, maybe holidays	196	63.43
Most influence on decision to attend college - myself	209	67.64
Real reason for going to college - learn a good vocation/profession	219	70.83
Feelings about college - if I could find something else interesting to do, I would not go to college right now	146	47.25
Greatest influence to attend this college - close to my home	126	40.78
Feelings about attending this particular institution - enjoy it	153	49.51
Degree of certainty about choice of college major/career - quite sure, may change my mind	90	29.22
Anticipated grade attainment in college - make a "B" average	154	49.84
Planned length of stay in college - one year	166	53.72
Cigarette smoking preference - do not smoke	131	42.39
Reason for students joining the "drug scene" - to escape from personal problems	137	44.34
Most enjoyable leisure activity - dancing	115	37.34

TABLE 28
SECRETARIAL SCIENCE STUDENT ATTITUDES

CABI Statement	N	%
Wish to confide more in my parents - disagree	139	45.13
Parents find more fault with me than they should - disagree	207	67.20
Little love and companionship at home compared to other homes - disagree	252	81.82
At times wish very much to leave home - agree	141	45.78
Parents want me to choose a career that will satisfy <u>me</u> - agree	229	74.35
Relatively independent and free from family rule - agree	163	52.92
Family opposes my major and career choice - disagree	254	82.46
High school grades were easy to obtain - agree	129	41.89
- disagree	114	37.02
Encountered more difficulty than my classmates in getting along with teachers and principals - disagree	238	77.28
Have been sent to the principal for discipline - disagree	259	84.09
Extracurricular activities did not have much appeal - disagree	145	47.12
Have been healthy most of the time - agree	249	80.85
Have a good appetite - agree	253	82.14
Generally enjoy uninterrupted sleep - agree	148	48.05
Feel rested in the morning - agree	145	47.07

TABLE 28 (Continued)
SECRETARIAL SCIENCE STUDENT ATTITUDES

CABI Statement	N	%
I carefully plan and organize my work - agree	178	57.79
Generally get term papers completed on time - agree	243	78.89
Often procrastinate - agree	151	49.03
Everything I do is an effort - disagree	193	62.66
I get bored easily unless I am doing something active - agree	165	53.57
Often lose interest before completing a project - disagree	172	55.85
Often dread facing the day - disagree	196	63.64
Always have disliked regulations - disagree	193	62.66
Dislike following a set schedule - disagree	189	61.36
There is too much criticism of the "drug scene" - disagree	155	50.32
Escape from personal problems is the single most important reason for joining the "drug scene" - agree	160	42.21
Experience with police has been positive - agree	222	72.08
Have not been in trouble with the law - agree	230	74.68
Have received a raw deal from life - disagree	261	84.75
Lack of success is due to others - disagree	240	77.93
Have been wrongfully punished - disagree	207	67.21
Things have not gone very well recently - disagree	200	64.93

TABLE 28 (Continued)
SECRETARIAL SCIENCE STUDENT ATTITUDES

CABI Statement	N	%
Life is full of interesting things - agree	213	69.15
Relatively pleased with life - agree	211	68.50
Happy with the way I am doing things - agree	226	73.37
My feelings are easily hurt - agree	197	63.96
Frequently find it necessary to defend my rights - agree	191	61.01
Enjoy "x-rated" movies - disagree	149	48.38
Many of my friends would probably be considered unconventional by other people - disagree	158	51.30
There are too many young girls on the "pill" - disagree	144	46.76
Cannot imagine not going to college - disagree	130	42.20
Cannot imagine not getting a college degree - disagree	133	43.18
Will enjoy attending college - agree	212	68.83
Difficult decision whether or not to attend college - disagree	191	62.01
With the elimination of outside influences, I would have chosen a different college - disagree	241	78.24
One or two years of work experience better prepares students for college - agree	118	38.31

TABLE 28 (Continued)
SECRETARIAL SCIENCE STUDENT ATTITUDES

CABI Statement	N	%
Home problems may interrupt my college education - disagree	200	64.93
Must force myself to do school work - disagree	216	70.13
Work schedule may interrupt my college education - disagree	241	78.25
Often obtain lower grades than am capable of making - agree	154	50.00

TABLE 29
WITHIN GROUPS CORRELATION MATRIX

	VAR003	VAR007	VAR010	VAR012	VAR013	VAR014	VAR015	VAR019	VAR025	VAR030
VAR003	1.0000									
VAR007	-0.0979	1.0000								
VAR010	0.0699	-0.1113	1.0000							
VAR012	-0.0149	-0.0478	0.0722	1.0000						
VAR013	-0.0865	0.0944	-0.0520	-0.1459*	1.0000					
VAR014	0.1095	0.0208	0.0464	0.1515**	0.1396*	1.0000				
VAR015	-0.0421	0.0529	-0.0370	0.1456*	0.1076	0.3142**	1.0000			
VAR019	-0.1395*	0.1063	-0.0825	0.0777	0.0040	0.1065	0.0929	1.0000		
VAR025	-0.2878**	0.0068	-0.2173**	-0.0359	-0.0259	-0.1197*	-0.0595	0.1287*	1.0000	
VAR030	0.0818	-0.0658	0.0415	0.1798**	0.1181*	0.3261**	0.2032**	0.0717	-0.1202*	1.0000
VAR034	-0.2204**	0.0889	0.0216	0.1877**	0.2439**	0.1269*	0.1449	0.1178*	0.0636	0.2839**
VAR039	-0.0436	-0.0070	0.0423	0.1728**	0.0254	0.1890**	0.2553**	0.0828	-0.0246	0.1582**
VAR042	0.2072**	-0.0967	-0.0499	-0.0435	-0.1435*	0.0394	0.0269	-0.1304*	-0.1490**	0.1602
VAR048	0.0234	-0.0600	0.0824	0.0999	-0.0365	-0.0874	0.0033	-0.0479	0.0467	-0.0290
VAR051	-0.0210	0.0299	-0.0322	-0.0945	-0.0079	-0.0839	-0.0378	-0.1568**	-0.1743**	-0.1262*
VAR056	0.0794	-0.0671	0.1249*	-0.0171	0.0498	-0.0037	-0.0048	-0.1156*	-0.1647**	-0.0063
VAR062	-0.0963	0.1336*	-0.1460*	-0.0991	0.1572**	0.0925	0.0115	0.1195*	0.1575**	-0.0371
VAR063	-0.0839	0.0048	-0.0695	-0.0674	-0.0364	-0.0551	-0.0520	0.1488**	0.1371*	0.0183
VAR065	-0.0146	0.1653**	0.0424	0.0251	0.0794	0.1353*	0.0651	0.0948	0.0843	0.0665
VAR071	-0.0349	0.0939	-0.0242	-0.1233*	0.0152	0.0078	0.0537	0.0542	0.0146	0.0614
VAR077	-0.0065	0.0372	0.0564	-0.0571	0.1880**	0.0229	0.0495	0.0578	0.0454	0.0216
VAR081	0.0318	0.0258	0.0402	-0.0304	0.0511	0.1421*	-0.0268	0.0616	0.0104	0.0949
VAR083	-0.0867	0.0972	-0.0522	0.0164	-0.0156	-0.0130	-0.1793**	0.1620**	0.2027**	-0.0583
VAR087	-0.1359*	0.0682	-0.1058	-0.0729	0.0471	0.0527	-0.0913	0.1106	0.2531**	-0.0764
VAR095	-0.2043**	0.1156*	-0.0562	0.0364	0.1096	0.0418	0.0783	0.1026	0.1175*	-0.0288
VAR096	0.0715	0.0129	0.1192*	0.0906	-0.0731	0.0502	-0.0422	0.0766	-0.0064	-0.0022
VAR097	-0.1814**	-0.0160	0.0140	-0.0007	0.0206	0.0168	-0.0541	0.1125	0.1187*	0.0555
VAR099	0.0547	0.0285	0.0503	0.0508	0.0339	0.0484	0.0392	0.0790	0.0415	0.0522
VAR104	-0.0460	-0.0008	0.0550	-0.0716	0.0462	-0.0715	-0.0452	-0.0806	-0.0778	-0.1642**

* p = .05 Level of significance

** p = .01 Level of significance

TABLE 29 (Continued)
WITHIN GROUPS CORRELATION MATRIX

	VAR034	VAR039	VAR042	VAR048	VAR051	VAR056	VAR062	VAR063	VAR065	VAR071
VAR034	1.0000									
VAR039	0.1325 *	1.0000								
VAR042	-0.1810 **	-0.0425	1.0000							
VAR048	0.0519	-0.0451	-0.0172	1.0000						
VAR051	-0.0371	-0.0044	0.1154 *	-0.0052	1.0000					
VAR056	-0.0171	0.0248	0.0281	0.0233	0.0582	1.0000				
VAR062	-0.1085	0.0273	-0.1071	-0.1170 *	-0.1949 **	-0.2010 **	1.0000			
VAR063	-0.0885	-0.0046	-0.0714	-0.1279 *	-0.0962	-0.0483	0.2669 **	1.0000		
VAR065	-0.0387	0.0289	-0.0509	0.0021	-0.0430	-0.1665 **	0.2988 **	0.1924 **	1.0000	
VAR071	0.0413	-0.0028	-0.0424	-0.0482	-0.2000 **	-0.0612	0.2296 **	0.4206 **	0.2165 **	1.0000
VAR077	0.0380	0.0725	-0.1017	0.0187	-0.0724	-0.0665	0.2075 **	0.1215 *	0.2941 **	0.1469 *
VAR081	0.0608	-0.0434	-0.2032 **	0.0159	-0.2666 **	-0.0005	0.1680 **	0.1644 **	0.1242 *	0.2247 **
VAR083	0.0649	0.0542	-0.1315 *	0.0427	-0.0793	-0.0514	0.1425 *	0.1136 *	0.1116	0.0585
VAR087	-0.0068	-0.0410	-0.0204	0.0449	-0.2019 **	-0.1071	0.2805 **	0.2768 **	0.2140 **	0.2193 **
VAR095	-0.0182	-0.0046	-0.1495 **	-0.1661 **	-0.1520 **	-0.1952 **	0.3784 **	0.1621 **	0.2378 **	0.0899
VAR096	-0.1160 *	0.0338	-0.0120	0.0604	-0.1015	-0.0601	0.2294 **	0.1671 **	0.2199 **	0.1844 **
VAR097	0.0556	0.0579	-0.0650	0.0056	-0.1501 **	0.0241	0.2018 **	0.2764 **	0.1007	0.2431 **
VAR099	-0.0066	0.0220	-0.0165	0.0462	-0.1930 **	0.1017	0.1436 *	0.0187	0.1311	0.0866
VAR104	0.0542	-0.0705	0.1065	-0.0111	0.2168 **	0.0191	-0.1202 *	-0.2177 **	-0.0909	-0.1001
	VAR077	VAR081	VAR083	VAR087	VAR095	VAR096	VAR097	VAR099	VAR104	
VAR077	1.0000									
VAR081	0.1777 **	1.0000								
VAR083	0.0696	0.0685	1.0000							
VAR087	0.0740	0.1727 **	0.2836 **	1.0000						
VAR095	0.1546 **	0.0273	0.0705	0.1896 **	1.0000					
VAR096	0.2594 **	0.1242 *	0.1433 *	0.0915	0.2062 **	1.0000				
VAR097	0.1669 **	0.0945	0.1643 **	0.2697 **	0.3166 **	0.1830 **	1.0000			
VAR099	0.1978 **	0.1196 *	0.1236 *	0.0658	0.0809	0.3049 **	0.3140 **	1.0000		
VAR104	-0.1142 *	-0.2017 **	-0.0250	-0.1589 **	-0.0890	-0.0473	-0.3823 **	-0.2289 **	1.0000	

* p = .05 Level of significance

** p = .01 Level of significance

Appendix B

Authorization Letter

College Auto-Biographical Inventory



Longview community college

500 LONGVIEW ROAD • LEE'S SUMMIT, MISSOURI 64063 • TELEPHONE (816) 763-7777

August 26, 1975

H. M. Fisher
Lethbridge Community College
Lethbridge, Alberta

Dear Fisher

This is to acknowledge your letter of July 31. I am very sorry that I have not been able to answer your letter sooner. However, I was fortunate to have a rather long vacation and returned to the college just prior to registration. Needless to say, I was not able to respond in that rather busy period.

Under separate cover I am forwarding two copies of the College Auto-Biographical Inventory along with a sample of answer sheets we have been using. I hope that this is not too late and that you can still use the inventory. Since the instrument has not been published, I hereby give you permission to reproduce the test booklets and to use them during the coming year for your experimental purposes.

Within one month or the most two months, I will have a set of cut-off scores available to you and an answer set you can use for hand scoring. Please communicate again if you are interested in these materials.

Cordially

Redacted for Privacy

✓ Dr. Jerome L. Ommen
Associate Dean of Student Affairs

lb

THE COLLEGE AUTO-BIOGRAPHICAL INVENTORY

Experimental Form X5

Edward H. Hammond
Seton Hall University

Robert Callis
University of Missouri - Columbia

Jerome L. Ormen
Longview Community College

GENERAL DIRECTIONS

1. Read "Directions for Marking Answer Sheet" as they appear on the top left of your answer sheet.
2. Read "Directions for Marking Name Grid" as they appear on the top right of your answer sheet. Then fill in the Name Grid according to these instructions.
3. In column 1 of the "Special Code" section (bottom center) mark the code number for your college. (Your examiner will tell you the code for your college.)
4. Turn your answer sheet over and answer the 110 items in the booklet. These items are designed to help you describe yourself in ways that will be helpful to your college in understanding its students. Please respond to all items.
5. Place all your marks on the answer sheet. Do not put any marks on this booklet.

June 1974

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DIRECTIONS FOR PART I

Read each statement carefully; then select the most correct answer from those given to you. On your answer sheet, put a mark through the response you chose. If you want to change an answer after you have marked it, erase it and mark through the response you want. Make each mark heavy and black.

1. My sex is
 1. male
 2. female
2. My age is
 1. 17 or less
 2. 18
 3. 19
 4. 20
 5. 21 or over
3. Which of the following best describes you at this time?
 1. single, not engaged (formally, or informally)
 2. single, engaged (formally or informally)
 3. married, no children
 4. married, have a child or children
 5. divorced
4. My religious preference is
 1. Catholicism
 2. Jewish
 3. Protestant
 4. none
 5. prefer not to answer
5. My racial/ethnic background is
 1. Black American
 2. American Indian
 3. Caucasian
 4. Chicano/Mexican-American
 5. none of the above or prefer not to answer
6. The extent of my father's education is
 1. did not graduate from high school
 2. graduated from high school but did not attend college
 3. attended college but did not graduate
 4. graduated from college
 5. took post-graduate work (in graduate school, law, medicine, dentistry, etc.)
7. The extent of my mother's education is
 1. did not graduate from high school
 2. graduated from high school but did not attend college
 3. attended college but did not graduate
 4. graduated from college
 5. took post-graduate work (in graduate school, law, medicine, dentistry, etc.)

8. Which of the following levels of occupations is most like that of your father (step-father)?
 1. elevator operator, service station attendant, hospital attendant, farm laborer, taxi driver, stockroom clerk
 2. bookkeeper, barber, men's clothing salesman, electrician, oil well driller, truck driver
 3. accountant, computer programmer, employment manager, life insurance salesman, police detective, X-ray technician
 4. factory manager, industrial chemist, lawyer, newspaper editor, high school principal, pharmacist
 5. chief engineer, geologist, federal judge, bank president, heart surgeon, U.S. senator, university professor
9. Which of the following best describes your mother (step-mother)?
 1. Her major activities are caring for our home; she is not employed outside the home.
 2. Her major activities are caring for our home, but she has a regular part-time job outside the home.
 3. She divides her time between caring for our home and volunteer community service (e.g. League of Women Voters, Gray Ladies, Girl Scouts, etc.).
 4. She has a full-time career; her home-making duties are shared with others.
 5. None of the above describe my mother very well.
10. What type of high school did you attend for the greatest part of your last two years in high school?
 1. public high school
 2. church related high school
 3. military academy
 4. private high school not church related and not a military academy
 5. something other than the above
11. How many students were (are) in your high school graduating class?
 1. less than 100
 2. 100 to 249
 3. 250 to 499
 4. 500 to 749
 5. 750 or more
12. Which of the following best describes the location of the high school you graduated from?
 1. rural or small town
 2. medium size city
 3. suburb of a large city
 4. central portion of a large metropolitan area
 5. I earned my high school diploma by examination (e.g. GED tests)
13. How far is your home (parent's home) from the college you plan to attend?
 1. 10 miles or less
 2. 11-50 miles
 3. 51-150 miles
 4. 151-300 miles
 5. more than 300 miles

14. If your parents claim you as a dependent for income tax purposes or if they intend to pay most of your college expenses, what is the approximate annual combined income of your parents?
 1. less than \$6,000
 2. between \$6,000 and \$9,000
 3. between \$9,000 and \$12,000
 4. more than \$12,000
 5. I am not financially dependent on my parents
15. Which of the following will be your major source for financing your college education:
 1. parents
 2. scholarships or grants
 3. personal savings (including summer work)
 4. loans
 5. work during college
16. During your senior year in high school, how many hours per week (on the average) did you work for pay outside of your home?
 1. none
 2. 1 to 8 hours
 3. 9 to 15 hours
 4. 16 to 20 hours
 5. more than 20 hours
17. How many summers have you worked for pay outside your home for at least one month?
 1. none
 2. one
 3. two
 4. three
 5. four or more
18. How long will it be between the time you graduated from high school and the time you enter college?
 1. less than a year
 2. one year
 3. two years
 4. three years
 5. four or more years
19. My high school cumulative grade point average was
 1. C
 2. C+
 3. B-
 4. B
 5. B+ or above
20. How many of the following did you achieve in high school? (1) president of a student organization; (2) varsity sports letter; (3) elected to a scholastic honor society; (4) had a major part in a school play; (5) played in the band or orchestra
 1. none
 2. one
 3. two
 4. three
 5. four or more

21. Starting with courses taken in the ninth grade, how many semesters (half years) of English did you take and pass?
 1. five or less
 2. six
 3. seven
 4. eight
 5. nine or more
22. Starting with courses taken in the ninth grade, how many semesters (half years) of mathematics did you take and pass?
 1. two or less
 2. three or four
 3. five or six
 4. seven or eight
 5. nine or more
23. Starting with courses taken in the ninth grade, how many semesters (half years) of science did you take and pass?
 1. none
 2. one or two
 3. three or four
 4. five or six
 5. seven or more
24. Starting with courses taken in the ninth grade, how many semesters (half years) of foreign language courses did you take and pass?
 1. none
 2. one or two
 3. three or four
 4. five or six
 5. seven or more
25. Starting with courses taken in the ninth grade, how many semesters (half years) of business and commercial courses - typing, shorthand, bookkeeping, business law, commercial arithmetic, etc. - did you take and pass?
 1. none
 2. one or two
 3. three or four
 4. five or six
 5. seven or more
26. Starting with courses taken in the ninth grade, how many semesters (half years) of vocational, shop and agricultural courses or home economics courses did you take and pass?
 1. none
 2. one or two
 3. three or four
 4. five or six
 5. seven or more
27. Where did you rank in your high school class based on grades earned?
 1. top quarter
 2. second quarter
 3. third quarter
 4. fourth quarter
 5. don't know

28. In high school I enjoyed most my participation in
 1. football or basketball
 2. school paper
 3. school yearbook
 4. student government
 5. none of these
29. Which of the following best describes your "dating" during the last year or two?
 1. I have enjoyed dating a lot of different people
 2. other things such as making good grades have been more important than dating
 3. I have found it quite enjoyable to date one person seriously
 4. I have dated two or three people seriously
 5. I am married
30. Which of the following influenced most your decision to go to college?
 1. my parents or close relatives
 2. my classmates or friends
 3. my teachers or counselors
 4. myself
 5. none of the above
31. Which of the following most influenced you to choose the college that you plan to attend?
 1. the college has a good general reputation
 2. the college is strong in the area of my major
 3. low costs (tuition, fees, etc.)
 4. advice of someone who has attended this college
 5. the college is close to my home
32. My real reason for going to college is to
 1. satisfy my parents
 2. learn a good vocation/profession
 3. become a better person
 4. learn how to earn money
 5. none of these
33. When did you apply for admission to this college?
 1. before last Thanksgiving
 2. between last Thanksgiving and Christmas
 3. between Christmas and Easter
 4. between Easter and the 4th of July
 5. after the 4th of July
34. Right now I think I'll go to college for
 1. one term (semester or quarter)
 2. one year
 3. two years
 4. three years
 5. four years or more

35. Which of the following subjects do you feel you would need some special help in (tutoring, refresher course, etc.) before taking a college level course in that subject
 1. English
 2. foreign language
 3. mathematics
 4. science
 5. none of these
36. While attending college I would prefer to live
 1. in a college residence hall
 2. in a fraternity or sorority
 3. in a private apartment or house
 4. with my parents
 5. none of these
37. What do you envision as your highest degree from college?
 1. two-year degree
 2. bachelor degree
 3. law or medical degree
 4. master's degree or doctorate
 5. no degree
38. With regard to marriage my tentative plans are to get married
 1. during college
 2. as soon as I finish college
 3. not before two or three years after college
 4. perhaps never
 5. I am married now
39. How many hours per week (on the average) do you intend to work while attending college?
 1. none, except possibly during holidays
 2. some, up to quarter-time
 3. quarter-time to half-time
 4. at least half-time but less than full-time
 5. full-time (about 40 hr/wk)
40. Which of the following financial aids have you applied for or intend to apply for?
 1. scholarship or grant
 2. part-time work on campus
 3. loan
 4. I have (or will have) a job off-campus
 5. none of the above describes me very well
41. How many times have you "gone steady" in the last 12 months?
 1. none
 2. once
 3. twice
 4. three or more times
 5. I am married

42. Which of the following best describes your feelings about going to college?
 1. I have always assumed that I would go to college
 2. my parents have always assumed that I would go to college, but I'm not sure that college is for me
 3. even though I've decided to go to college, I'm beginning to get "cold feet"
 4. if I could find something else interesting to do, I would not go to college right now
 5. none of the above describes me very well
43. How do you feel about attending this educational institution?
 1. enjoy it
 2. like it
 3. dislike it
 4. dread it
 5. do not know
44. How many persons have you dated fairly regularly in the last year or two?
 1. none
 2. one
 3. two
 4. three or more
 5. I am married
45. With reference to making grades in college
 1. I think I can make mostly A's
 2. I think I can make a B average
 3. I think I can make the minimum necessary to graduate
 4. I'm not sure if I can make a C average
 5. I'm afraid I'll flunk out
46. Which of the following would you rate as your weakest characteristic?
 1. writing a term paper
 2. drive to achieve
 3. understanding others and working well with them
 4. leadership ability
 5. giving a speech
47. Which of the following best describes you with regard to smoking cigarettes?
 1. I don't smoke
 2. I have smoked but I quit
 3. I smoke occasionally such as at a party
 4. I smoke fairly regularly but less than a pack a day
 5. I smoke more than a pack a day
48. How many times have you received a ticket for a "moving violation" while driving a car?
 1. none
 2. one
 3. two
 4. three or more
 5. I don't drive
49. To get a real thrill, I would choose to
 1. fly a jet plane
 2. race a motorcycle
 3. go scuba diving
 4. parachute jump or sky dive
 5. go skiing

50. In my opinion, the most important reason that students join the "drug scene" today is
1. as a protest against society
 2. to escape from an unhappy family situation
 3. to escape from personal problems
 4. for recreation and good fellowship
 5. as an alternative to alcohol
51. How sure are you of your choice of college major/career?
1. very certain - I wouldn't consider anything else
 2. quite sure; but might change my mind
 3. fairly sure, but want to explore more
 4. not very sure - my choice is quite tentative
 5. I don't have a choice yet
52. Which of the following do you enjoy most?
1. dancing
 2. swimming
 3. driving a car
 4. partying
 5. reading

DIRECTIONS FOR PART II

Read each statement carefully, then select one of the five responses listed below. On your answer sheet, put a mark through the response you chose. If you want to change an answer after you have marked it, erase it and mark through the response you want. Make each mark heavy and black.

Responses:

- 1 = strongly agree - this statement describes me quite well in most situations
- 2 = agree - this statement describes me fairly well in most situations
- 3 = uncertain - this statement does not apply to me, or I really can't answer one way or the other
- 4 = disagree - this statement generally does not describe me very well
- 5 = strongly disagree - this statement does not describe me at all except in rare situations

53. Most nights I go to sleep without thoughts or ideas bothering me.
54. I get bored easily unless I'm doing something active.
55. Often I start things then lose interest before I complete them.
56. My parents want me to choose a career that will satisfy me.
57. I wish I could confide in my parents more.
58. When I have a term paper assigned, I almost always get it in on time.
59. In high school extracurricular activities didn't appeal to me very much.
60. Sometimes I like to do dangerous things for the thrill of it.
61. I frequently find it necessary to stand up for what I think is right.
62. My parents and family find more fault with me than they should.

63. I have gotten a raw deal from life.
64. In high school good grades came rather easily for me.
65. There is very little love and companionship in my family as compared to other homes.
66. During the past few years I have been well most of the time.
67. I had more difficulty getting along with teachers and principals than most of my classmates.
68. My daily life is full of things that keep me interested.
69. I have been quite independent and free from family rule.
70. I like to see "X-rated" movies.
71. If people had not had it in for me I would have been much more successful.
72. Often I put off until tomorrow what I ought to do today.
73. I do not blame anyone for trying to grab everything he can get in this world.
74. There are too many young girls on the "pill" these days.
75. If I had been completely free to choose, I would have chosen a different college to attend.
76. My feelings are easily hurt.
77. At times I have very much wanted to leave home.
78. Often I make lower grades than I'm really capable of making.
79. People would be more ready for college if they were to work for a year or two after high school.
80. I expect to date a lot in college.
81. I had a hard time deciding whether to go to college or not.
82. There is too much criticism of the "drug scene" today.
83. In school I sometimes have been sent to the principal for discipline.
84. I can't imagine not going to college.
85. Many of my friends would probably be considered unconventional by other people.
86. I have a good appetite.
87. My family does not like the major I have chosen or the work I intend to choose for my life work.
88. I have to push myself to get going in the morning.

89. I have had a few encounters with the law.
90. My way of doing things is apt to be misunderstood by others.
91. I can't imagine not getting a college degree.
92. I tire easily.
93. I see to it that my work is carefully planned and organized.
94. I feel that I have often been punished without cause.
95. There are some problems at home that may cause me to interrupt my college education.
96. I have always disliked regulations.
97. Things haven't gone very well for me recently.
98. I dislike following a set schedule.
99. I have to force myself to do school work.
100. I sleep fine and feel rested in the morning.
101. I certainly would like to have my own car now even if I have to pay for it all myself.
102. I feel confident that I am going to enjoy attending college.
103. The most important single reason that students join the "drug scene" is as an escape from personal problems.
104. I'm quite pleased with the way things are going.
105. My experience has been that policemen are doing a good job and will be helpful whenever they can.
106. Everything I do is an effort.
107. It is possible that my work schedule might prevent me from continuing my college education.
108. I have never been in trouble with the law.
109. I'm happy with the way I'm doing things.
110. Often I find it hard to face the day.

Appendix C
DROPOUT AND PERSISTER COMPARISON

VAR003										
GROUP	Count									Row Total
	Row %									
	Col %									
	Total %	0.I	1.I	2.I	3.I	4.I	5.I			
DROPOUT	0.	0	7	5	1	3	3	19		
	I	0.0	36.8	26.3	5.3	15.8	15.8	6.2		
	I	0.0	3.4	12.2	7.7	9.4	23.1			
	I	0.0	2.3	1.6	0.3	1.0	1.0			
PERSISTER	1.	2	200	36	12	29	10	289		
	I	0.7	69.2	12.5	4.2	10.0	3.5	93.8		
	I	100.0	96.6	87.8	92.3	90.6	76.9			
	I	0.6	64.9	11.7	3.9	9.4	3.2			
Column Total		2	207	41	13	32	13	308		
		0.6	67.2	13.3	4.2	10.4	4.2	100.0		
Chi Square = 12.52312 with 5 Degrees of freedom Significance = 0.0283										

VAR010											
GROUP	Count	I							Row Total		
	Row %	I									
	Col %	I									
	Total %	I	0.I	1.I	2.I	3.I	4.I	5.I			
	-----I-----										

DROPOUT AND PERSISTER COMPARISON

VAR025											
GROUP	Count										
	Row %										
	Col %										
	Total %	0,I	1,I	2,I	3,I	4,I	5,I	Row Total			
DROPOUT	0.	0	6	3	8	2	0	19			
		0.0	31.6	15.8	42.1	10.5	0.0	6.2			
		0.0	16.7	4.5	9.8	3.0	0.0				
		0.0	1.9	1.0	2.6	0.6	0.0				
PERSISTER	1.	3	30	63	74	64	55	289			
		1.0	10.4	21.8	25.6	22.1	19.0	93.8			
		100.0	83.3	95.5	90.2	97.0	100.0				
		1.0	9.7	20.5	24.0	20.8	17.9				
Column Total		3	36	66	82	66	55	308			
Total		1.0	11.7	21.4	26.6	21.4	17.9	100.0			
Chi Square = 13.91396 with 5 Degrees of freedom Significance = 0.0162											

VAR034									
GROUP	Count							Row Total	
	Row %								
	Col %								
	Total	0.	1.	2.	3.	4.	5.		
DROPOUT	0.	2	2	11	2	1	1	19	
		10.5	10.5	57.9	10.5	5.3	5.3	6.2	
		18.2	8.3	6.7	2.0	33.3	25.0		
		0.6	0.6	3.6	0.6	0.3	0.3		
PERSISTER	1.	9	22	154	99	2	3	289	
		3.1	7.6	53.3	34.3	0.7	1.0	93.8	
		81.8	91.7	93.3	98.0	66.7	75.0		
		2.9	7.1	50.0	32.1	0.6	1.0		
Column Total		11	24	165	101	3	4	308	
		3.6	7.8	53.6	32.8	1.0	1.3	100.0	
Chi Square = 12.34382 with 5 Degrees of freedom Significance = 0.0304									

DROPOUT AND PERSISTER COMPARISON

VAR042							
GROUP	Count						Row Total
	Row %						
	Col %						
	Total %	1.	2.	3.	4.	5.	
DROPOUT	0.	1	2	4	2	10	19
	I	5.3	10.5	21.1	10.5	52.6	6.2
	I	1.0	14.3	21.1	6.9	6.9	
	I	0.3	0.6	1.3	0.6	3.2	
	-I	-I	-I	-I	-I	-I	
PERSISTER	1.	100	12	15	27	135	289
	I	34.6	4.2	5.2	9.3	46.7	93.8
	I	99.0	85.7	78.9	93.1	93.1	
	I	32.5	3.9	4.9	8.8	43.8	
	-I	-I	-I	-I	-I	-I	
Column Total		101	14	19	29	145	308
		32.8	4.5	6.2	9.4	47.1	100.0
Chi Square = 13.70404 with 4 Degrees of freedom Significance = 0.0083							

VAR051										
GROUP	Count							Row Total		
	Row %									
	Col %									
	Total	0.	1.	2.	3.	4.	5.			
	%	%	%	%	%	%	%			
DROPOUT	0.	0	2	3	2	9	3	19		
	I	0.0	10.5	15.8	10.5	47.4	15.8	6.2		
	I	0.0	2.7	3.3	2.9	18.8	11.5			
	I	0.0	0.6	1.0	0.6	2.9	1.0			
PERSISTER	1.	1	72	87	67	39	23	289		
	I	0.3	24.9	30.1	23.2	13.5	8.0	93.8		
	I	100.0	97.3	96.7	97.1	81.3	88.5			
	I	0.3	23.4	28.2	21.8	12.7	7.5			
Column Total		1	74	90	69	48	26	308		
Total		0.3	24.0	29.2	22.4	15.6	8.4	100.0		
Chi Square = 18.54782 with 5 Degrees of freedom Significance = 0.0023										

DROPOUT AND PERSISTER COMPARISON

VAR056															
Count		I													
Row %		I													
Col %		I													
GROUP	Total	%	0.	1.	2.	3.	4.	5.	Row Total						
	I	I	I	I	I	I	I	I	I	I	I	I			
DROPOUT	0.	I	0	I	3	I	4	I	4	I	5	I	3	I	19
	I	0.0	I	15.8	I	21.1	I	21.1	I	26.3	I	15.8	I	6.2	
	I	0.0	I	1.7	I	7.4	I	12.1	I	19.2	I	16.7	I		
	I	0.0	I	1.0	I	1.3	I	1.3	I	1.6	I	1.0	I		
PERSISTER	1.	I	2	I	172	I	50	I	29	I	21	I	15	I	289
	I	0.7	I	59.5	I	17.3	I	10.0	I	7.3	I	5.2	I	93.8	
	I	100.0	I	98.3	I	92.6	I	87.9	I	80.9	I	83.3	I		
	I	0.6	I	55.8	I	16.2	I	9.4	I	6.8	I	4.9	I		
Column			2	175	54	33	26	18	308						
Total			0.6	56.8	17.5	10.7	8.4	5.8	100.0						
Chi Square = 19.38456 with 5 Degrees of freedom Significance = 0.0016															

VAR062															
Count		I													
Row %		I													
Col %		I													
GROUP	Total	%	0.	1.	2.	3.	4.	5.	Row Total						
DROPOUT	0.	I	0	I	2	I	5	I	3	I	6	I	3	I	19
	I	0.0	I	10.5	I	26.3	I	15.8	I	31.6	I	15.8	I	6.2	
	I	0.0	I	18.2	I	19.2	I	4.8	I	6.2	I	2.7	I		
	I	0.0	I	0.6	I	1.6	I	1.0	I	1.9	I	1.0	I		
PERSISTER	1.	I	1	I	9	I	21	I	60	I	93	I	107	I	289
	I	0.3	I	3.1	I	7.3	I	20.8	I	31.5	I	37.0	I	93.8	
	I	100.0	I	81.8	I	80.8	I	95.2	I	93.8	I	97.3	I		
	I	0.3	I	2.9	I	6.8	I	19.5	I	29.5	I	34.7	I		
Column Total			1	11	26	63	97	110	308						
Total			0.3	3.6	8.4	20.5	31.5	35.7	100.0						
Chi Square = 12.93831 with 5 Degrees of freedom Significance = 0.0240															

DROPOUT AND PERSISTER COMPARISON

		VAR063							
		Count						Row	
		Row %						Total	
		Col %							
		Total %	1.	2.	3.	4.	5.		
GROUP									
DROPOUT	0.								
		10.5	0.0	15.8	42.1	31.6		19	
		50.0	0.0	9.4	9.6	3.4		6.2	
		0.6	0.0	1.0	2.6	1.9			
PERSISTER	1.								
		0.7	3.8	10.0	26.0	59.5		289	
		50.0	100.0	90.6	90.4	96.6		93.6	
		0.6	3.6	9.4	24.4	55.8			
Column		4	11	32	83	178		308	
Total		1.3	3.6	10.4	26.9	57.8		100.0	
Chi Square = 18.70163 with 4 Degrees of freedom Significance = 0.0009									

		VAR071							
		Count						Row	
		Row %						Total	
		Col %							
		Total %	1.	2.	3.	4.	5.		
GROUP									
DROPOUT	0.								
		15.8	5.3	21.1	26.3	31.6		19	
		42.9	11.1	7.7	5.7	3.9		6.2	
		1.0	0.3	1.3	1.6	1.9			
PERSISTER	1.								
		1.4	2.8	16.6	28.4	50.9		289	
		57.1	88.9	92.3	94.3	96.1		93.8	
		1.3	2.6	15.6	26.6	47.7			
Column		7	9	52	87	153		308	
Total		2.3	2.9	16.9	28.2	49.7		100.0	
Chi Square = 18.22802 with 4 Degrees of freedom Significance = 0.0011									

DROPOUT AND PERSISTER COMPARISON

VAR077															
GROUP	Count	I							Row Total						
	Row %	I													
	Col %	I													
	Total %	I	0.I	1.I	2.I	3.I	4.I	5.I							
DROPOUT	0.	I	0	I	8	I	7	I	2	I	1	I	1	I	19
		I	0.0	I	42.1	I	36.8	I	10.5	I	5.3	I	5.3	I	6.2
		I	0.0	I	21.6	I	6.7	I	3.6	I	1.5	I	2.6	I	
		I	0.0	I	2.6	I	2.3	I	0.6	I	0.3	I	0.3	I	
		-I-	-I-	-I-	-I-	-I-	-I-	-I-	-I-	-I-	-I-	-I-	-I-	-I-	
PERSISTER	1.	I	6	I	29	I	97	I	54	I	65	I	38	I	289
		I	2.1	I	10.0	I	33.6	I	18.7	I	22.5	I	13.1	I	93.8
		I	100.0	I	78.4	I	93.3	I	96.4	I	98.5	I	97.4	I	
		I	1.9	I	9.4	I	31.5	I	17.5	I	21.1	I	12.3	I	
		-I-	-I-	-I-	-I-	-I-	-I-	-I-	-I-	-I-	-I-	-I-	-I-	-I-	
Column Total			6		37		104		56		66		39		308
			1.9		12.0		33.8		18.2		21.4		12.7		100.0
Chi Square = 19.71269 with 5 Degrees of freedom Significance = 0.0014															

VAR081															
GROUP	Count							Row Total							
	Row %														
	Col %														
	Total %	0.I	1.I	2.I	3.I	4.I	5.I								
DROPOUT	0.	I	0	I	0	I	6	I	6	I	5	I	2	I	19
	I	0.0	I	0.0	I	31.6	I	31.6	I	26.3	I	10.5	I	6.2	
	I	0.0	I	0.0	I	11.8	I	17.6	I	4.4	I	2.6	I		
	I	0.0	I	0.0	I	1.9	I	1.9	I	1.6	I	0.6	I		
	I		I		I		I		I		I		I		
PERSISTER	1.	I	1	I	31	I	45	I	28	I	109	I	75	I	289
	I	0.3	I	10.7	I	15.6	I	9.7	I	37.7	I	26.0	I	93.8	
	I	100.0	I	100.0	I	88.2	I	82.4	I	95.6	I	97.4	I		
	I	0.3	I	10.1	I	14.6	I	9.1	I	35.4	I	24.4	I		
	I		I		I		I		I		I		I		
Column Total			1	31	51	34	114	77	308						
Total			0.3	10.1	16.6	11.0	37.0	25.0	100.0						
Chi Square = 14.92453 with 5 Degrees of freedom Significance = 0.0107															

DROPOUT AND PERSISTER COMPARISON

		VAR083								
		Count							Row	
		Row %							Total	
		Col %								
GROUP	Total	%	0.I	1.I	2.I	3.I	4.I	5.I		
DROPOUT	0.	I	I	I	I	I	I	I		
	I	5.3	I	15.8	I	5.3	I	10.5	I	57.9
	I	50.0	I	37.5	I	7.1	I	8.0	I	1.5
	I	0.3	I	1.0	I	0.3	I	0.6	I	0.3
	-I	-I	-I	-I	-I	-I	-I	-I	-I	-I
PERSISTER	1.	I	I	I	I	I	I	I		
	I	0.3	I	1.7	I	4.5	I	8.0	I	22.1
	I	50.0	I	62.5	I	92.9	I	92.0	I	98.5
	I	0.3	I	1.6	I	4.2	I	7.5	I	20.8
	-I	-I	-I	-I	-I	-I	-I	-I	-I	-I
Column Total			2	8	14	25	65	194		
			0.6	2.6	4.5	8.1	21.1	63.0	308	
Chi Square =		22.86422 with 5 Degrees of freedom Significance = 0.0004								

VAR087									
	Count	I							
	Row %	I							
	Col %	I							Row Total
GROUP	Total %	I	0.I	1.I	2.I	3.I	4.I	5.I	
		I	I	I	I	I	I	I	
	0.	I	0	2	0	4	9	4	19
DROPOUT		I	0.0	10.5	0.0	21.1	47.4	21.1	6.2
		I	0.0	50.0	0.0	9.5	10.7	2.4	
		I	0.0	0.6	0.0	1.3	2.9	1.3	
		I	I	I	I	I	I	I	
	1.	I	3	2	5	38	75	166	289
PERSISTER		I	1.0	0.7	1.7	13.1	26.0	57.4	93.8
		I	100.0	50.0	100.0	90.5	89.3	97.6	
		I	1.0	0.6	1.6	12.3	24.4	53.9	
		I	I	I	I	I	I	I	
	Column Total		3	4	5	42	84	170	308
	Total		1.0	1.3	1.6	13.6	27.3	55.2	100.0
Chi Square = 21.89383 with 5 Degrees of freedom Significance = 0.0006									

DROPOUT AND PERSISTER COMPARISON

		VAR095						
		Count						Row
		Row %						Total
		Col %						
		Total %	0,I	1,I	2,I	3,I	4,I	5,I
GROUP								
DROPOUT	0.	0	3	7	4	3	2	19
		0.0	15.8	36.8	21.1	15.8	10.5	6.2
		0.0	15.8	13.5	11.4	3.2	1.9	
		0.0	1.0	2.3	1.3	1.0	0.6	
PERSISTER	1.	2	16	45	31	90	105	289
		0.7	5.5	15.6	10.7	31.1	36.3	93.8
		100.0	84.2	86.5	88.6	96.8	98.1	
		0.6	5.2	14.6	10.1	29.2	34.1	
Column Total			2	19	52	35	93	107
			0.6	6.2	16.9	11.4	30.2	34.7
								100.0

Chi Square = 14.42939 with 5 Degrees of freedom Significance = 0.0131

		VAR096						
		Count						Row
		Row %						Total
		Col %						
		Total %	0,I	1,I	2,I	3,I	4,I	5,I
GROUP								
DROPOUT	0.	0	1	6	6	4	2	19
		0.0	5.3	31.6	31.6	21.1	10.5	6.2
		0.0	11.1	17.6	8.7	2.8	3.9	
		0.0	0.3	1.9	1.9	1.3	0.6	
PERSISTER	1.	3	8	28	63	138	49	289
		1.0	2.8	9.7	21.8	47.8	17.0	93.8
		100.0	88.9	82.4	91.3	97.2	96.1	
		1.0	2.6	9.1	20.5	44.8	15.9	
Column Total			3	9	34	69	142	51
			1.0	2.9	11.0	22.4	46.1	16.6
								100.0

Chi Square = 12.27830 with 5 Degrees of freedom Significance = 0.0312

DROPOUT AND PERSISTER COMPARISON

		VAR097						
		Count						
		Row %						
		Col %						
GROUP	Total	%	0.	1.	2.	3.	4.	5.
DROPOUT	0.	I	0	2	5	6	5	1
	I	0.0	I	10.5	I	26.3	I	26.3
	I	0.0	I	11.8	I	9.6	I	16.7
	I	0.0	I	0.6	I	1.6	I	1.9
PERSISTER	1.	I	3	15	47	30	120	74
	I	1.0	I	5.2	I	16.3	I	10.4
	I	100.0	I	88.2	I	90.4	I	83.3
	I	1.0	I	4.9	I	15.3	I	9.7
Column Total			3	17	52	36	125	75
			1.0	5.5	16.9	11.7	40.6	24.4
								100.0

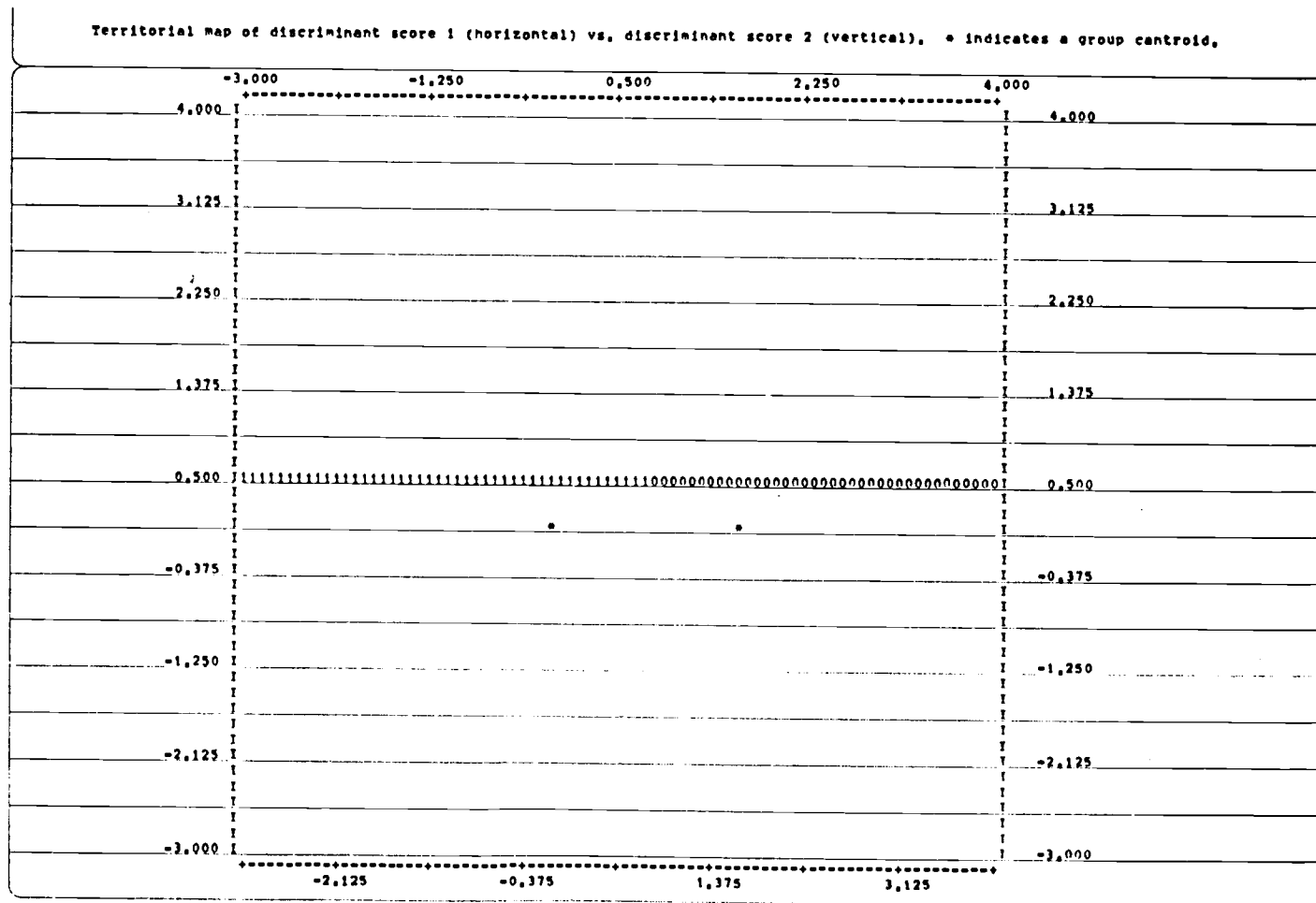
Chi Square = 13.08364 with 5 Degrees of freedom Significance = 0.0226

		VAR099						
		Count						
		Row %						
		Col %						
GROUP	Total	%	0.	1.	2.	3.	4.	5.
DROPOUT	0.	I	0	3	2	5	6	3
	I	0.0	I	15.8	I	10.5	I	26.3
	I	0.0	I	23.1	I	5.0	I	13.9
	I	0.0	I	1.0	I	0.6	I	1.6
PERSISTER	1.	I	3	10	38	31	156	51
	I	1.0	I	3.5	I	13.1	I	10.7
	I	100.0	I	76.9	I	95.0	I	86.1
	I	1.0	I	3.2	I	12.3	I	10.1
Column Total			3	13	40	36	162	54
			1.0	4.2	13.0	11.7	52.6	17.5
								100.0

Chi Square = 12.15495 with 5 Degrees of freedom Significance = 0.0327

Appendix D

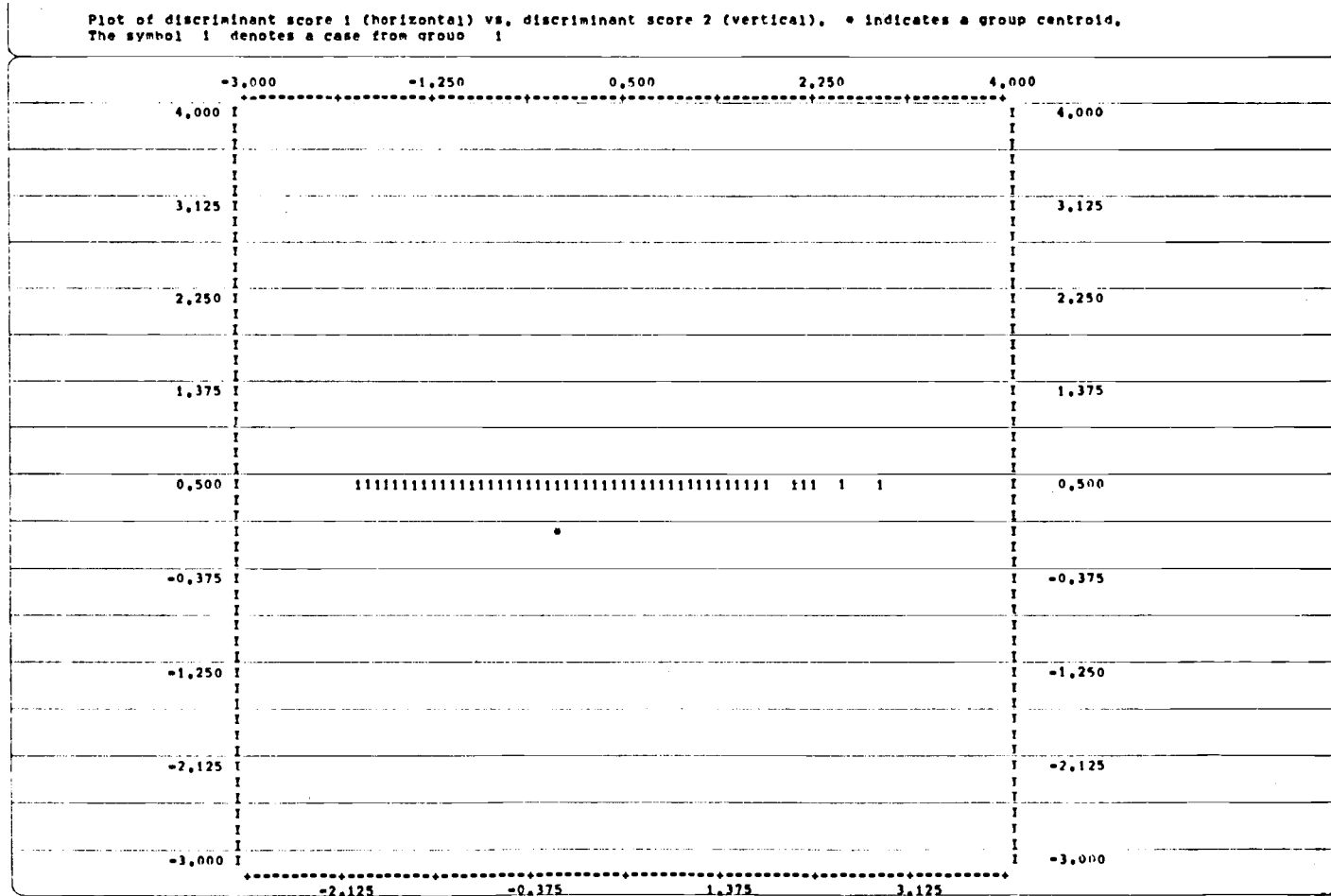
TERRITORIAL MAP OF DROPOUT AND PERSISTER GROUPS (PARAMETERS AND MEANS)



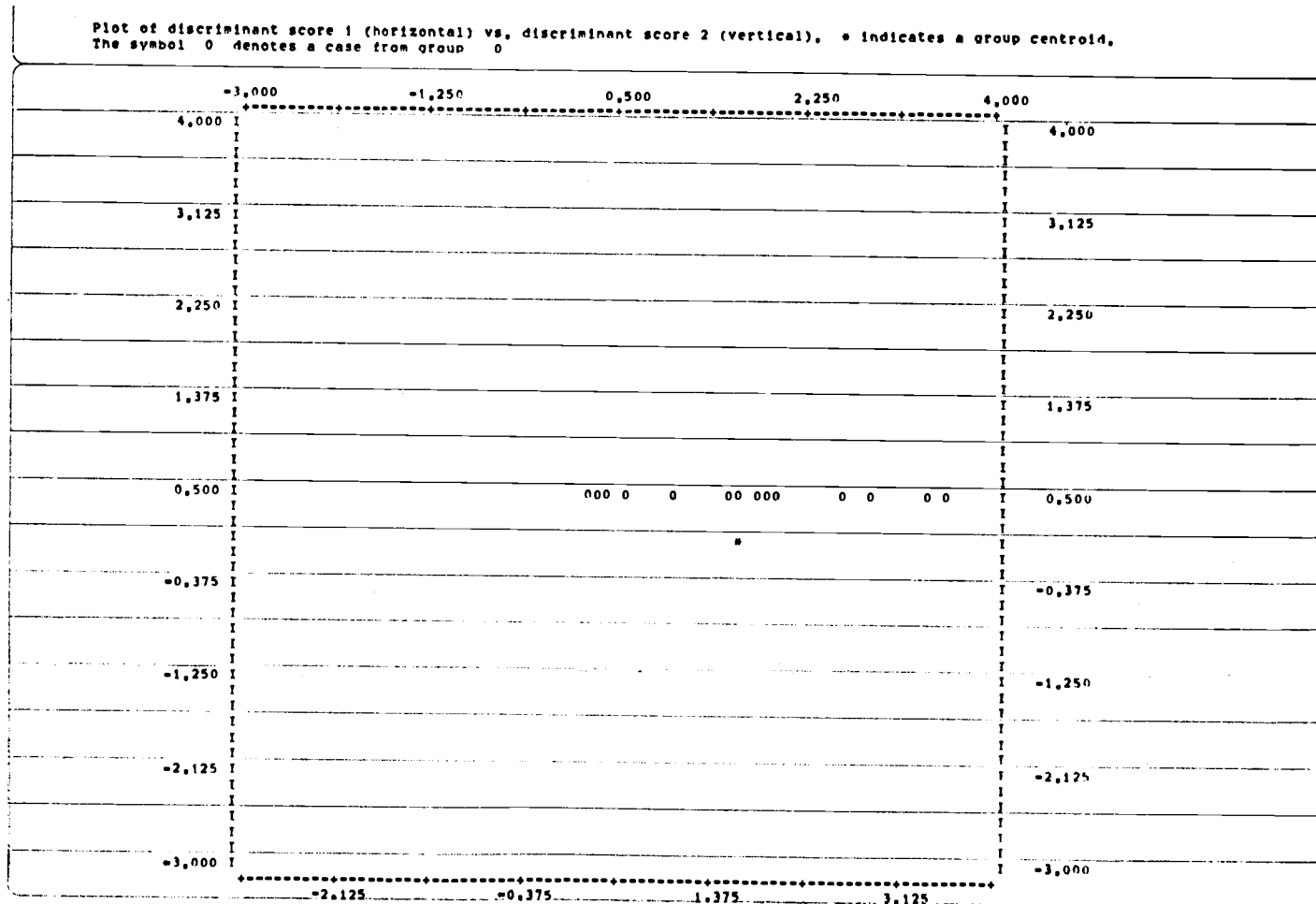
1 = persisters

0 = dropouts

Appendix E
PERSISTER GROUP PARAMETERS AND MEAN



Appendix F
DROPOUT GROUP PARAMETERS AND MEAN



Appendix G

SAMPLE: DISCRIMINANT SCORES CLASSIFICATION--DROPOUTS

Case		Missing	Actual	Highest probability		2nd highest		Discriminant scores	
SUBFIL	SEQNUM	Values	Group	Group	P(X/G)	P(G/X)	Group	P(G/X)	FUNC 1
NONA	18.	0	0	0	0.989	0.997	1	0.003	3.407
NONA	20.	0	0	0	1.000	0.833	1	0.167	1.519
NONA	25.	0	0	0	1.000	0.855	1	0.145	1.596
NONA	27.	0	0	0	1.000	0.864	1	0.136	1.630
NONA	32.	0	0	0	0.980	0.998	1	0.002	3.528
NONA	33.	0	0	0	1.000	0.932	1	0.068	1.978
NONA	36.	0	0	0	1.000	0.848	1	0.152	1.568
NONA	45.	0	0	0	1.000	0.916	1	0.084	1.874
NONA	48.	0	0	****	1	1.000	0.730	0	0.270
NONA	57.	0	0	0	1.000	0.867	1	0.133	1.542
NONA	76.	0	0	****	1	1.000	0.614	0	0.386
NONA	128.	0	0	0	1.000	0.635	1	0.365	1.036
NONA	184.	0	0	****	1	1.000	0.767	0	0.233
NONA	196.	0	0	0	1.000	0.873	1	0.127	1.665
NONA	213.	0	0	****	1	1.000	0.683	0	0.317
NONA	250.	0	0	0	1.000	0.989	1	0.011	2.853
NONA	254.	0	0	0	1.000	0.897	1	0.103	1.771
NONA	305.	0	0	0	1.000	0.981	1	0.019	2.597
NONA	306.	0	0	0	1.000	0.862	1	0.138	1.621

**** denotes incorrect classification

SAMPLE: DISCRIMINANT SCORES CLASSIFICATION--PERSISTERS

Case	Missing	Actual	Highest probability	2nd highest	Discriminant scores
SURFIL SEQNUM	Values	Group	Group P(X/G) P(G/X)	Group P(G/X)	FUNC 1
NONA 1.	0	1	1 1.000 0.916	0 0.084	-0.308
NONA 2.	0	1	1 1.000 0.891	0 0.109	-0.176
NONA 3.	0	1	1 1.000 0.549	0 0.451	0.694
NONA 4.	0	1	1 1.000 0.841	0 0.159	0.022
NONA 5.	0	1	1 1.000 0.834	0 0.166	0.044
NONA 6.	0	1 ****	1 1.000 0.947	1 0.053	2.097
NONA 7.	0	1	1 0.998 0.994	0 0.006	-1.537
NONA 8.	0	1	1 1.000 0.935	0 0.065	-0.434
NONA 9.	0	1	1 1.000 0.944	0 0.056	-0.511
NONA 10.	0	1 ****	0 1.000 0.634	1 0.366	1.035
NONA 11.	0	1	1 1.000 0.972	0 0.028	-0.834
NONA 12.	0	1	1 1.000 0.965	0 0.035	-0.738
NONA 13.	0	1 ****	0 1.000 0.897	1 0.103	1.775
NONA 14.	0	1	1 1.000 0.897	0 0.103	-0.207
NONA 15.	0	1	1 1.000 0.674	0 0.326	0.452
NONA 16.	0	1	1 1.000 0.824	0 0.176	0.076
NONA 17.	0	1	1 1.000 0.844	0 0.156	0.010
NONA 19.	0	1	1 1.000 0.866	0 0.134	-0.071
NONA 21.	0	1	1 1.000 0.797	0 0.203	0.157
NONA 22.	0	1 ****	0 1.000 0.723	1 0.277	1.223
NONA 23.	0	1	1 1.000 0.932	0 0.068	-0.418
NONA 24.	0	1 ****	0 1.000 0.651	1 0.349	1.068
NONA 26.	0	1 ****	0 1.000 0.703	1 0.297	1.177
NONA 28.	0	1	1 1.000 0.621	0 0.379	0.557
NONA 29.	0	1	1 1.000 0.903	0 0.097	-0.238
NONA 30.	0	1	1 1.000 0.968	0 0.032	-0.777
NONA 31.	0	1	1 1.000 0.832	0 0.168	0.052
NONA 34.	0	1	1 1.000 0.968	0 0.032	-0.773
NONA 35.	0	1 ****	0 1.000 0.585	1 0.415	0.940
NONA 37.	0	1	1 1.000 0.989	0 0.011	-1.272
NONA 38.	0	1	1 1.000 0.824	0 0.176	0.077
NONA 39.	0	1 ****	0 1.000 0.977	1 0.023	2.502
NONA 40.	0	1	1 1.000 0.901	0 0.099	-0.225
NONA 41.	0	1	1 1.000 0.989	0 0.011	-1.284
NONA 42.	0	1	1 1.000 0.971	0 0.029	-0.819
NONA 43.	0	1	1 1.000 0.975	0 0.025	-0.889
NONA 44.	0	1	1 0.999 0.991	0 0.009	-1.384
NONA 46.	0	1	1 1.000 0.530	0 0.470	0.729
NONA 47.	0	1	1 1.000 0.775	0 0.225	0.218

**** denotes incorrect classification