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This study of student attrition in a public junior college used personality measures and demographic data as independent variables. Student dropout, defined as failure to complete the semester or to transfer to another institution, was the dependent variable. Instruments used were the Omnibus Personality Inventory, the Adaptive-Flexibility Inventory, and a questionnaire constructed for the study. Subjects were 259 freshmen beginning school in a Los Angeles community college in spring semester 1968. Personality configurations displayed by subject students on the OPI were compared with scores attained by a UCLA freshman group and with a normative group. The junior college population was more homogeneous than either reference group on every scale. Significant relationships were found between high Complexity scores and dropout. Other significant findings were: dropouts were enrolled for fewer than twelve units; tended to be employed more time outside of school; had attended more schools prior to tenth grade; had mothers with less education. Dropouts had lower mean scores on the A-F Inventory, but the differences were not significant. (Author)

Final Report

**Project No. 8-I-055
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**THE RELATIONSHIPS AMONG STUDENT CHARACTERISTICS,
CHANGED INSTRUCTIONAL PRACTICES
AND STUDENT ATTRITION IN JUNIOR COLLEGE**

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June 1969

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SUMMARY

This study of student attrition in a public junior college used personality measures and demographic data as independent variables. Student dropout, defined as failure to complete the semester or failure to enroll for a second semester or to transfer to another institution, was the dependent variable. Instruments administered were the Omnibus Personality Inventory, the Adaptive-Flexibility Inventory, and a questionnaire built for the study. Subjects were 259 freshmen beginning school in a Los Angeles community college in spring semester, 1968.

Personality configurations displayed by subject students on the OPI were compared with scores attained by a UCLA freshman group and with a normative group. The junior college population was more homogeneous than either reference group on every scale. Significant relationships were found between high Complexity scores and dropout. Other significant findings: dropouts were enrolled for fewer than 12 units; tended to be employed more time outside of school; had attended more schools prior to 10th grade; had mothers with less education. Dropouts had lower mean scores on the A-F Inventory but the difference was not significant.

MEASURING STUDENT CHARACTERISTICS: PERSONALITY AND DROPOUT

Overview

The assessment of people in higher education serves many purposes. Students are examined in order to assess previous school achievement, predict academic success, select-into and select-out of particular institutions, determine individual personality characteristics, evaluate environmental perceptions, place candidates in special occupational programs, and, finally, to gain knowledge about the effects of education beyond high school. Any or all of these aims may be pursued at any given institution.

It is a common practice for colleges and universities to require from their entering students certain scores on aptitude and/or achievement tests. Accordingly, college admissions testing has become big business; most schools -- junior colleges, four-year colleges, and universities public and private -- draw heavily upon it. Different schools may require different tests (e.g., The College Entrance Examination Board's Scholastic Aptitude Tests; the American College Testing Program's ACT), but few individuals who decide to continue their schooling beyond the twelfth grade can escape one or more of these instruments.

Looking at student bodies along the somewhat restricted dimensions of academic talents alone, however, is a limiting pursuit. We do not presently have the data to show systematically ways in which college-going populations perform in response to non-scholastic variables. However, some schools do employ instruments to assess a variety of features of their students and candidates for admission. In-depth investigations have been conducted with Bennington, Vassar, and Sarah Lawrence women (73;107;33;72); with medical students at Johns Hopkins (100); with psychiatric residents at the Menninger Clinic (49); with cross-campus groups at Penn State (32); and with selected samples of Princeton men, (42). A host of students at other colleges have also been examined. Corroborating the apparent need for such research, Ford and Urban pointed out that

One of the first things a university must do is to acquire some base rates of information about its own individual situation. It must arrange for a steady flow of data and research concerning the admission, academic performance and related characteristics of its students. Careful study of both graduates and dropouts is essential. It is only by such feedback that a university can evaluate its efforts and discover those aspects of its operation which need to be improved (36:84)

Beyond the acquisition of information about their own student bodies for their own purposes, colleges and universities provide material that may add to existing knowledge about the general nature of the educational process. Thus, research studies of college students serve as relevant links to curriculum development, extra-curricular program planning, and related areas. They also offer unique opportunities to study adolescents and young adults in prescribed situations, providing

...a strategic opportunity for generating, refining, and validating hypotheses about late-adolescent personality development, the processes of education, and the interaction of the individual in a reasonably discreet environment (9:717).

Although the "reasonably discreet" nature of the college environment may well be questioned today, concentrations of people in somewhat circumscribed areas do, indeed, offer opportunities to examine both individuals and institutions. This is particularly important because, while the entire college experience is supposed to result in certain changes in students, it affects the individual in different ways. The results of academic encounters demonstrated by certain overt student changes are often considered merely in terms of the so-called cognitive measures. However, the purpose of a college education is not exclusively the attainment of abilities to perform tasks requisite to a certificate, degree, or credential. It thus follows that looking only at cognitive changes is as limited as looking only at academic prerequisites for enrollment (104). Individual personal development, so frequently flaunted as a major goal of college or university, is not a single-pronged dimension.

Research About Students in Higher Education

The complex natures of colleges and universities have been comprehensively dealt with by many researchers. Pace (77) for example, examines college and university environments, Thistlewaite (99) and Holland (48) explore differences in student bodies and Riesman and Jencks (54) interpret the "viable American college." Sanford (87) emphasizes the complexities of American higher education in the twentieth century -- its diverse social structures, its variegated processes, and its many participants, separated

...in varying degrees ... from the larger society with which [they] interact, into which students of great diversity and internal complexity enter, to be developed in such a way that they will possess qualities that are desired by those who support and those who operate the organization (87:41).

This vast institutional empire, with its many separate but related organizations, has stimulated an equally vast amount of research, much of it directed toward the people immediately involved in the enterprise -- students, faculty, administrators (35). Of this group, the students are especially important targets for study because they are the dependent variables upon which the whole structure is founded. And, since they are frequently very different as individuals, they are also interesting targets. Certain basic characteristics, background experiences, and expectations may apply to all students; similarly, certain fundamental needs -- for security, affection, meaningful activities -- may apply to most students. However, their specific needs and expectations and the special ways these are met actually differ along many dimensions (64) and, accordingly, the "collections" of individuals with whom colleges and universities must deal require special kinds of attention. Each student has

...his own expectations and aspirations, assets and liabilities, joys and sorrows. There are almost as many kinds of people in a college or university as there are in the total population of our complex society ... adolescents struggling hard to establish their identities and find the meaning and direction of their lives ... young adults, now being [acknowledged] ... by the society and busily engaged in the serious business of working. And increasingly we find mature men facing, at one and the same time, the tasks of integration and disintegration.

There are those who come seeking knowledge for knowledge's sake and ... others ... looking for skills to help them vocationally in either the near or far future. Within the same campus, we meet both skilled and semi-skilled workmen as well as members of the professional and managerial occupations. ...the rich and the poor, the bright and the dull, the healthy and the sick, the stable and the transient, the novice and the master (111:1,3).

Just as the individuals who comprise these collections of college students differ in various ways, there are also notable differences in the kinds of changes they experience and the extent of these changes -- if, indeed, they take place at all. In the sense of merely providing opportunities for the acquisition of information, education could progress without any apparent changes in the personality patterns of the students (87). In light of today's emphasis on the individual, however, and his subsequent search for expansion in a "personal universe" (76),

such a limitation appears particularly unfortunate, especially if the kind of learning desired in college is

...the kind that involves a change in the individual's structure ... that involves development; ... expansion, differentiation and integration (87:8).

When investigators in academic settings are concerned with differences among personnel, changes in attitudes and values and the unique character of individual personality configuration, they report some interesting findings. For example, Webster, Sanford and Freedman (91) noted that college women, in the time between the freshman and senior years, became more tolerant of individual differences, more rebellious, more critical of authority, less conservative, less authoritarian, and freer in impulse expression. In a four-year comparison of people who attended college and those who did not, Trent and Medsker (103) found significant differences between the two groups in terms of autonomy, intellectual disposition, flexibility, and tolerance. Differences in expressions of satisfaction with their lives were also noted.

Vocational and academic concerns of students in higher education have also been investigated extensively. This issue is of particular interest, since entering freshmen appear to be in especially vulnerable positions as they move from high school situations, where comparatively few choices are available, to wider-based college activities. They may easily become overwhelmed by the sheer immensity of their new schools, the varied curricula, faster pace, and wider selection of occupational alternatives. Pointing to some of the difficulties confronting adolescents, Erikson (27) suggested that it is generally

...the inability to settle on an occupational identity which disturbs young people (27:28).

Occupational identities, of course, are inextricably intertwined with occupational choices and with individual patterning of personality characteristics. These have been widely treated in the literature by such researchers as Roe (83; 84), Super and Crites (98), Holland (48), Bereiter and Freedman (33), Beardslee and O'Dowd (5) and Heist (44).

Other issues that involve different members of the student population have also been the focus of considerable research. Reports about student-peer group influences (74), student-faculty interactions (66; 55; 2), relationships between student needs and the environmental press of the college (77), all swell the educational, psychological, and sociological literature. These and related research activities introduce questions about whether the students' behavior "fits" the college, whether failure results from a lack of proper fit, and whether predictions of student potential actually fit manifest behavior.

At every level of education, problems of academic achievement concern students, parents, schools, and communities. Among the more compelling issues are high attrition rates, "superior" students performing in "mediocre" ways, transfers to different schools or transfers to different fields of study in the same schools, motivational factors, and goal expectations. These problems continue to attract much attention, with gulfs still apparent between the knowledge acquired from such research, its implementation in the school system, and its relevant use in academic situations.

If one important goal of the school is to adequately prepare the "whole person," then questions revolving about academic questions become a single area of concern. Decreasing work hours, increasing automation, and rising amounts of leisure time demand consideration (110; 82). Consistent with a global approach to education is the proposition advanced by Feldman (31) and others who have recommended that vocational-technical school programs be merged with academic programs to produce a "what to do with a whole life" curriculum. Barry and Wolf's (4) "personal orientation" in lieu of "job orientation" also fits into the picture of a comprehensive educational experience and recognizes the "importance of education to the fulfillment of the individual" (36).

Research on the Junior College Student

Pace has pointed out that there is

... a long and distinguished history of research on the characteristics of college students (79).

Published research on the junior college student, however, lags considerably behind research on the four-year college and university student, particularly when non-academic variables are considered. In synthesizing the results of previous research, Cross found that

Research on the junior college student is a new phenomenon ... Almost half the references cited [in this monograph] bear the date of 1966 or 1967, and no attempt was made to conduct any systematic search of the literature prior to 1960 (24).

In fact, when junior college students are examined, they are generally grouped together with other students at different levels of education and/or different types of schools. The longitudinal SCOPE study (School to College: Opportunities for Postsecondary Education) conducted by the Center for Research and Development in Higher Education at Berkeley and sponsored by the College Entrance Examination Board, surveyed high school seniors in California, Illinois, Massachusetts, and North Carolina. Data

were analyzed from 90,000 participants, who fell into three sub-groups: (1) those individuals who did not enter colleges in the fall following their high school graduation; (2) those entering junior colleges, and (3) those entering colleges and universities offering four years or more of higher education.

Another nationwide study, Project TALENT, also looked at high school graduates (37). In comparison with Wolfe's information (109), the findings of the TALENT research indicated that

...enormous changes have taken place in the percentage of top-quarter students going on to college. 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 [on measures of academic ability] (24:13-14).

Trent and Medsker's Beyond High School (103) reports a longitudinal study of 10,000 high school graduates. These young men and women were examined according to many dimensions, in order to look at their intellectual and non-intellectual development and to provide "information about ... patterns of college attendance and employment" (103:31). The project

...follows the personal and vocational development of a large sample of high school graduates during the first four years after graduation. It traces their employment and college attendance patterns between 1959 and 1963 and includes an investigation of factors associated with withdrawal from college. Its focus is on comparisons of two groups -- those who became employed immediately after high school and those who entered college. The groups are compared on the basis of their values and attitudes as measured by psychometric instruments, and also according to their reported evaluation of work and college experiences during the course of study. Thus, employment and college attendance, regarded as primary interviewing environmental factors, were studied for their possible influence on the development of young adults (103:1-2).

Little of the research that emanates directly from the junior college or that deals with junior college students at single institutions finds its way into publication. The Educational Resources Information Center (ERIC) Clearinghouse for Junior Colleges, housed at the University of California, Los Angeles, contains several hundred

reports of research with junior college personnel. It is probable that several times that amount of information, however, lies buried in local administrative files. Much of the material available has been reviewed and synthesized in various Clearinghouse publications. However, the most recent survey was undertaken by Cross (24). Some of the "knowns" and "unknowns" cited may be further summarized as follows:

1. Carefully designed research studies find that junior college students in national, regional, or statewide samples achieve lower mean scores on academic ability tests than comparably selected students at four-year colleges and universities. Some junior college students, however, score high on measures of academic aptitude. Little is actually known about patterns of special abilities among junior college students; further exploration of their strengths is needed.
2. The junior college is presumed to play a significant role in the democratization of American higher education, with parents of these students tending to have lower socio-economic status than parents of students in four-year colleges and universities. However, Jencks and Riesman (54) raise a demurrer to this point, suggesting that "the parents of children who enroll at community colleges are slightly richer than the parents of children at four year institutions." (54:485). Obviously, much more information is needed about junior college students' home environments, parental encouragement, financial standing, and related matters. Similarly, more information is needed about the knowledge held by parents regarding college costs and college financial programs.
3. Clear-cut differences in occupational aspirations exist between non-college, junior college, and four-year college groups, with junior college students generally appearing less settled about future plans than either of the other two groups. However, little is known about those junior college students who do not later transfer to other four-year colleges -- the vocationally-oriented students, the dropouts, or older students returning to pick up new skills simply to revitalize their education.
4. Junior college students have more practical orientations to life and to college than their four-year college peers. They are less intellectually disposed, score lower on measures of autonomy and non-authoritarianism, appear

more cautious and controlled, are less likely to be adventurous and flexible, and are more unsure of themselves. Yet the research on personality characteristics of junior college students is meager and more information is needed regarding their values, feelings about selves, and interpersonal relationships.

5. In terms of their preparation for college, general academic abilities, and confidence in previous academic achievements, junior college students are seen as consistently falling below four-year college students. However, there may well be other areas in which they excel (104) and these need examination. If previous lack of satisfaction in academic activities can be understood, it may be overcome eventually and/or compensated by competence in other roles. If the community college student has had a chance to demonstrate success in non-academic avenues, can he then better cope with academic tasks? Would a year of delay, a kind of "moratorium" in Erikson's (27) sense, better allow him to recharge, reassess motives and interests, and, eventually, function successfully with other kinds of student who had not required this period for personal evaluation? Perhaps one of the underlying, even unconscious, cries today of the youth who asks for "relevance" is actually a plea to let him assess himself in terms of what the educational schema are all about, without untoward pressures from that system.

There are many reasons for looking at student bodies in universities and colleges. Thus, since there are wide gaps in our knowledge about the ways people function and how optional functioning may be encouraged, there are many reasons for further studying the student enrolled in American higher education. Junior college students, rapidly growing in numbers and representing all strata of American society, are particularly valuable targets for study.

Chapter II

THE STUDY: SUBJECTS AND PROCEDURES

The examination of students in higher education is a well-established practice. Many schools assess both cognitive and affective measures for purposes of characterizing their student bodies, better understanding the population as a total group, evaluating individuals in comparison with normative samples, and predicting academic and interpersonal behaviors. A growing, but less firmly-established, practice is the appraisal of college personnel for the explicit purpose of gaining information about the college environment. Pace's (78) "College and University Environment Scales" (CUES), for example, rates schools on the basis of the students' perceptions. Thus, the total academic milieu is determined by individual reactions to five general dimensions: Practicality, Community, Awareness, Propriety, and Scholarship. However, the fact that student assessment can provide information about the institution as well as about the individual respondent is not widely recognized.

One way of discovering answers to questions about a school's effect upon its students or a course's relevance to its students' needs-- questions not easily resolved -- is to look at the students themselves. If students are assessed upon matriculation and upon leaving school, the changes that occur may be a measure of the college's general effectiveness. Accordingly, such examination becomes part of the total organization scheme, with the students acting as both input and product.

Individual examination for the dual purpose of learning about students and studying the institutional impact appears to be a particularly important approach to evaluating the American community college. Sixty years old, growing at an unprecedented rate in terms of actual number of schools and number of people involved, the junior college is still seeking independence, recognition, and awareness of its role in higher education. Its very identity is questioned. The

...searching adolescent that is the community college of today -- so seriously seeking definition and ... reality -- is often described as a "teaching institution," as a place where faculty shuns research activities in favor of teaching roles ... Simply calling it a "teaching institution," [however] is not enough. (8:XI,XII).

One way of examining the effect of the community college, as well as of defining its identity more clearly, is to look at students in terms of their personality characteristics and their academic achievements (17). Another way is to assess the schools' attrition

rates. Although much has been written about the junior college dropout, little is actually known. Who is he? What are his abilities and aspirations? Why does he leave? Knowing more of the dropout alone would help bring the junior college into focus.

The purpose of this monograph is to look at the freshman student in one community college with particular emphasis on his personality characteristics and his propensity to withdraw or to persist in school. Purposes must arise from concepts and theoretical positions. Essential to the rationale--hence the purposes of the studies discussed in this monograph--are the following points:

- 1) People differ in many important respects
- 2) These differences may be assessed in terms of certain demographic cognitive and personality dimensions
- 3) The traditional means of examining junior college students often fail to provide data useful for better understanding them
- 4) The traditional means of looking at junior college students have not always encouraged the implementation of school programs to better serve them
- 5) It is possible that neither contemporary nor future practices of assessment will make any difference in understanding or serving students
- 6) It is possible that no changes in procedures should be made--perhaps we are doing as well now as we can
- 7) One way of looking at the junior college student is in terms of his personality characteristics as compared with other people of comparable ages, in different kinds of academic institutions, and not enrolled in any school at all
- 8) Personality characteristics may well point to the reasons that certain students stay in school, others leave before completing their programs, and still others do not continue their schooling beyond the twelfth grade
- 9) Personality characteristics may suggest why particular colleges have differential effects on individual students
- 10) Central to personality is the concept, ego strength; hence, measuring ego functioning represents a poten-

tially useful approach to assessing junior college students.

This investigation deals with some of the knowns and some of the unknowns regarding junior college students. Concerned with a small segment of an entering freshman class at a large suburban community college, the study draws a picture of the incoming student. It looks at a particular set of characteristics so that baseline data may be provided about individual development status and about certain demographic features. Designed to assess student personality characteristics as they relate to two independent variables -- student heterogeneity and student attrition -- it suggests some alternative ways of viewing students.

Subjects

The subjects of this study were students in a California community junior college of 8500 students, one of several colleges in a large city district. This college offers post-high school curricula including general, vocational, and lower-division college programs. Of the 259 entering freshmen included in the sample, 175 were men, 74 women, and 10 did not designate sex. Their ages ranged from 17 to 30, with a mean and median of 18 years.

Approximately equal numbers of the total population were enrolled in each of three introductory English courses, one class selected from each of twenty instructors. However, the total population of 259 did not respond to both instruments because testing occurred over two class periods and because students may not have attended both the first and second class sessions.

Procedures

Gathering data for a study must always be a deliberate exercise. The process has a phenomenally large number of problems attached to it. The sample population must be selected with an eye to the feasibility of obtaining necessary responses. Valid instruments must be chosen and instructions for their administration must be carefully drawn.

Because of difficulty in collecting adequate data, many studies suffer from unintentional bias. Most investigations of junior college dropouts collect data by means of questionnaires sent to all students who left school before completing their programs. It is extremely difficult, however, to find students once they have gone; accordingly, returns rarely reach the thirty per cent level. Unfortunately the researcher often accepts the questionnaires he obtains and generalizes from that undoubtedly biased sample to the entire population. As a consequence, the data are of little value in predicting potential dropouts or in understanding those who are.

One way to collect information about dropouts is to do it before the students leave the college. Because students withdraw from classes beginning with the first week, instruments should be applied during the first few days of school; thus, all necessary information can be collected and later related to both dropout and per-sister groups. Failure to collect the information from a sample of all students forces the researcher to attempt to track down dropouts post hoc. More and more, the junior college is attracting students who drop in, stay for a few weeks, and then leave. If that group is to be sampled accurately, instruments must be used at the very beginning of the term.

Population sampling is another procedure rarely followed in junior college research. It is not necessary for all members of the group being studied to respond to all tests for inferences to be drawn regarding the whole population.

In the current study, tests were administered at the beginning of the term and population sampling was employed. Because most entering freshmen take an English course, selection of students to participate in the study was made on the basis of their presence in selected English classes on the first or second day of the Spring semester, 1968. To avoid biased results caused by the influence of single instructors, one class was chosen from each of the twenty instructors in the department. Students at different levels of competence were obtained by using eight English I classes, five English 21, and nine English 30. English I is the university transfer course that demands scores of 56 or better on the Cooperative English Test. English 21, designed to prepare students for English I, requires test scores between 45 and 55. English 30 is a remedial course for students who achieve test scores between 27 and 44. In addition to test scores, the college also collects an essay, so that borderline students may be placed into one or another class on the basis of written performance.

The tests were given by the instructors under the direction of the research team. Each instructor was asked to adhere to the following directions:

TO: All members of the English Department

On either Tuesday, January 30 and Thursday, February 1 or Wednesday, January 31 and Friday, February 2, 1968, one of your classes will be tested for the joint community college-UCLA project. The following points should facilitate the testing procedure.

A. First testing day:

1. Please put the ticket number of your class on the blackboard so that all students will be able to record it on their questionnaire.

2. Distribute to each student one questionnaire and one Adaptive-Flexibility Inventory booklet.
 3. Instruct the students to fill out the questionnaire first, as quickly and accurately as possible.
 4. After completing the questionnaire, students should complete the information on the cover of the Adaptive-Flexibility Inventory. They should then read directions on second page and respond to words.
 5. All students should be able to complete both instruments within the first class period. However, even if they are not completed, they must be turned in to the instructor by the end of the hour.
 6. If a student straggles into class too late for him to reasonably be expected to complete both instruments (more than 15 minutes after scheduled class opening), he should be dismissed from participating in the study. This means that he will not take the test at the second class meeting either.
 7. Please see that the students observe general test regulations at both meetings -- no talking, no discussion.
 8. There are no right or wrong answers to any of these instruments. Each student should respond in the way most fitting to him.
 9. Questionnaires and tests will be picked up at the end of the class hour or please return them to English office.
- B. Second testing day:
1. Please again put ticket number of class on board.
 2. Give each student an Omnibus Personality Inventory (OPI) booklet and an IBM answer sheet.
 3. Ask students to put ticket number of class and his own name on answer sheet. We don't need any other information.
 4. Announce: Do not write on test booklet.
 5. This inventory should be completed within the allotted class time. Again, however, if it is not completed, it must still be turned into the instructor at end of period.
 6. Booklets and answer sheets will be picked up at end of class period or please return to English office.

NOTE: IF STUDENTS INQUIRE ABOUT THE PURPOSES OF THIS TESTING PROGRAM, TELL THEM IT IS FOR A GENERAL RESEARCH STUDY AND THAT THEIR DATA WILL BE MERGED WITH THAT COMING FROM ALL OTHER PARTICIPATING STUDENTS.

Thank you.

Chapter III

THE STUDY: INSTRUMENTS

Beginning with Cattell's early work (12) on intelligence tests, various types of measuring devices have been developed through the years to obtain knowledge about the ways people function. Many books have been published, much research conducted, and a series of mental measurement yearbooks established (10;11) to deal with the validity, reliability, and selection of these instruments.

Among the many determinations necessary for conducting research, one important body of decisions relates to the selection of tests and measurements that act as media to transfer information from one point to another. Their selection is as critical as the selection of ways to use the information. Instruments must meet several general -- and very often, certain specific -- criteria. The ages and types of subjects, for example, the kinds of materials to which the subjects will (or can) respond, the time available for administration -- all require consideration. The purposes for examining the subjects must be taken into account, and only that information needed to meet the purposes should be obtained. Accumulating data for the mere sake of acquisition is hardly practical or even ethical.

Decisions about instruments may be made in various ways. Perhaps the best and most expedient approach to ascertaining the worth of a particular tool is to ask two simple questions: What are the purposes of the research? What instruments will lead to where the researcher wants to go?

The development of a testing [research] program requires, first of all, a clear purpose...one must search for a test that fits the decision to be made, not just for a "good test of reading" or "a good personality test." It is unrealistic... to evaluate a test in the abstract, yet one cannot consider all possible applications simultaneously. For this reason, it is suggested that any test manual be approached with a definite measurement problem in mind...which might be specific (selecting girls for training as punchcard clerks) or rather general (obtaining information for subsequent use in counseling high school pupils as problems arise). (22:147).

Each test in a battery must be selected for the particular time and situation in which it will be used and for the population it will examine. Especially, though, each must be selected for its special purposes and because it measures the concepts or variables that a

researcher deems important. For example, if an investigator feels that young people who live a short distance from the college are more likely to attend that particular institution than those who must travel a long way to get there, his instrument might be a simple questionnaire asking how far students have to travel to get to campus. Another investigator may feel that low-ability students are more likely to drop out of school than higher-ability students; his tools for testing such an hypothesis would consist of measures of ability and dropout or attrition figures.

Other questions in conducting research revolve about such issues as feasibility from the standpoints of time, training and experiences of the test administrator, costs of materials and costs for professional time, ease of administration, and applicability of results. Cronbach reinforces these points:

Ordinarily the tester's situation restricts the type of test that may be considered. It determines the choice between group and individual tests, the age or ability range, and the level of interpretative skill to be used (22:147).

Once decisions have been made regarding the types of information desired for a particular project, search for the proper medium can begin. When published tests are available to provide the requisite data, it is generally advisable that they be used; when they do not exist, instruments may be especially developed to meet specific purposes. Inasmuch as test development is a specialized activity that requires a particular kind of expertise, the building of tests by untrained people should be discouraged.

Assessment of Instruments

In general there are three ways to assess published instruments: Examination of the test materials, the test manual, and the published reviews. Direct examination of questionnaires, opinionnaires, surveys, etc. is especially necessary for all researchers, since reviews, no matter how accurate and objective, are still projections of the reviewer. Even a respected critic may not appraise the instrument from a perspective similar to that of the individual investigator. Most publishers offer examiner sets, which include the test scoring key and manual, and encourage careful examination.

The test manual, often accompanied by supplemental technical handbooks, is the principal source of information about a particular instrument. It provides data about the technical quality of a published test, detailed directions for its use, scoring procedures, and research findings. Here answers may be found to questions about predictive validity, test-retest reliability, the normative groups used in the test standardization, and the like.

The Buros Mental Measurements Yearbook (10;11) contains reports of several hundred instruments, reviewed by critics concerned with the area covered by the test. Here the investigator can discover whether the rationale or intent of the test developers has a logical relationship to the questions with which he is particularly concerned, determine the bases upon which instruments are judged to be valid and reliable, and consider the situations in which they may be used.

If no established instrument can be found to meet the expressed purposes of the project, a measure can be constructed. In such a case, problems of validity and reliability must be reconciled. While construct validity may be obtained by consulting the judgment of knowledgeable persons, other kinds of validity are sometimes more difficult to establish. Incidentally, one of the most serious flaws in the research reports received at the ERIC Clearinghouse for Junior Colleges is that, when findings of studies using homemade instruments are reported, data regarding instrument reliability and validity are not included. Therefore, if measures to test certain hypotheses are missing and if new instruments must be developed to gather specific kinds of information, test developers and researchers should report on their standardization of the instruments as well as on research findings.

As the media for obtaining information, then, instruments are an integral part of the research procedure. The definition of the underlying purposes of the project and the reasons certain data are desired are fundamental to instrument selection. What use will be made of the findings? What are the potential effects of these findings? How will they be implemented?

Instruments for This Study

Three instruments were especially selected for the study reported here: a questionnaire, a word-association technique, and a personality inventory composed of fourteen separate scales.

The Questionnaire

Questionnaires are used most frequently when the data to be gathered are similar to the information that would be obtained in interviews. Super and Brophy demonstrated that, with cooperative subjects, the questionnaire was an effective time-saver in collecting factual material. However,

...it is much less useful than the interview as a means of gaining insight into the attitudes and feelings of any but the most frank and insightful of individuals (97:323).

Landis and Katz (58) suggested that factual material was generally reported with accuracy on questionnaires. However, Green (39) and Heron (46) pointed out that, when certain subjects were asked to respond to questionnaires for the purposes of diagnosis -- whether against their will or under scrutiny as applicants for a position -- they yielded to pressures to falsify facts and to improve their appearance as much as possible. This same criticism of the questionnaire as eliciting positive responses, however, also applies to other objective measures, particularly when "faking good" appears desirable to the testee. Usually, if the respondent is assured that his replies will remain confidential, questionnaires will provide accurate information; therefore one way of increasing reliability is to assure the respondent of anonymity.

Although certain desired information about the students involved in this project was available in school records, gathering it presented a clerical problem; therefore, it was considered expedient to develop a short instrument especially for the study. As previously stated, measures of reliability and validity should be included with the presentation of such homemade instruments. However, the suggestion is ignored in this particular case because the instrument was built for convenience, and measures of reliability and validity were of no concern.

A thirty-four-item, self-administered questionnaire, requiring approximately twenty minutes for response, was devised to obtain certain basic information. This included demographic data about the students at the selected school, their academic goals, determination of life goals, and family background. (The questionnaire is reprinted in Appendix A.)

The questionnaire was also designed to elicit information about the students' propensities to plan ahead, from which the ability to delay gratification might be inferred. The types of goals that are set and the extent to which they appear realistic in terms of previous performance are important vantage points for looking at people. Results obtained from the questionnaire will be presented in Chapters IV and V.

The Adaptive - Flexibility Inventory

A comparatively new way of looking at individuals is in terms of their ego strength. Ego strength, a concept from psychoanalytic literature, may be defined as the degree to which the individual can manifest control over his impulses or instinctual forces. Snyder suggests that

One of our important findings from the work to date is that data on psychopathology appear to have considerably less

power to predict future patterns of adjustment than do variables relating to ego strength...Significant differences may emerge when ego operations are evaluated in terms of their impact on the individual's orientation to reality, rather than in terms of his role in the management of conflict. Specifically, we have been concerned with how differences in specific defenses influence the individual's ability to cope with both his adaptation to his environment and his conflicts. We are also considering how intellectual development, the level of energy available to the individual, also affects the ability to cope (92:165).

However, although ego strength as a concept may be applied to a so-called "normal" population, almost every investigation in the past using ego strength as a critical dimension, sampled clinical subjects. This absence of published data on non-clinical groups is particularly unfortunate, because the concept of ego strength is potentially significant in dealing with a general population.

Further, the absence of satisfactory operational definitions makes the concept of ego strength difficult to apply. Most people conceive of the term as a cluster of various functions relating to outside reality and to the total self. In itself, the concept is not a measureable element, but a core factor that may be seen in the degree of adaptability and flexibility revealed by an individual. Adaptability and flexibility, then, represent the overall area designated as "ego functioning" and may be scaled as follows:

1. the ability to rebound, to emerge from challenging experiences
2. the ability to delay gratification
3. toleration of ambiguity and conflicting forces, both internal and external
4. acceptance of complexity
5. flexibility rather than constriction and/or authoritarianism
6. energy and creativity
7. intelligence
8. good reality testing
9. sufficient experience to provide the ego with opportunities to gain strength through growth
10. ability to relate to the unconscious, to become subservient to the self, and to tolerate regression when necessary for greater development to meet the demands of the self. (This is at the highest level of development).

The Adaptive-Flexibility Inventory (A-F) is a projective technique for assessing ego functioning. The Inventory consists of 180 stimulus words, selected on the basis of their tendencies to fit into certain prescribed categories. Subjects are encouraged to respond freely to both common and ambiguous stimuli. Developed for use with so-called "normal" adult populations, the instrument can also be used with older adolescents, students in the last two years of high school, and in the lower divisions of college. Particularly because of this group of potential subjects, stimulus words were selected on the basis of what was considered "good taste."

The A-F Inventory is not a published instrument; however, it is not duplicated here because information about its use may be found elsewhere (7). Briefly, it may be noted that individuals responding to the scale are evaluated according to a seven-point global assessment, with "1" indicating a degree of ego strength so low that the individual is probably not functioning or, at best only minimally. A score of "2" indicates a borderline individual who demonstrates low ego functioning because of either below-average intellectual ability or a considerable number of emotional problems. People assessed as "3," "4," or "5" represent the so-called "average" group of individuals, while "6's" and "7's" are reality-oriented, well functioning, occasionally creative, and usually very intelligent.

Although it is not timed, the A-F Inventory takes approximately twenty minutes. Currently being standardized, it has been used in a number of studies with junior college teaching interns (9;16) in which evaluations on the basis of the inventory were positively correlated with ratings of teaching effectiveness by independent supervisors.

The Omnibus Personality Inventory

The study of college student characteristics and values has long been recognized as a primary need in higher education. Few instruments for so assessing students have been developed, however, because valid definitions and methodology are difficult to find. Accordingly, while cognitive tests abound, measures of student affect are rare.

In 1962, Paul Heist and his colleagues at the Center for Research and Development in Higher Education at the University of California, Berkeley, (45) began to develop a research instrument to assess personal characteristics of college students. Entitled the Omnibus Personality Inventory (OPI), the instrument contained measures for studying such variables as flexibility, openness to new ideas, attraction to reflective thought, interest in intellectual

inquiry, and tolerance of varying points of views.

In the 1962 edition of the test manual, the authors suggested that it was developed because of the various shortcomings of most existing personality measures used with normal college populations. The technique was developed within the context of several theoretical considerations, including findings and principles regarding human behavior, measurement theory and technical criteria for test construction, and knowledge of the social aspects of college student life.

The OPI has been used in a variety of projects on a number of college campuses throughout the country, such as Antioch College, Colorado College, Michigan State University, San Francisco City College, and the University of Michigan. In a study of 2000 members of the 1961 UCLA freshman class, certain scores were found to correlate strongly with students who did not remain in school while other scores were found to represent successful Peace Corps candidates. Results of other projects are reported in the test manual.

The fourteen scales comprising Form FX were assembled from items in such instruments as the Minnesota Multiphasic Personality Inventory (41), the California Psychological Inventory (38), and the Vassar College Attitude Inventory (106). The various scales included in the Inventory were used for their relevance to academic activities or for their general importance in understanding and differentiating among college students. On most of the fourteen scales, standard scores of 60 (84th percentile or above) are interpreted as sufficiently high for the respective definition to apply. Those persons falling above a standard score of 70 are described as most appropriately characterizing the definitions which follow:

Thinking Introversion (TI) (43 items) A liking for abstract reflective thought and an interest in academic activities are measured by this scale. Persons scoring high express interest in a broad range of ideas such as literature, art, and philosophy. Their thinking is less dominated by immediate situations than that of thinking extroverts who are the low scorers.

Theoretical Orientation (TO) (32 items) This measure reflects an interest in science, logical or critical thinking. TO scores are relevant to problem-solving performance on tasks requiring restructuring for their solution. High scores on the scale are characterized by a rational and critical approach to problems.

Estheticism (Es) (24 items) This scale measures an interest in artistic matters and artistic activities as well as a high level of sensitivity to esthetic stimulation.

High scorers have generally tried to write poetry at one time, enjoy looking at paintings, sculpture, and architecture, listening to poetry, collecting prints, and reading about artistic and literary achievements. Conversely, low scorers do not dream about having time for painting and sculpturing, would not like to be actors and actresses, do not like to make friends with sensitive and artistic people, and do not like to read about literary achievements.

Complexity (Co) (32 items) A flexible and experimental orientation, rather than a set way of organizing and viewing phenomena, is reflected in this scale. High scorers are tolerant of ambiguity and uncertainty and appreciate novel situations. They like to take a chance on things without knowing whether they will really work, prefer to deal with complexity versus simplicity, and are prone to seek out and to enjoy ambiguity and diversity. They are attracted to the unfinished and the imperfect rather than to the completed and polished, and they believe that there is more than one right answer for most questions. Low scorers on the other hand, do not like the uncertain or the unpredictable, do not hate regulations, and are not politically radical.

Autonomy (Au) (44 items) This scale measures liberal and non-authoritarian thinking and a need for independence. High scorers tolerate viewpoints other than their own, maintain individual rights, tend to be mature and independent of authority. They also tend to be non-judgmental, intellectually and politically liberal, and realistic. Most low scorers tend to feel that parents are generally right about things. The rebellious young people get over their ideas and settle down as they grow. They also believe in the established order of things, feeling that only a pretty callous person does not think of parents in terms of love or gratitude.

Religious Orientation (RO) (26 items) Persons scoring high on this scale are skeptical of and tend to reject most conventional religious beliefs and practices. Those scoring around the mean manifest a moderate view of religious beliefs and practices, while individuals scoring low are generally conservative and reject other viewpoints; they indicate strong religious commitment. The direction of scoring of this scale correlates with TI, TO, Es, Co.

Social Extroversion (SE) (40 items) A preferred style in relating to people, social contexts is indicated by this scale. High scorers display interest in being with people, seek social activities such as parties and large gatherings, and are cordial to strangers. Low scorers do not enjoy large parties or being in crowds. They prefer to work alone. The social introvert (low scorer) tends to withdraw from social responsibilities and contacts.

Impulse Expression (IE) (64 items) The general readiness to seek gratification and to express impulses -- either in conscious thought or overt actions -- is assessed by this scale. Very high scorers frequently have feelings of rebelliousness and aggression, while high scorers attest to active imagination, valuing feelings and sensual reactions. They often react on the spur of the moment, without stopping to think. On the other hand, low scorers tend to be conventional, do not hate regulations, and do not tend to give teachers or principals trouble in school.

Personal Integration (PI) (55 items) This scale assesses the individual's admitted responses to attitudes and behaviors that characterize emotionally disturbed or socially alienated persons. High scorers deny feelings of having done wrong, being misunderstood by others, or experiencing barriers between themselves and others. Low scorers admit to strange and peculiar thoughts, feel useless and "no good," and often experience strong feelings of such urgency that they can think of little else.

Anxiety Level (AL) (20 items) High scorers on this scale deny anxiety symptoms or feelings and do not admit to worry or nervousness, while low scorers are generally high-strung and tense and may experience difficult adjustment to social environments. The emphasis on denial here is important, with high scorers denying feelings of anxiety or being high-strung and claiming to be happy most of the time. Low scorers worry, are often restless, are inclined to take things hard, and are more sensitive than most people.

Altruism (Am) (36 items) Persons scoring high here tend to be trusting and ethical in their relations with others, showing strong concern for social welfare. Low scorers are more interested in ideas than in facts, prefer men of ideas to practical men, and like to discuss philosophical problems. They do not believe that there is

one right answer to most questions, even when one has all of the facts.

Interest Orientation (IO) (57 items) This scale assesses some attitudes and differences between college men and women. High scorers tend to deny esthetic interest, admit to few adjustment problems or anxiety feelings, and do not feel personally inadequate. They tend also to be more interested in scientific matters and less social. Conversely, low scorers admit to greater emotionality and sensitivity, have stronger esthetic and social inclinations, and enjoy the arts, literature, and poetry.

Response Bias (RB) (28 items) Responses to test-taking items are measured by the scale. High scorers respond in much the same way as a group of students explicitly asked to respond to items in order to make a good impression. Low scorers may be, on the other hand, trying to make a bad impression. High scorers state that they enjoy solving problems like those in geometry or philosophy and feel close to people, while low scorers express restlessness and difficulties.

Summary

The three instruments were selected for this project because they met certain apparent or considered needs. It was important that the project be able to assess the junior college students on the basis of certain demographic features, personality characteristics, and ego strength. Therefore, a questionnaire was devised and used along with a word-association technique and a several-scaled inventory of personality. Findings will be presented in later chapters.

Chapter IV

HETEROGENEITY -- HOMOGENEITY

It has been common practice to describe the community college as an extremely heterogeneous institution. In most cases, this stress on diversity refers to the proffered variety of courses and curricula and to the people involved in the total system of which these schools are a part. Similarly, junior college students have been frequently characterized in terms of heterogeneity, on the basis of measures of academic abilities, aspirations, and socio-economic status. The college that enrolls large numbers of "transfer," "vocational," and "remedial" students with apparently equal investment must, by implication, serve a mixed population.

Descriptions of heterogeneity or homogeneity, however, are meaningful only if the components are spelled out. Which dimensions comprise diversity? Which, uniformity? Most studies of community college students examine grade point averages, measures of general ability, their ages, and the miles they travel to school. Certainly the students may vary greatly along these dimensions, but such data do not indicate that the ascribed diversity is actually a general quality. In spite of apparent heterogeneity on demographic dimensions, little is known about relative heterogeneity among students on other measures.

Indeed, when each component is carefully considered, a reasonable doubt may be cast on the generality of diversity among junior college students. True, community college students as a group achieve lower mean scores on tests of academic ability than do comparably selected samples of four-year college and university students. They indicate lower educational and occupational aspirations and show less confidence in their academic abilities. However, these data do not point to greater intra-population diversity along the dimensions cited.

Conversely some studies suggest homogeneity rather than heterogeneity in potentially significant directions. Tillery (102) reported that junior college students were more interested in applied learning and less responsive to new experiences than samples of either university or four-year college students. In a study of interpersonal values of college and university students (1), conformity was found to be a homogeneous feature of junior college students. This measure significantly differentiated university students from terminal and transfer students in junior colleges.

Trent and Medsker (67; 103) found tendencies toward heterogeneity among junior college students in terms of academic ability and socio-economic status. However, in the same population, tendencies toward homogeneity were found among certain personality characteristics

assessed by the Omnibus Personality Inventory (OPI, 19). Similarly, on all appraised personality measures, Warren's (105) sample of junior college men and women fell below his samples of students in a state college and in a private college. The private college students were found to be the most adventuresome, impulsive, and involved, while the junior college students were described as being cautious, prudent, and controlled, as well as most apprehensive and rigid in concerns over academic standings. Again the data did not reveal a relative degree of heterogeneity.

Accordingly, while the concept may accurately apply to such dimensions as age, previous academic achievements, and educational aspirations, examinations of junior college students do not appear to support a general description of heterogeneity. Just as the "highly diversified" nature of students in four-year institutions does not yield a "typical" portrait (90), an accurate picture cannot yet be drawn of the typical community college student. And therefore, because of its implications for understanding students in this segment of higher education, the question of heterogeneity versus homogeneity continues to be intriguing.

The study reported in this chapter was designed to assess the relative heterogeneity of certain personality measures among community college students and four-year college students. The general hypothesis was that junior college students would exhibit less heterogeneity than would comparison groups of four-year college students.

Procedure

The instruments employed in this study have been described in Chapter III. The two personality inventories and the questionnaire were administered to the 259 freshmen by their English instructors, according to written instructions provided by the investigators. The Adaptive-Flexibility Inventory and the student questionnaire were administered during the first hour of class in the Spring semester, 1968, on either a Tuesday or a Wednesday. The OPI was given during the second hour. The OPI's were scored according to directions cited in the manual; responses to the questionnaire were tabulated; and the A-F Inventories were evaluated by the test developer (7).

Findings

Questionnaire Although the questionnaire was administered to 259 students, some respondents skipped certain items; thus, the total N for each questionnaire item was variable. Each of the items tabulated, however, was answered by at least ninety per cent of the students.

TABLE 1 -- COLLEGE MAJOR

<u>Major</u>	<u>Number of Students Declaring</u>
1. Agricultural Science	3
2. Art	16
3. Business Administration-Economics	19
4. Engineering	12
5. English	3
6. Foreign Language	2
7. History-Political Science	11
8. Life-Earth Sciences	1
9. Mathematics	7
10. Music	0
11. Philosophy	2
12. Physics	1
13. Physical Education	6
14. Psychology	9
15. Secretarial Service	3
16. Sociology	4
17. Speech	1
18. Technical-Industrial	14
19. Other	44
20. Undecided	<u>77</u>
Total	235
Not responding	24

Of the sixty-seven per cent of the students who had declared majors, forty-four chose the category "other." A reasonable inference is that, at least for some subjects, this category represented a more acceptable way to indicate indecision about academic plans than did a flat "undecided."

Students indicating majors that strongly implied transfer to four-year institutions (e.g., English, Math, Philosophy) totaled twenty-five per cent. Seventy-seven students were undecided; forty-four indicated "other" majors; and fifty-five (twenty-three per cent) were enrolled in so-called "terminal" programs (e.g., technical-industrial, secretarial). On the subsequent questionnaire item relating to transfer plans, however, twenty-seven per cent indicated no specific plans. Since 172 students designated specific transfer plans with only fifty-nine citing an academic major that virtually necessitated transfer, a substantial discrepancy may be observed.

TABLE 2 -- TRANSFER PLANS

<u>Category</u>	<u>Number of Students Declaring</u>
1. Non-transfer	16
2. State college, California	107
3. State university, California	42
4. Private college or university, California	12
5. Out-of-state college or university	11
6. Undecided	<u>53</u>
Total	241
Not responding	18

An interesting point that may have further implications for the guidance of junior college students is their apparent generalized feeling of wanting to transfer to a four-year institution, even though their academic plans may be nebulous.

In spite of the implied discrepancy, much of the apparent variance is dissipated, if transfer plans are evaluated as to specificity. Of the questionnaire categories to which the students could respond, two indicated specific plans -- "out-of-state college or

university" and "private college or university in California." Because of the relative difficulties of gaining admission to the University of California, that category also implied a certain specificity of plan. Taking these three categories to indicate specific transfer plans, then, only sixty-five students indicated such plans -- a much less discrepant figure. Because of the relatively low admission requirements of the state college system in California, it is not unreasonable to infer that an indication of plans to transfer to state college represents less certainty of plan.

TABLE 3 -- ARE YOU WORKING FOR A COLLEGE DEGREE?

<u>Category</u>	<u>Number of Students Declaring</u>
1. Associate in Arts	61
2. Bachelor's degree	79
3. Both Associate and Bachelor's	63
4. None	<u>32</u>
Total	235
Not responding	24

Thirteen per cent of the freshmen indicated no degree plans (Table 3). A total of twenty-six percent planned to terminate with the Associate in Arts degree; the remaining sixty-one per cent indicated plans for a Bachelor's degree or both an Associate and a Bachelor's degree. Once again, there is a discrepancy between the number declaring the kind of "academic" majors that imply a minimum of four years of college and the number indicating four-year college plans -- in this case, degree plans. Reasons for this discrepancy are not clear. It might be noted, however, that among a total of 172 students designating plans to transfer to a four-year institution, only 142 anticipated graduation. This differential may support the inference, made earlier, that transferring to a state college is not necessarily a specific plan. On the other hand, it may be that these students are reality-oriented individuals, who are saying, in effect, that they want further academic work but do not actually anticipate a four-year degree.

Further discrepancies are revealed by considering the responses to the questionnaire item relating to personal plans "five years from the present" (Table 4). The two categories most strongly suggest academic continuation -- "student" and "profession" -- were chosen by

TABLE 4 -- FIVE YEARS FROM NOW, I WOULD MOST LIKE TO BE

<u>Category</u>	<u>Number of Students Declaring</u>
1. A student	11
2. In a professional occupation	117
3. In a creative field	27
4. Married and raising a family	32
5. In any field in which I can see myself	10
6. Don't know	<u>39</u>
Total	236
Not responding	23

fifty-six per cent. This compares with twenty-five per cent indicating "academic" majors. However, the data are perhaps misleading because the categories greatly overlap and are subject to widely variant interpretations. To be most effective, categories in questionnaires should be mutually exclusive; in further investigations, such a point should be considered.

TABLE 5 -- EDUCATIONAL LEVEL OF PARENTS

	Father	Mother
1. Did not complete high school	33	26
2. High school graduate	66	106
3. Some college	63	54
4. College graduate	45	34
5. Post-graduate work in college	16	3
6. Don't know	<u>10</u>	<u>7</u>
Total	233	230
Not responding	26	29

Information regarding family background implies a degree of homogeneity, at least in broad terms. Eighty-three per cent said their fathers lived at home; ninety-four per cent said that their mothers lived at home. Ninety-one per cent lived with one or both parents.

The educational level attained by the fathers of these students may be represented in three nearly equal groups and a fourth smaller one. Twenty-six per cent indicated an educational level of college graduate or more; twenty-seven per cent indicated some college; twenty-eight per cent indicated high school graduate (Table 5). Fourteen per cent did not finish high school and four per cent were unknown.

The educational level attained by the mothers of the group is less varied and generally lower. Sixteen per cent were college graduates or more, twenty-three per cent had some college, and forty-five per cent finished high school. A somewhat lesser number of mothers (eleven per cent) than fathers failed to finish high school.

TABLE 6 -- NUMBER OF DIFFERENT SCHOOLS ATTENDED

	<u>Before 10th Grade</u>	<u>10-12</u>
1. One	11	183
2. Two	80	32
3. Three	58	6
4. Four	52	5
5. Five or more	<u>9</u>	<u>1</u>
Total	210	227
Not responding	49	32

Since students in California typically attend two schools (elementary and junior high school) before entering high school, a tendency to change residence is indicated by attendance in three or more schools. Fifty-seven per cent attended three or more schools prior to the tenth grade, indicating, in this group, a slight tendency to move (Table 6). Partly, no doubt, because grades 10-12 represent only a three-year span, there is less movement evidenced in high school. Only twenty per cent attended more than one high school.

A substantial proportion of the students in this sample were employed -- fifty-three per cent. Of these, the average number of hours worked per week was 21.6, or approximately half-time.

To the questionnaire item, "I consider the following to be the happiest years of one's life" eighty-eight chose one of the two categories that encompass the age-span of the group. Seventy-nine chose "15-19" and 114 chose "20-29." Since the mean age of the group -- 18.2 -- falls within the category "15-19," one might interpret the choice of "20-29" partly as an optimistic hope for a happier future just around the corner. Whatever interpretation is placed on the data, they do indicate a strikingly similar attitude among the respondents.

TABLE 7 -- HIGH SCHOOL GRADE POINT AVERAGE

<u>Category</u>	<u>Number of students declaring</u>
1. D	4
2. D+	12
3. C	77
4. C+	93
5. B	42
6. B+	6
7. A	<u>1</u>
Total	235
Not responding	24

On the report of their high school grade point average, twenty-one per cent claimed a B average or better (Table 7). It may be legitimately inferred that the students in this group voluntarily chose the junior college rather than other college possibilities, since they would be scholastically eligible for admission to other colleges. The seventy-nine per cent who had grade point averages of less than B may or may not have been eligible for admission elsewhere.

The A-F Inventory The Adaptive-Flexibility Inventory also shed some light on the questions of homogeneity and heterogeneity in the junior college student population. Figure I shows the distribution of scores on the A-F Inventory for this sample of junior college freshmen.

Number of
Subjects

100

90

80

70

60

50

40

30

20

10

0

1

2

3

4

5

6

7

N=8

N=48

N=69

N=96

N=25

A-F SCORE

FIGURE I

DISTRIBUTION OF A-F SCORES FOR JUNIOR COLLEGE
FRESHMEN.

N= 246

MEAN= 4.3

S.D.= 1.0

-----POSTULATED NORMAL DISTRIBUTION

In designing this instrument, the author hypothesized that approximately 70 per cent of the so-called "normal" adult population would score in the 3rd, 4th, and 5th range -- that is, they would manifest low average, average, or high average adaptive flexibility (7:98) or, in other words, would indicate average amounts of ego strength as assessed by this instrument. However, in our sample of junior college freshmen, 87 per cent fell within this range. The curve was slightly skewed to the left and was leptokurtic. Ninety-six or 39 percent of the C group were assessed to be 5's and 212 of the 246 students responding to the A-F (or 85 per cent) fell into the 3, 4, and 5 categories. Thus, the group of students appears to be homogeneous, with only few falling at the extremes.

Some anecdotal remarks, recorded during the A-F scoring, provide a picture of the students involved in this study that is different from the one provided by the statistical data. Several students perseverated on certain words; for example, one used the word "girl" ten times. Preoccupation with sex was suggested by perseverative responses as well as by other complex-bound reactions to the stimuli. In some cases, this preoccupation went well beyond what one would normally expect from young people.

There were several "personal"-oriented protocols, with subjects responding in a manner that suggested exaggerated preoccupation with self. On the other hand, there were some very good responses to difficult words and some obvious guessing about intellectually difficult words, the "good" responses suggested that many students could get away from themselves and their particular problems and deal with the stimulus words in an intelligent manner.

While the A-F Inventory was not assigned to assess intellectual levels of cognitive development, respondents do indicate various degrees of competence. With this particular population, one glaring finding was that many could not spell correctly. This may well reflect the students' placement in English classes and may also be a way of predicting their future work at the college -- an interesting possibility, but beyond the sphere of this report. No attempt was made here to investigate the relationship of spelling competency with A-F scores. A purely subjective reaction is that many junior college freshmen appear flexible and open to different ways of reacting to word-stimuli. However, they either lack fundamental skills or are unable to structure their responses, even when they can be free and flexible with them.

The Omnibus Personality Inventory

The OPI was administered to students during their second hour of class. Although University of California, Los Angeles freshmen

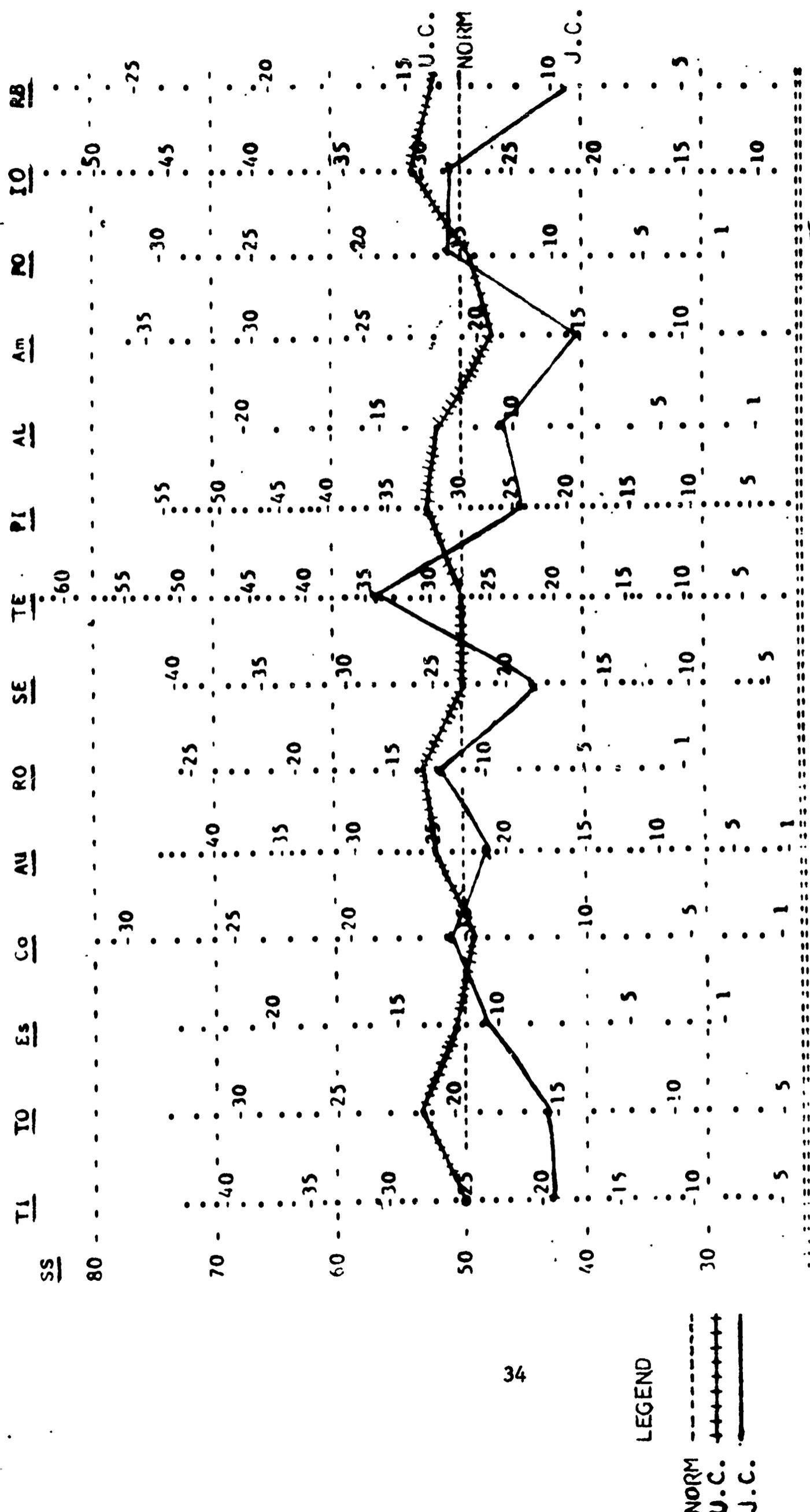


FIGURE II OPI SCORES FOR UNIVERSITY OF CALIFORNIA FRESHMEN, JUNIOR COLLEGE FRESHMEN, AND NORM GROUP

normally complete the Inventory in forty-five minutes*, the usual fifty-minute class hour did not appear sufficient for its administration to junior college freshmen; of our sample of 259 subjects taking the OPI, only 125 completed it in the allotted time. This finding is of interest in itself because of the possible bias of results. It is conceivable that this sub-set of subjects completing the test represents two extremes -- subjects who were able to reach the necessary decisions on the test items quickly and easily and those who merely answered casually, off the top of the head perhaps, and without serious consideration of how well their responses showed their actual feelings. The excluded group, then, would include those who required more time to deliberate, as well as those who conceivably were uncooperative.

The means and standard deviations for each of the OPI scales are presented in Figure II. This figure compares mean scores on the OPI Form FX for this sample of 125 junior college students, for the norm group offered by the Center for Research and Development in Higher Education (Berkeley), and for University of California freshmen. The mean scores that showed significant discrepancy from the normative sample were TI, TO, Es, RO, SE, IE, PI, Am, and RB. With the exception of RO and IE, all scales were lower for the junior college population than the means of the normative group ($p < .01$). RO and IE were significantly higher than the mean for the normative sample ($p < .05$ and $< .01$, respectively). Because the RB scale reflects a tendency towards "making a good impression," the low RB suggests that the scores are valid and represent a relatively accurate reflection of the group's approach to this instrument.

The low TI, TO, and Es, three of the four scales described as representing the cognitive domain, may well account for the fact that these students were enrolled in a junior college rather than a four-year college or university. The scores also concur with the high school grade point averages they report**, averages that suggest that about eighty per cent of the subjects were not academically eligible for admission to a state college or university in California. The high IE scores may reflect the low TI, TO, and Es scores also in the sense that the subjects tend to prefer to "act out" their impulses rather than to think about them or to cope with them in other than academic ways. The low Am and low PI may also relate to the high IE score, since it is conceivable that both scales reflect individuals who prefer not to delay gratification, have not yet developed a "life style" of their own, and tend to be concerned with self rather than with others.

*Personal communication from Jane Anne Pullam, to whom we are most grateful for assistance.

**The question of accuracy in relation to self-reports of grade point average might be raised. It can only be assumed that they are reasonably valid.

Figure III represents the range and distribution of scores for the junior college subjects as compared with the norm means and standard deviations. Although most of the distributions are symmetrical, it is interesting the TI and PO are negatively skewed and that RB is positively skewed. The skewness of these three distributions implies a slight homogeneity of students on these particular dimensions. On the other eleven scales, the symmetrical distribution plus the wide range of scores suggests heterogeneous tendencies.

When the subjects of this study are compared with the 400 University of California freshmen sample, the mean differs significantly on eleven of the fourteen scales. As with the normative sample, the TI and TO are significantly lower (.01). However, while E is not significantly different for the University of California freshmen and the junior college freshman sample, another scale in the so-called cognitive domain, Co, is significantly higher for the junior college freshmen (.05) than for the University of California freshmen. Compared with the University of California freshmen, who were considerably higher than the more general norm group on the Au scale, the junior college sample was significantly lower (.01); there was no significant difference between this group and the normative group. The distribution of OPI scores of junior college freshmen as compared with University of California freshmen is shown in Figure IV.

As with the normative sample, the junior college students were higher than the University of California freshmen on IE and lower on PI, AI and RB; however, they were also lower than the University of California freshmen on Am and IO. The implication of these results is consistent with the previous discussion on impulse behavior and awareness of others. On the IO scale, where the University of California freshmen scored significantly higher than the norm group, the junior college students were significantly lower than the University of California freshmen but not different from the normative sample.

A statistic that indicates the degree of homogeneity of a distribution is the coefficient of variation ($CV=s.d./M$). Although this is seldom appropriate for psychological tests because it implies an absolute zero point, it may be employed to compare distributions of scores on the same test. With CV as a measure of comparison, the junior college sample appears to be somewhat more homogeneous (i.e., has a lower CV) on the scales Co, Au, RO, IE and PO than the norm group. On none of the scales does the junior college sample have a substantially higher CV or greater heterogeneity than the norm.

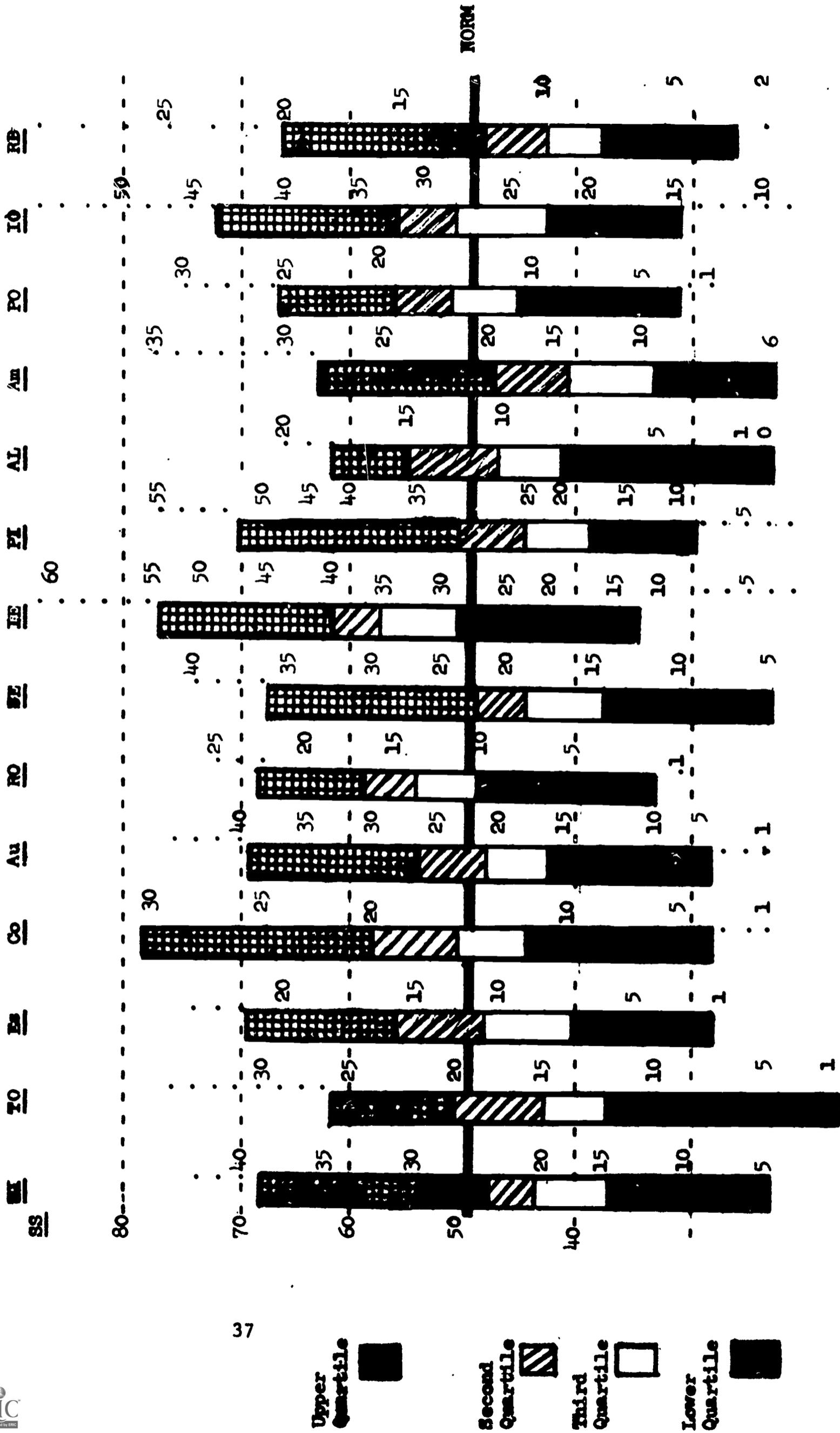


Figure III. DISTRIBUTION OF OPI SCORES OF JUNIOR COLLEGE FRESHMEN BY QUARTILES . COMPARED WITH NORM GROUP.

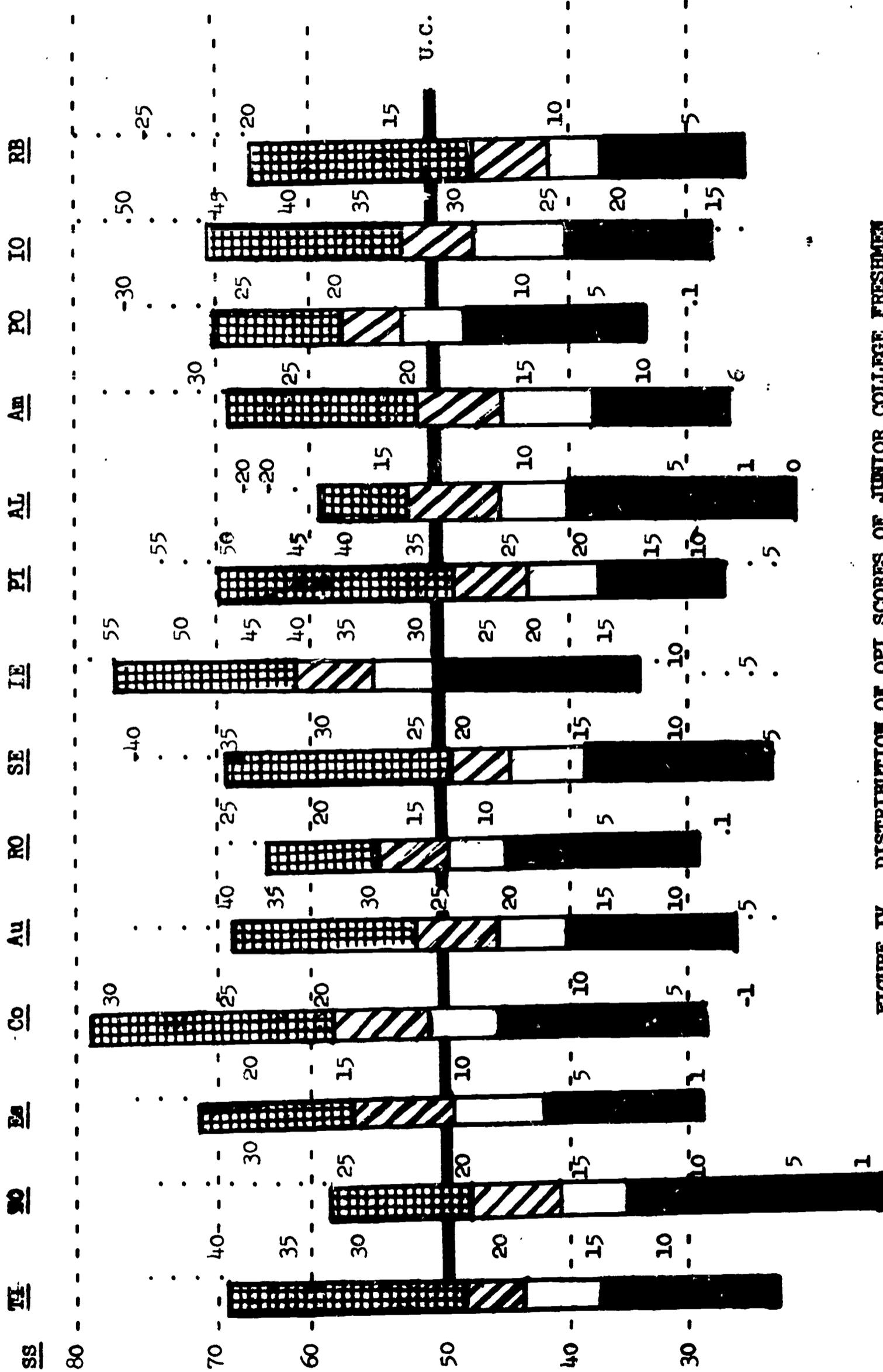


FIGURE IV DISTRIBUTION OF OPI SCORES OF JUNIOR COLLEGE FRESHMEN BY QUANTILES COMPARED WITH U.C.B. FRESHMEN.

Compared to the University of California freshman sample, the junior college sample shows more homogeneity on the scales Co, RO, IE, and PO. In none of the remaining scales does the junior college sample show substantially greater heterogeneity than the University of California freshmen sample. In general, both the college samples indicate greater homogeneity than the norm.

Conclusion

The following showed the contention of less heterogeneity for the junior college students:

- 1) Standard deviations for the scores obtained by the subject population were lower than either of the comparison groups on thirteen of the fourteen scales of the OPI
- 2) A very narrow spread in the second and third quartiles on the OPI was revealed
- 3) The A-F Inventory results could not be compared to an undergraduate four-year college population because data on it were lacking. However, the tendency was in the direction of homogeneity as compared to a postulated normal distribution of scores on that instrument.

Perhaps the most interesting finding resulting from this investigation is that the kinds of data obtained do not suggest the heterogeneity usually ascribed to junior college students. The material presents a variety of dimensions that may characterize these students into definite types, but there is also congruency among many responses. Thus, the questions regarding homogeneity and heterogeneity that were raised earlier in the study can be resolved only by further questions. How homogeneous and how heterogeneous? On what basis are these junior college freshmen like other freshmen in the college and how are they different? What are the ranges of differences in this sample? And the ranges in the other junior college populations? While these questions cannot be answered on the basis of one study in one school, the data are of interest.

Chapter V

STUDENT ATTRITION

One of the important recurring issues in education is student attrition, a problem that has interested educators, psychologists, sociologists, economists, students themselves, and their parents for a number of years. Of more recent origin is the broad public concern about the dropout.

"College dropout" has already become an easy euphemism for social abnormality, a fact attested to by its psychiatric recognition. With the help of a National Institute of Mental Health grant, The William Alanson White Institute in New York has opened a psychiatric "College Dropout Clinic" to diagnose and treat such "cases" (40).

And further,

"The dropout conspiracy," as it must be called, is a nefarious gambit that is being foisted on the nation by an educational establishment and well-propagandized parents who now equate learning solely with the number of school years completed (40).

"Dropout," "student mortality," "academic failure," are terms that are not uniformly defined. Whatever the definition, they generate reactions ranging from hostility and angry denunciation, through negation of the system, to passive resignation and acceptance.

The matter of dropping out of college, with its widespread ramifications in the educational and social realms, transcends the merely personal psychology of the individual. It is a phenomenon that highlights the ancient struggle between the environment and the individual, each striving to modify the other in ways as complex as life itself, until a better balance is achieved ... If examination of ... [the] interaction [between the environment and the individual] discloses elements of ignorance or extremism on both sides, more rooted in emotionalism than in calm objectivity, perhaps the dropout may be less widely included among the failures, delinquents, and other undesirables. The sensitivity of students to the value system of a society that condemns dropping out is hinted at, even if half-

facetiously, in the remark of one student: "If you quit school after your bachelor's degree, you're a dropout" (81:3).

Among the great contemporary issues of higher education

... which demand a central place in the public attention ... [is] the rise in interest in the college dropout. With typical commitment, the American people are convinced both of the desirability of education and of its perfectibility. While their commitment does not carry over into agreement on specific issues or methods, it does lead to general impatience with whatever stands in the way of progress and perfection. If a college education is desirable, society asks, why should any young person not seek to attain it in the appointed time? Society's immediate reactions are that the dropout has sacrificed his own future, squandered his institution's resources, and indeed detracted from the national interest itself (81:4).

Concerns with the phenomenon of dropout have implications on a national basis.

The differences between the 750,000 students who enter college in a year and the 400,000 who graduate, like the differences between the two-thirds of junior college students who plan to transfer and the one-third who actually do so, might be taken as an index of American optimism (54:117-118).

While the differential is highest in California public institutions, even in selective colleges throughout the nation,

... there is always a small group of intellectually well-equipped students who select themselves out after having been selected in; frequently, they enter the army, or work for a year, and then, confidence restored or illusions about "life" dispelled, they re-enter and graduate. The combination of careful admissions screening and students' faith in the B.A. as the carte blanche to happiness has greatly reduced the attrition rate in ... selective colleges ... [In other schools], nearly half the entering class may drop out before graduation ... Some of these dropouts certainly find other colleges ... [while] others probably transfer to a junior college

[and] ... others may join the ranks of the academically fed-up, raw material for the forces of anti-intellectualism and political reaction. Whether such people resent a college more if they flunk out than if they are refused admission we do not know. And their overall impact on the social environment is equally difficult to appraise. Furthermore, if the behavior of many alumni is any index, there are many degree holders who feel as bitter about their college as one would expect the rejects to feel (54:117-118).

Reporting on the Gatlinburg Research Conference on the College Dropout, Montgomery (71) pointed out that the numbers and types of people involved in college attrition are tied into the broader topic of goals and objectives for institutions and for the people attending them. Attacks on college attrition and its causes cannot be conducted in isolation, because changes in one segment will undoubtedly affect other parts of the educational structure. Such issues as the determination of who should be educated and for what length of time, admissions and retention practices, curricular offerings, what constitutes an education and how it is obtained, and the press of the college environments on the student personalities -- all these may be related to a student's persisting and completing his formal educational program or withdrawing before completion.

Among the many problems associated with the college dropout, one concern is related to the equivocal nature of the term itself. Many studies of attrition do not arrive at comparable results because, in fact, they deal with different phenomena. Much of the criticism of research on dropouts points to a failure to distinguish between temporary and permanent withdrawal. The fact that many students do finish school, but take longer than the allotted time for attaining a bachelor's degree, compounds the issues.

Research which attempts to establish the student's "permanent loss to higher education" must wait for its completion until all the subjects in the study have either completed their education or died. The point is simply that it is important in any research on dropouts that "dropout" be unambiguously defined, and that the definition make sense with regard to the problem being investigated and to the possible applications of the findings (80:16).

The Instructor and the Dropout

The role of the instructor is also related to the issues concerning the college dropout. Just what is the relationship of the instructor to the student -- especially, the student who, perhaps because of ambiguously conceived directions, appears a likely candidate for withdrawal? And what is the instructor's effect upon this student, if any?

Instructors and instructional practices have been assessed in many ways (35). Most methods of evaluation, however, deal either with demographic characteristics or with certain global personality traits, and the outcome of many investigations merely suggests that the effective instructor is a "good person." A significant omission in many studies is the dependent variable, the student himself, who is the object of the instructional process. In fact, even interactional studies of faculties and students seldom consider the instructor's effect in terms of the pupil (17).

Although it is the instructor who formulates the curriculum within his own courses, develops and uses instructional procedures, and establishes practices that may activate the student's decision to stay in or drop from school, few studies have been concerned with differential retentive capacities of instructors. Terminal interviews with students often reveal a major cause of early departure from college to be dissatisfaction with instructors and with the traditional curricula (43). While the teachers' abilities to sustain interest and attention of students would seem to be major determinants of successes in teaching (65), these variables are rarely included in investigations of academic mortality rates.

It would be helpful in planning academic programs to have answers to such questions as: Are particular types of teachers more likely to account for more dropouts than other teachers? Is this a reflection of the teachers' personalities, of the methodology employed, of the subject matter involved, or of the school at large? If certain instructors have fewer students who withdraw from college before completion of their programs than other instructors, is this because these particular staff members communicate a sense of purpose and/or direction to these students, many of whom may be desperately seeking such direction?

Theoretically and logically, the definition of specific learning objectives and their transmission to the student are important to his achievement. If, then, the teacher has a clear direction for conveying his materials, is this in some way communicated to his students (14;61). If attitudes -- of both faculties and students -- are essential to the learning experience (18),

will the instructor who has a clear notion of his teaching direction actually see that his students learn more than the instructor who conducts his class in a vague and ambiguous manner? Is the instructor who specifies the ends of his teaching, who focuses his students' attention on the goals rather than on the media of instruction, more likely to hold students than another kind of instructor? Is there a relationship between instructional approach and student attrition? Between student attrition and student personality characteristics?

Other questions focus on the course structure. Is the class itself an important point of question? One class dropped does not make a college dropout; yet each class that a student attends and each instructor with whom he interacts, may contribute to his chances of staying or withdrawing from school. Even when decisions to withdraw from college are made by students, rather than mandated by the institution, they are not taken lightly (81). 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.

The Literature

The educational and psychological literature is replete with research reports covering student attrition. In fact, issues relating to this focus have stimulated so many investigations that they may "soon rival college prediction studies in sheer numbers" (56:63). These studies deal with the dropout question in terms of biological and social situations -- Iffert (52); Strang (93); Suddarth (94); Summerskill and Darling (96): academic achievement -- Dressel (25); Feder (30); Weigand (108): Adjustment -- Freedman (33); Mercer (69); Munroe (72): Illness and injury -- Iffert (51); Lerner and Martin (60): and financial conditions -- Cooper (21); Gable (134); Thompson (101). Also reported is a sizable amount of research in which the nebulous concept of "motivation" is related to the question of dropout -- Farnsworth et al., (29); Rust and Ryan (86).

Some of these investigations have been conducted on a nationwide basis. For example, Trent and Medsker (103) examined 10,000 high school graduates across the country. They found that individuals who withdrew from college before completing their programs showed certain personality characteristics different from either those who persisted or those who did not attend college in the first place. Certain demographic characteristics and patterns of parental influence also distinguished the three groups of students.

Another study of nationwide scope was conducted in the fall of 1961 by the National Merit Scholarship Corporation. All entering

freshmen (127,212) from 248 colleges and universities were examined. From this initial sample, 36,405 students became part of a longitudinal project concerned in part with the college dropout (3;80). Twenty-one of thirty-six college characteristics were isolated as affecting student persistence in college. The dichotomous categories, "non-dropout" and "dropout," were selected as the criterion variable. "Non-dropout" was defined as any student completing four or more academic years of college work in 1965, whether or not he attained a bachelor's degree or whether or not he had transferred from one college to another. On the other hand, "dropout" was defined as a student who left the institution he had entered without completing four years of college work by the summer of 1965. This four-year span of time is especially important since there are indications now that many students who eventually attain the bachelor's degree take more than four years to do so.

Results reported by Panos and Astin suggest that the entering students who are most likely not to complete four years of college within the four years following matriculation

1. have relatively low grades in high school
2. do not plan to go on to graduate or professional work
3. come from relatively low socio-economic backgrounds
4. designate either American Indian or "other" backgrounds
5. are likely to have declared business, engineering, or secretarial work as their probable career
6. are likely to have been married when starting college
7. have automobiles that are frequently used.

There is less likelihood that students will withdraw from the school if

1. their relationships to peers are characterized by friendliness, cooperativeness, and independence
2. they frequently participate in college activities
3. there is a high level of personal involvement with and concern for the individual student in the institution
4. the school's administrative policies concerning student aggression are relatively permissive.

Although personal characteristics and individual relationships to the environmental context of the schools are important

determinants of educational outcome, there are conceptually distinct patterns of environmental effects that seem to increase the propensity to drop out. For example, high attrition rates are associated with schools encouraging high levels of student competition, limited opportunities for involvement with faculty, and few extracurricular activities that tend to bring students together. Another pattern of environmental variables affecting attrition relates to administratively determined influences. Colleges with high attrition rates were found to have relatively severe grading practices, facilities unconcerned with the individual student, and considerable freedom for students in the selection of their courses.

The Community College Dropout

Despite considerable research on the college dropout, few investigations have dealt particularly with a junior college population. Investigations by Eckland (26), and Pervin (81), for example, deal with the effects of dropout on the students in highly selected private colleges and in state universities and much of the work on junior college students remains in the files of the particular institutions conducting the investigations. The need is for more studies

... particularly ... in the junior colleges, where the attrition is exceedingly high after only one year and where a large proportion of the students in the transfer program do not enter other institutions. One very important aspect of such an evaluative approach is the assessment of long term effects of failures among college students (56:70).

Knoell suggests further:

It is fairly well established that a large percentage of the high school graduates who enter two-year colleges fail to complete certificate or associate degree programs. There is also reason to believe that many who enter with the intent to transfer do not do so. 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 (56:79).

Society's loss of talent is not the only concomitant; there are personal losses as well. Non-selective admissions policies are a democratic ideal, but an open door to failure may lead to negative side effects. The disappointments and emotional pulls associated with

early departures from school have consequences of which we are only dimly aware. And, in spite of the tremendous investments of the communities supporting the colleges, only a small number of positive effects in terms of financial, personal, or social gains may be realized.

Trent and Medsker's (103) broadly based study included a sample of entering junior college students. Certain variables were found to distinguish between actual withdrawals from college and students who transferred from one college to another. For example, it was found that on certain Omnibus Personality Inventory scales, students who had more exposure to college changed the most.

Four years after graduation from high school, the college withdrawals manifested less development in intellectual disposition than did those students who had attended college consistently for the four years. Following the same pattern as the employed youths, the [OPI] Complexity score in 1963 for college withdrawals was lower than it had been in 1959. Once again, with the exception of the men's Thinking Introversion scores, the college persisters changed significantly more than the withdrawals in an intellectual direction ... (103:136).

Thus,

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 (103:154).

The personality characteristic that most differentiated the college persister group from the withdrawals and especially from non-college-attenders, was the development of autonomy. Again Trent and Medsker noted

... a strong relationship between entrance to and length of stay in college and the growth of open-minded, flexible, and autonomous disposition, as measured by ... scales designed to assess these traits. The fact that the carefully classified college withdrawals were more like the non-attenders than the persisters in their amount of manifest

change indicates that the type of personality development measured continues to be associated with persistence in college beyond the early years. This held regardless of ability or socio-economic status (103:176).

Other findings suggested that family climates of the persisters were different from those of withdrawals and non-attenders. For example, nearly seventy per cent of the high school seniors who later became college persisters reported, while they were still in high school, that their parents definitely wanted them to attend college. This may be compared with the less than fifty per cent withdrawals and less than ten per cent non-attenders who stated similar family interest.

The implications of these findings are wide. However, the results of the project raise still other questions about the personality predisposition of individual students and the personality development that may occur through the college experience. The college environment probably exercises a kind of influence in that it at least allows development to take place. Its direct influence is subtle and presently unknown (53). It would be important to understand just what, within the college as a whole, plays the greatest role in influencing the student and in effecting his decision to withdraw or persist.

Premises

Existing research on the college dropout indicates that many investigators hold certain assumptions in common. These assumptions or premises were also basic to the formulation of specific purposes for the present study:

1. There is a need for basic research that seeks to isolate personality dimensions in order to identify the potential school dropout.
2. Characteristics that differentiate the student with high dropout potential and the student with high persistence potential must be identified so that academic procedures can be developed and evaluated. If "we want to understand the phenomenon of dropouts, we must understand comparative studies ... of dropouts and non-dropouts alike" (57:25).
3. Academic attrition cannot be viewed solely in terms of the student, no matter how complete this analysis may be. The issue, rather, is a multi-faceted one that requires investigation of the student interacting with other members

of the college milieu -- peers, faculty members, administrative forces -- and the general environmental effects of the college itself.

4. Despite many efforts to isolate and understand characteristics that might describe the "good" teacher, student withdrawal rates have not been related to dimensions of teacher personalities, abilities, or goal orientation. While such a project may be difficult at this particular time, it is important to bear in mind for future investigation.
5. There is a definite lack of experimentation with action programs designed specifically to reduce attrition.
6. There is a need for analysis of institutions' organizational characteristics that might affect attrition rates.
7. Withdrawal rates in specific colleges have implications for faculty members in that a high dropout rate may eventually affect faculty morale. This may be true especially in the teaching of introductory courses to college freshmen -- a circular effect can take place among freshmen who become disenchanted with faculty members who then become disenchanted with students (50).
8. The question of attrition in college requires continual in-depth investigation and the implementation of relevant findings. While all facets of the phenomenon of dropout can hardly be studied in a single population or a single project, it is important to entertain in any research project many of the considerations already suggested.
9. "Although the term 'college dropout' has become a bad word in the popular press in the American hometown ... the possibilities of both loss and benefits should be considered' (32:83). Perhaps "dropout" is not a negative term. Indeed, the dropout may be exhibiting strengths not possessed by his fellow students. At this point in our body of knowledge about education, however, we do not know how best to serve those who enter our colleges, conceivably for purposes of completing their education through set programs.
10. Early identification of the potential dropout may lead to communication of more clearly defined goals and more efficient use of resources. Programs may be especially tailored to answer the

specific needs of different kinds of students enrolled for varying periods of time and various purposes. Identification of problems associated with the dropout may also lead to evaluation of what is learned in the schools, by whom, and to what ends.

The Attrition Study

The subjects for this study were incoming freshmen students at the community college described in Chapter 2. The English faculty was divided into two groups -- one experimental and one control. The experimental group included instructors who volunteered to engage in a three-session workshop (N) with the UCLA team; the remaining members of the department were considered the control group.

The underlying hypothesis of this attrition study was that there are significant differences between students classified as school dropouts and those classified as persisters, in terms of one or more personality, ability, or demographic measures. It was further hypothesized that a group of highly efficient predictor variables would become evident. The findings of the investigation would provide data for (1) enhancing the accuracy of predictions of student attrition, (2) adjusting counseling procedures, (3) encouraging junior college instructors to define their objectives more precisely for their students, and (4) developing hypotheses for identifying potential dropouts from continuing students.

Results

Three groups of data were collected: (1) normative, i.e., age, sex, socioeconomic class, number of schools attended, etc.; (2) ability test, i.e., stanine levels on the Henmon-Nelson Tests of Mental Ability, and the Cooperative English Test: Reading Comprehension; and (3) scores on two personality assessment scales, the Omnibus Personality Inventory (OPI) and the Adaptive-Flexibility (A-F) Inventory.

The classification "Dropout" was assigned to students who did not finish the first semester and to students who did not re-enroll or transfer to another school at the beginning of the second semester. "Persisters" were those who finished the first semester and either re-enrolled or transferred prior to the second semester.

Although all students in the sample (259) were given all instruments, a large number (134) failed to complete the OPI in the allotted time. This factor of non-completion seriously biased the

remaining sample in regard to the OPI, but the data from the other instruments were relatively complete. All tests for significant differences were non-directional, since no direction of difference was predicted.

In the group of students who completed the OPI, 100 were Persisters and 25 were Dropouts: Of those who failed to complete the OPI, 100 were Persisters and 34 Dropouts. Although this difference was not significant, only completed OPIs were used in the data analysis because items in each scale are distributed throughout the instrument. Differences between the uncorrelated means on each OPI scale of the Persisters and the Dropouts were tested by t tests. Of the 14 scales, a significant difference was found only on the Co scale, on which the Dropout group was higher ($t = 2.36, p < .05$).

More complete data were available from the A-F Inventory, with scores from 187 Persisters and 56 Dropouts. Although the Persisters' mean A-F score was slightly higher than that of the Dropouts, the difference was not significant.

Henmon-Nelson (Grades 9-12) stanine scores were collected for 151 Persisters and 43 Dropouts. The differences between the means of the two groups on this measure was small and the derived t 's were not significant.

The data from the questionnaire were almost entirely nominal and the null hypothesis of no difference between Persisters and Dropouts was tested by Chi-square for each relevant item. Significant differences were found as follows:

- 1) Dropouts showed a tendency to be enrolled for fewer than 12 units, whereas Persisters tended to be enrolled for 12 or more ($\chi^2 = 10.56, p < .01$).
- 2) Dropouts tended to be employed more time outside school than Persisters ($\chi^2 = 20.05, p < .01$).
- 3) Dropouts tended to have attended more schools prior to the 10th grade than did Persisters ($\chi^2 = 12.65, p < .01$).
- 4) The mothers of Dropouts tended to have less education than those of the Persisters; specifically, more mothers of Dropouts did not complete high school ($\chi^2 = 12.93, p < .05$).

With regard to the hypothesis that the data would yield a set of predictor variables, an initial intercorrelation matrix was formed. Each scale on the OPI, the A-F Inventory, aptitude stanines, and all other measured variables were correlated with each other (product-moment co-efficient) and with the dichotomous criterion variable, Dropout-Persist (point bi-serial). Further analyses were

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... there is always a small group of intellectually well-equipped students who select themselves out after having been selected in; frequently, they enter the army, or work for a year, and then, confidence restored or illusions about "life" dispelled, they re-enter and graduate. The combination of careful admissions screening and students' faith in the B.A. as the carte blanche to happiness has greatly reduced the attrition rate in ... selective colleges ... [In other schools], nearly half the entering class may drop out before graduation ... Some of these dropouts certainly find other colleges ... [while] others probably transfer to a junior college

[and] ... others may join the ranks of the academically fed-up, raw material for the forces of anti-intellectualism and political reaction. Whether such people resent a college more if they flunk out than if they are refused admission we do not know. And their overall impact on the social environment is equally difficult to appraise. Furthermore, if the behavior of many alumni is any index, there are many degree holders who feel as bitter about their college as one would expect the rejects to feel (54:117-118).

Reporting on the Gatlinburg Research Conference on the College Dropout, Montgomery (71) pointed out that the numbers and types of people involved in college attrition are tied into the broader topic of goals and objectives for institutions and for the people attending them. Attacks on college attrition and its causes cannot be conducted in isolation, because changes in one segment will undoubtedly affect other parts of the educational structure. Such issues as the determination of who should be educated and for what length of time, admissions and retention practices, curricular offerings, what constitutes an education and how it is obtained, and the press of the college environments on the student personalities -- all these may be related to a student's persisting and completing his formal educational program or withdrawing before completion.

Among the many problems associated with the college dropout, one concern is related to the equivocal nature of the term itself. Many studies of attrition do not arrive at comparable results because, in fact, they deal with different phenomena. Much of the criticism of research on dropouts points to a failure to distinguish between temporary and permanent withdrawal. The fact that many students do finish school, but take longer than the allotted time for attaining a bachelor's degree, compounds the issues.

Research which attempts to establish the student's "permanent loss to higher education" must wait for its completion until all the subjects in the study have either completed their education or died. The point is simply that it is important in any research on dropouts that "dropout" be unambiguously defined, and that the definition make sense with regard to the problem being investigated and to the possible applications of the findings (80:16).

The Instructor and the Dropout

The role of the instructor is also related to the issues concerning the college dropout. Just what is the relationship of the instructor to the student -- especially, the student who, perhaps because of ambiguously conceived directions, appears a likely candidate for withdrawal? And what is the instructor's effect upon this student, if any?

Instructors and instructional practices have been assessed in many ways (35). Most methods of evaluation, however, deal either with demographic characteristics or with certain global personality traits, and the outcome of many investigations merely suggests that the effective instructor is a "good person." A significant omission in many studies is the dependent variable, the student himself, who is the object of the instructional process. In fact, even interactional studies of faculties and students seldom consider the instructor's effect in terms of the pupil (17).

Although it is the instructor who formulates the curriculum within his own courses, develops and uses instructional procedures, and establishes practices that may activate the student's decision to stay in or drop from school, few studies have been concerned with differential retentive capacities of instructors. Terminal interviews with students often reveal a major cause of early departure from college to be dissatisfaction with instructors and with the traditional curricula (43). While the teachers' abilities to sustain interest and attention of students would seem to be major determinants of successes in teaching (65), these variables are rarely included in investigations of academic mortality rates.

It would be helpful in planning academic programs to have answers to such questions as: Are particular types of teachers more likely to account for more dropouts than other teachers? Is this a reflection of the teachers' personalities, of the methodology employed, of the subject matter involved, or of the school at large? If certain instructors have fewer students who withdraw from college before completion of their programs than other instructors, is this because these particular staff members communicate a sense of purpose and/or direction to these students, many of whom may be desperately seeking such direction?

Theoretically and logically, the definition of specific learning objectives and their transmission to the student are important to his achievement. If, then, the teacher has a clear direction for conveying his materials, is this in some way communicated to his students (14;61). If attitudes -- of both faculties and students -- are essential to the learning experience (18),

will the instructor who has a clear notion of his teaching direction actually see that his students learn more than the instructor who conducts his class in a vague and ambiguous manner? Is the instructor who specifies the ends of his teaching, who focuses his students' attention on the goals rather than on the media of instruction, more likely to hold students than another kind of instructor? Is there a relationship between instructional approach and student attrition? Between student attrition and student personality characteristics?

Other questions focus on the course structure. Is the class itself an important point of question? One class dropped does not make a college dropout; yet each class that a student attends and each instructor with whom he interacts, may contribute to his chances of staying or withdrawing from school. Even when decisions to withdraw from college are made by students, rather than mandated by the institution, they are not taken lightly (81). 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.

The Literature

The educational and psychological literature is replete with research reports covering student attrition. In fact, issues relating to this focus have stimulated so many investigations that they may "soon rival college prediction studies in sheer numbers" (56:63). These studies deal with the dropout question in terms of biological and social situations -- Iffert (52); Strang (93); Suddarth (94); Summerskill and Darling (96): academic achievement -- Dressel (25); Feder (30); Weigand (108): Adjustment -- Freedman (33); Mercer (69); Munroe (72): Illness and injury -- Iffert (51); Lerner and Martin (60): and financial conditions -- Cooper (21); Gable (134); Thompson (101). Also reported is a sizable amount of research in which the nebulous concept of "motivation" is related to the question of dropout -- Farnsworth et al., (29); Rust and Ryan (86).

Some of these investigations have been conducted on a nationwide basis. For example, Trent and Medsker (103) examined 10,000 high school graduates across the country. They found that individuals who withdrew from college before completing their programs showed certain personality characteristics different from either those who persisted or those who did not attend college in the first place. Certain demographic characteristics and patterns of parental influence also distinguished the three groups of students.

Another study of nationwide scope was conducted in the fall of 1961 by the National Merit Scholarship Corporation. All entering

freshmen (127,212) from 248 colleges and universities were examined. From this initial sample, 36,405 students became part of a longitudinal project concerned in part with the college dropout (3;80). Twenty-one of thirty-six college characteristics were isolated as affecting student persistence in college. The dichotomous categories, "non-dropout" and "dropout," were selected as the criterion variable. "Non-dropout" was defined as any student completing four or more academic years of college work in 1965, whether or not he attained a bachelor's degree or whether or not he had transferred from one college to another. On the other hand, "dropout" was defined as a student who left the institution he had entered without completing four years of college work by the summer of 1965. This four-year span of time is especially important since there are indications now that many students who eventually attain the bachelor's degree take more than four years to do so.

Results reported by Panos and Astin suggest that the entering students who are most likely not to complete four years of college within the four years following matriculation

1. have relatively low grades in high school
2. do not plan to go on to graduate or professional work
3. come from relatively low socio-economic backgrounds
4. designate either American Indian or "other" backgrounds
5. are likely to have declared business, engineering, or secretarial work as their probable career
6. are likely to have been married when starting college
7. have automobiles that are frequently used.

There is less likelihood that students will withdraw from the school if

1. their relationships to peers are characterized by friendliness, cooperativeness, and independence
2. they frequently participate in college activities
3. there is a high level of personal involvement with and concern for the individual student in the institution
4. the school's administrative policies concerning student aggression are relatively permissive.

Although personal characteristics and individual relationships to the environmental context of the schools are important

determinants of educational outcome, there are conceptually distinct patterns of environmental effects that seem to increase the propensity to drop out. For example, high attrition rates are associated with schools encouraging high levels of student competition, limited opportunities for involvement with faculty, and few extracurricular activities that tend to bring students together. Another pattern of environmental variables affecting attrition relates to administratively determined influences. Colleges with high attrition rates were found to have relatively severe grading practices, facilities unconcerned with the individual student, and considerable freedom for students in the selection of their courses.

The Community College Dropout

Despite considerable research on the college dropout, few investigations have dealt particularly with a junior college population. Investigations by Eckland (26), and Pervin (81), for example, deal with the effects of dropout on the students in highly selected private colleges and in state universities and much of the work on junior college students remains in the files of the particular institutions conducting the investigations. The need is for more studies

... particularly ... in the junior colleges, where the attrition is exceedingly high after only one year and where a large proportion of the students in the transfer program do not enter other institutions. One very important aspect of such an evaluative approach is the assessment of long term effects of failures among college students (56:70).

Knoell suggests further:

It is fairly well established that a large percentage of the high school graduates who enter two-year colleges fail to complete certificate or associate degree programs. There is also reason to believe that many who enter with the intent to transfer do not do so. 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 (56:79).

Society's loss of talent is not the only concomitant; there are personal losses as well. Non-selective admissions policies are a democratic ideal, but an open door to failure may lead to negative side effects. The disappointments and emotional pulls associated with

early departures from school have consequences of which we are only dimly aware. And, in spite of the tremendous investments of the communities supporting the colleges, only a small number of positive effects in terms of financial, personal, or social gains may be realized.

Trent and Medsker's (103) broadly based study included a sample of entering junior college students. Certain variables were found to distinguish between actual withdrawals from college and students who transferred from one college to another. For example, it was found that on certain Omnibus Personality Inventory scales, students who had more exposure to college changed the most.

Four years after graduation from high school, the college withdrawals manifested less development in intellectual disposition than did those students who had attended college consistently for the four years. Following the same pattern as the employed youths, the [OPI] Complexity score in 1963 for college withdrawals was lower than it had been in 1959. Once again, with the exception of the men's Thinking Introversions scores, the college persisters changed significantly more than the withdrawals in an intellectual direction ... (103:136).

Thus,

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 (103:154).

The personality characteristic that most differentiated the college persister group from the withdrawals and especially from non-college-attenders, was the development of autonomy. Again Trent and Medsker noted

... a strong relationship between entrance to and length of stay in college and the growth of open-minded, flexible, and autonomous disposition, as measured by ... scales designed to assess these traits. The fact that the carefully classified college withdrawals were more like the non-attenders than the persisters in their amount of manifest

change indicates that the type of personality development measured continues to be associated with persistence in college beyond the early years. This held regardless of ability or socio-economic status (103:176).

Other findings suggested that family climates of the persisters were different from those of withdrawals and non-attenders. For example, nearly seventy per cent of the high school seniors who later became college persisters reported, while they were still in high school, that their parents definitely wanted them to attend college. This may be compared with the less than fifty per cent withdrawals and less than ten per cent non-attenders who stated similar family interest.

The implications of these findings are wide. However, the results of the project raise still other questions about the personality predisposition of individual students and the personality development that may occur through the college experience. The college environment probably exercises a kind of influence in that it at least allows development to take place. Its direct influence is subtle and presently unknown (53). It would be important to understand just what, within the college as a whole, plays the greatest role in influencing the student and in effecting his decision to withdraw or persist.

Premises

Existing research on the college dropout indicates that many investigators hold certain assumptions in common. These assumptions or premises were also basic to the formulation of specific purposes for the present study:

1. There is a need for basic research that seeks to isolate personality dimensions in order to identify the potential school dropout.
2. Characteristics that differentiate the student with high dropout potential and the student with high persistence potential must be identified so that academic procedures can be developed and evaluated. If "we want to understand the phenomenon of dropouts, we must understand comparative studies ... of dropouts and non-dropouts alike" (57:25).
3. Academic attrition cannot be viewed solely in terms of the student, no matter how complete this analysis may be. The issue, rather, is a multi-faceted one that requires investigation of the student interacting with other members

- of the college milieu -- peers, faculty members, administrative forces -- and the general environmental effects of the college itself.
4. Despite many efforts to isolate and understand characteristics that might describe the "good" teacher, student withdrawal rates have not been related to dimensions of teacher personalities, abilities, or goal orientation. While such a project may be difficult at this particular time, it is important to bear in mind for future investigation.
 5. There is a definite lack of experimentation with action programs designed specifically to reduce attrition.
 6. There is a need for analysis of institutions' organizational characteristics that might affect attrition rates.
 7. Withdrawal rates in specific colleges have implications for faculty members in that a high dropout rate may eventually affect faculty morale. This may be true especially in the teaching of introductory courses to college freshmen -- a circular effect can take place among freshmen who become disenchanted with faculty members who then become disenchanted with students (50).
 8. The question of attrition in college requires continual in-depth investigation and the implementation of relevant findings. While all facets of the phenomenon of dropout can hardly be studied in a single population or a single project, it is important to entertain in any research project many of the considerations already suggested.
 9. "Although the term 'college dropout' has become a bad word in the popular press in the American hometown ... the possibilities of both loss and benefits should be considered' (32:83). Perhaps "dropout" is not a negative term. Indeed, the dropout may be exhibiting strengths not possessed by his fellow students. At this point in our body of knowledge about education, however, we do not know how best to serve those who enter our colleges, conceivably for purposes of completing their education through set programs.
 10. Early identification of the potential dropout may lead to communication of more clearly defined goals and more efficient use of resources. Programs may be especially tailored to answer the

specific needs of different kinds of students enrolled for varying periods of time and various purposes. Identification of problems associated with the dropout may also lead to evaluation of what is learned in the schools, by whom, and to what ends.

The Attrition Study

The subjects for this study were incoming freshmen students at the community college described in Chapter 2. The English faculty was divided into two groups -- one experimental and one control. The experimental group included instructors who volunteered to engage in a three-session workshop (N) with the UCLA team; the remaining members of the department were considered the control group.

The underlying hypothesis of this attrition study was that there are significant differences between students classified as school dropouts and those classified as persisters, in terms of one or more personality, ability, or demographic measures. It was further hypothesized that a group of highly efficient predictor variables would become evident. The findings of the investigation would provide data for (1) enhancing the accuracy of predictions of student attrition, (2) adjusting counseling procedures, (3) encouraging junior college instructors to define their objectives more precisely for their students, and (4) developing hypotheses for identifying potential dropouts from continuing students.

Results

Three groups of data were collected: (1) normative, i.e., age, sex, socioeconomic class, number of schools attended, etc.; (2) ability test, i.e., stanine levels on the Henmon-Nelson Tests of Mental Ability, and the Cooperative English Test: Reading Comprehension; and (3) scores on two personality assessment scales, the Omnibus Personality Inventory (OPI) and the Adaptive-Flexibility (A-F) Inventory.

The classification "Dropout" was assigned to students who did not finish the first semester and to students who did not re-enroll or transfer to another school at the beginning of the second semester. "Persisters" were those who finished the first semester and either re-enrolled or transferred prior to the second semester.

Although all students in the sample (259) were given all instruments, a large number (134) failed to complete the OPI in the allotted time. This factor of non-completion seriously biased the

remaining sample in regard to the OPI, but the data from the other instruments were relatively complete. All tests for significant differences were non-directional, since no direction of difference was predicted.

In the group of students who completed the OPI, 100 were Persisters and 25 were Dropouts: Of those who failed to complete the OPI, 100 were Persisters and 34 Dropouts. Although this difference was not significant, only completed OPIs were used in the data analysis because items in each scale are distributed throughout the instrument. Differences between the uncorrelated means on each OPI scale of the Persisters and the Dropouts were tested by t tests. Of the 14 scales, a significant difference was found only on the Co scale, on which the Dropout group was higher ($t = 2.36, p < .05$).

More complete data were available from the A-F Inventory, with scores from 187 Persisters and 56 Dropouts. Although the Persisters' mean A-F score was slightly higher than that of the Dropouts, the difference was not significant.

Henmon-Nelson (Grades 9-12) stanine scores were collected for 151 Persisters and 43 Dropouts. The differences between the means of the two groups on this measure was small and the derived t 's were not significant.

The data from the questionnaire were almost entirely nominal and the null hypothesis of no difference between Persisters and Dropouts was tested by Chi-square for each relevant item. Significant differences were found as follows:

- 1) Dropouts showed a tendency to be enrolled for fewer than 12 units, whereas Persisters tended to be enrolled for 12 or more ($\chi^2 = 10.56, p < .01$).
- 2) Dropouts tended to be employed more time outside school than Persisters ($\chi^2 = 20.05, p < .01$).
- 3) Dropouts tended to have attended more schools prior to the 10th grade than did Persisters ($\chi^2 = 12.65, p < .01$).
- 4) The mothers of Dropouts tended to have less education than those of the Persisters; specifically, more mothers of Dropouts did not complete high school ($\chi^2 = 12.93, p < .05$).

With regard to the hypothesis that the data would yield a set of predictor variables, an initial intercorrelation matrix was formed. Each scale on the OPI, the A-F Inventory, aptitude stanines, and all other measured variables were correlated with each other (product-moment co-efficient) and with the dichotomous criterion variable, Dropout-Persist (point bi-serial). Further analyses were

unrewarding because of the high intercorrelation among the proposed predictor variables, the very low correlation of any proposed predictor with the criterion variable, and the biasing of the sample. The students in the sample were enrolled in three levels of English courses: English I (college-parallel), English 21 (preparation for English I), and English 30 (remedial). There was no significant difference among the three groups in the attrition rate; similarly, there was no significant difference among the groups in the proportion of students withdrawing from that course.

In addition to the comparisons of the Dropout groups and the Persister group on the variables measured by the instruments used, comparisons were made of other sub-groups of the total sample. The data concerning personality variables and ability variables were used to compare the sub-groups, "First-Semester Dropout" and "Second-Semester Dropout." There were no significant differences between the two groups on any of the ability measures or on the A-F Inventory. However, the First-Semester Dropouts' mean on the TI scale of the OPI was significantly higher than the Second-Semester Dropouts' mean ($t = 2.28, p < .05$); and higher on the Es scale ($t = 2.41, p < .05$). On the IO scale, the Second-Semester Dropouts' mean was higher than that of the First-Semester Dropouts ($t = 2.24, p < .05$).

The question of whether students grouped by English class level were different with regard to academic ability and personality factors was tested. An analysis of variance indicated significant differences on the OPI scales TI, Es, PO, and IO. Subsequent t tests indicated that the English I class was higher than the English 30 class on the TI scales ($t = 2.29, p < .05$) and Es ($t = 2.45, p < .05$). The English 30 class was higher than the English I class on the scales PO ($t = 2.95, p < .01$) and IO ($t = 3.58, p < .01$).

On the A-F Inventory, the English I class mean was significantly higher than the English 30 mean ($t = 2.32, p < .05$). The English 21 class mean was significantly higher than the English 30 mean ($t = 2.27, p < .05$). The English I class mean was slightly higher than the English 21 class mean.

On the Henmon-Nelson, the English I class mean was significantly higher than English 21 ($t = 2.46, p < .05$) and English 30 ($t = 5.61, p < .01$). The English 21 mean was higher than the English 30 ($t = 3.96, p < .01$). For all three English classes there was little difference in rate of attrition. On self-reported high school GPA, there was no significant difference between the Dropouts and the Persisters ($t = .559$).

Discussion

The study did not yield any findings of major importance

regarding the question of the differences between Dropouts and Persisters on selected measures. However, there were certain results that suggest further investigation.

The fact that students who scored high on the Complexity Scale of the OPI were more likely to drop out of school than those who scored low on that scale corroborates findings reported in a study of UCLA freshmen (47). Trent and Medsker (103) also noted that, "On the Complexity Scale ... the withdrawals [had] ... a higher mean score than the persisters, although differences were not statistically significant" (103:136,138). It is conceivable that in some cases the Complexity Scale actually reflects a general disregard for tradition rather than an ability to tolerate ambiguity.

Twelve semester units are considered a minimal load for a full-time student in the junior college. Since Dropouts tended to be enrolled for fewer than twelve units, this suggests they are less committed to full-time school-work, hence more inclined to leave when conditions within the college become unpleasant or impinge on other activities, such as their jobs. It also suggests -- as does much of the literature -- that withdrawal from the junior college is related to financial demands, especially since Dropouts reported more time spent in outside employment.

Another finding was that Dropouts reported a greater number of schools attended prior to the tenth grade. This may suggest early instability in the family and also that, once a pattern of non-completion is established, it may persist throughout the school years.

Family influence on college attendance has been reported by many investigators. The finding in this study that mothers of Dropouts were less likely than mothers of Persisters to have completed high school corroborates these previous findings.

Dropouts may be less committed than Persisters, but they may be more realistic. Seven instructors taught sections of English I. For purposes of this study, individual student grades were computed by section and the instructors were ranked according to average marks given in their English I sections. A correlation of .71 ($p < .05$) was found to result when the statement, "The higher the grades given by an instructor, the lower the number of students who drop his classes" was tested. An implication of this finding is that many students drop out of classes -- and indeed, of school -- when they realize they are in a precarious position regarding grades. When OPI measures were related to placement in English classes, the results implied that so-called "tracking" practices may actually be differentiating between the cognitively- and the practically-oriented individual. If further study substantiates this finding, it would be reasonable for junior colleges to place students into English classes on the basis of goal

orientation (academic or vocational) or on a test of English usage. However, if goal orientation and personality measures point to both placement and propensity to persist (or drop) and a test of English usage suggest only placement, it may be more expedient to use the measures that yield more information.

Chapter VI

CONCLUSIONS AND IMPLICATIONS

Both general and specific information about a field may be extended by the direct results of research. An awareness of the particular events that transpired during the process of investigation can also add to a body of knowledge. Together, the immediate findings and relevant experiences may augment the actual implementation of changed procedures and perceptions indicated by a particular project. In Chapters IV and V, questions were raised about the relative heterogeneity of junior college freshmen and about personality characteristics associated with student withdrawals. In this Chapter, problems relating to these research efforts will be discussed, implications will be noted, and a plea for replication will be made. In such a discussion, it is important to consider dimensions that extend beyond the mere reporting of data. For example, of what use can such information be for the junior college administrator? for counseling and guidance personnel? for the student himself? How can other investigators further test the hypothesis and thereby deepen the understanding of college freshmen? Is the popular concern with attrition justifiable? Does it really matter whether an individual persists or withdraws from school?

Conducting a Study

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 (85). Most studies that go beyond data compilation are organized by education laboratories, R&D centers, and university-based researchers. If research is to have any effect on institutional functioning, however, it cannot be conducted by people who operate exclusively apart from the subject-college's staff, and who then send results back to those individuals making operational decisions. Investigations must involve the practitioners on the scene, not because they help in collecting data, but because they are not likely to take action on the findings unless they have been intimately involved in the examination process.

Even before research results are available, the issue of outside researchers presents potential problems. A study may be carefully conceived and well designed, but unless all people involved are thoroughly apprised of their roles and genuinely desire to participate, difficulties may accrue at any of several points along the way. This process was described by Fairweather (28) as the "yes-no" phenomenon evaluative research, that it is common for

management to commit itself without foreknowledge of its obligations. When specific questions are not asked, management is inclined to profess interest in a research program. However, when asked to implement the program (for example, to obtain adequate space and support) the same management becomes negative. Thus, the "yes-no" phenomenon.

In terms of an educational structure, administrators often claim to fully understand the purposes of a study. Accordingly, full cooperation is pledged. But, because of misunderstanding about the totality of the cooperation needed or because of communications breakdowns, when the time comes to perform some task, management says "no." For many an investigator, what could have been a well-executed, easily implemented study has thus been converted into a tedious task.

In any effort where investigators are at an institution for the specific purpose of conducting a project, full cooperation of the staff is needed. Hardly sufficient is a superficial "Oh, yes; we are glad to have you; we want to do a study of this type; we will be interested in the results." School administrators need to fully comprehend the meaning of a study and need to be willing to say to their staff, "This is what we are going to do and this is the role you play."

An example of this situation appeared in connection with the study reported in this Monograph. It was originally conceived as a project to assess entering junior college students' relative heterogeneity and dropout rate and, also, to attempt to effect change in dropout through altered instructional practices. The investigators hypothesized that instructors who wrote specific instructional objectives and distributed sets of them to their students in the first week of class would have lower drop-rates than instructors who performed in the traditional fashion, letting the students know assignments as they went along. The rationale was that the students would gain a feeling of security if, at the outset, they understood exactly what it was they would be required to do to complete the course successfully.

This hypothesis was not tested because of a variety of complications: instructors who volunteered for membership in the experimental group were unaware that their participation would require a certain amount of additional work; most English instructors at the subject college had never prepared objectives in the precise sense required for the full communication of learning tasks; many instructors, unaware of their roles in the project because they had not been informed of its scope, were surprised and annoyed that two hours of their class time were to be spent in administering inventories.

The points, then, to be considered in all research of the type reported here include the following:

- 1) Investigators must be sure that college personnel who insist they want research, innovation, and experimentation are aware of what is involved. They must know clearly the extent to which they will need to participate in the design, administration, and reporting of the study.
- 2) If an investigator is invited to conduct a study, he must be trusted to the extent that the administrative staff will send the memos, call the meetings, and obtain the participation of the required staff.
- 3) The liaison person who is appointed must be able to understand not only his own staff but also the implications of the research project. He must be able to anticipate objections and to counter them with information drawn from his own awarenesses of the purposes of the project.
- 4) Every member of the college staff should be brought into the study, whether in a workshop or simply by being apprised of the progress of the study. Junior college research is -- or should be -- formative in nature. That is, the research should be designed for the purpose of gaining data that can be used to change institutional practices. If practices are to be changed on the basis of the findings of a study, the entire staff must be well aware of how the study is conducted.

Implications

The fact that educators often tend to overlook differences among their students may well be behind many contemporary problems in education. Although this has been said many times, still little has been done to modify the situation. Even those educators who are sincerely concerned about the different types of students they serve often direct their efforts, plan curricula, and develop programs as if all people were of a single type. Looking at students as individuals phenomenologically, from the standpoint of their own unique characteristics, is beyond the province of many who are forced instead to concentrate upon immediate concerns and thus to disregard the broader implications of personal differences and special needs. The varied demands on academia have cornered the market in such a way that these differences are often ignored -- at least until they are forced to the fore by students themselves.

What can be done to accommodate individual differences? As practiced, curricular tracking is a sterile exercise -- the differences in the courses are more apparent than real (13). Tracking may perhaps answer some questions, but it cannot be based solely on

prior grade marks or responses to one test. School counselors often act as program advisors and, if the programs all employ the same pedagogies, their advice cannot reach deeply into questions revolving about individual needs.

Other problems are equally pressing. For example: are there reforms that might be brought about to change existing institutional structures of curriculum and instructional practices? Do so-called innovations actually touch on the problems (15)? Can any single change make a difference? That is, can individual differences be accommodated by changing sources of instructors, patterns of administration, course patterning, etc., or must all be examined together? It is beyond the scope of this study to address these issues directly.

Despite the common practice of describing community colleges as extremely heterogeneous institutions, there is a question as to just what the characteristic of heterogeneity really means and whether it is relevant indeed to this institution. The literature suggests that the concept must be defined specifically before it can be used generally. The junior college may thus be heterogeneous along certain dimensions, homogeneous along others. Colleges are highly diversified and the students do not typically yield a consistent portrait; however, before judging them "heterogeneous," the term itself must be defined.

In this Monograph, some personal dimensions have been examined as variables relating to the appraisal of junior college freshmen. If other studies of community college students corroborate some of the findings reported here, many changes are suggested. Some of these changes can be initiated now; others await greater understanding of the phenomena of teaching and learning. As a case in point, the Omnibus Personality Inventory results suggested low intellectual disposition. Therefore, a new pedagogy is required to deal adequately with that phenomenon. Simply placing students into alternative courses in which they meet the same instructors, grade-marking patterns, textbooks, and assignments will not suffice.

Other findings on the OPI scales have still further implications. The tendency for high impulse expression may be interpreted as a demand for immediate gratification. Thus these college freshmen may need to see the relevance of school to their lives at the time they are in attendance. Indeed, it may be difficult for them to take a test to pass a course to complete a program to gain a job or admission to a university years in the future. What is the value of the test today? What is the meaning of this lecture to my life now? Attention to these queries may be one of the more serious missing elements in junior college education.

Many writers suggest that the inability to delay gratification lurks behind the volatile type of student unrest, as well as behind the dropout phenomenon. The abrasiveness of militant students may be explained by "uncompromising demands for immediate gratification" (62:150). Can the junior college alter its procedures to allow for rapid gains, easy victories, quick satisfactions on the part of its students?

The A-F Inventory revealed students' tendency toward vivid imagery, creativity, and flexibility. Coupled with the high impulse expression exhibited in responses to the OPI, a bent toward fantasy is evident. Yet the students lacked basic intellectual tools -- their grades were low, their spelling was poor, etc. What can be offered to these students to allow them free play of their imaginations within the school setting? Can fantasy be given free rein, school made more fun? If so, can the students then acquire the basic concepts and disciplines so necessary to achievement in higher education? Much examination of junior college environments and practices remains to be done.

In reviewing their research findings, it is not unusual for some investigators to suggest that "There is a need for the counselor to look at the student as a whole;" "The individual must be seen as a unique personality;" "The student's attitude is an important consideration in academic and vocational counseling." These suggestions may all be considered in assessing the results of the present study. A greater emphasis, however, should be put on a more specific area -- the fact that students frequently have either unrealistic or ambiguous goals that possibly need clarification. One may ask whether many of the freshmen appraised in this study were at all aware of the sequencing of college programs, whether they knew what positions required what degrees, and where such degrees might be obtained. Similar questions could be asked about the student's awareness of their parents' academic backgrounds and their vocations. Several students replied that their fathers were in professional fields, whereas they also indicated that the fathers had had only grade school preparation.

If junior college freshmen are actually less heterogeneous along certain dimensions than they are generally assumed to be, there are distinct implications for counseling and instruction in these schools. If the students are generally low in academic ability, high in impulse expression, and lacking in clear and consistent goals, they may need more time to make choices. A junior college counseling service then, should not be arranged so that students are pressured into early choices of a major. Forced choices of majors or of transfer institutions do not well serve the student who is not yet prepared to choose an academic or career path and who may need time in which he can be allowed "to be."

Perhaps the most general statement that can be made regarding the results of this investigation is that the kinds of data obtained do not suggest the quality of heterogeneity usually ascribed to junior college students. The questions relating to homogeneity and heterogeneity that were raised earlier can be resolved only by further questions: How homogeneous and how heterogeneous? And on what variables? On what bases are junior college freshmen like other college freshmen? How do they differ? What is the range of differences in any particular sample? Is this range matched in other junior college populations? The questions, of course, cannot be answered by one study in one school, but the data do point toward several dimensions of homogeneity among the junior college freshmen examined in this project. On the A-F Inventory, 87 per cent of the population were placed into the middle range scores of 3,4 and 5. If this finding is substantiated by repeated results, it may indicate that junior colleges tend not to attract extremes but, rather, a large number of students from a homogeneous population.

Personal dimensions relating to the propensity of freshmen to accept or reject school have been examined. Certain tendencies were reported, but other questions must be faced. To what extent should we be concerned with students who drop out of school before completing their programs? The entire dropout "problem" calls into question the total educational enterprise. How much longer can schools continue to change procedures only minimally and to allow dropout to remain as high as it is? Is it really a "problem" or does it exist only on paper (13)? If schools have set goals, absolute curriculum standards, and definite directions, and still find that 30 to 60 per cent of those for whom these are developed fail to complete programs, then examination of directions and questioning of values must begin. Because, however, of the discomfort occasioned by students' apparent unwillingness or inability to play the educational game, sides are taken and partisans appear. Does it really make a difference whether or not students attend college or stay in college? To whom does it matter? Are the lives of those who persist and those who withdraw changed? Are their value systems altered? Using tools currently available, research has found too little alteration of students' patterns of thinking to actually justify the worth of the system (53). The question, then, is not the extent to which they change by being in school, but the charged issues: "Do they deserve this opportunity?" "Is school a privilege or a right?" The proponents fall into two camps -- those who say, "Keep them in at any cost" and those who suggest by their actions that "If they won't do what we say, wipe them out!" Somewhere, on a philosophical reef, the dropout abandons ship.

Hidden in most studies of attrition is the implication that persistence in school has a value of its own. If persistence is

not a value, why be concerned with the dropout? Why study his background or his personality at all? The whole issue stems from the fact that college is seen as a "good" and thus any individual who fails to accept his opportunity to complete college is misguided or somehow inadequate. As long as the dropout is seen as having failed himself and his community, studies will continue to hold the implicit value that the dropout has somehow failed.

In actuality, however, students drop out of school for many reasons. Some return, some find satisfactions elsewhere, and still others vociferously reject the institution of school throughout their lives. For forty years, attrition rates in college have remained much the same (51), ranging from 12 to 82 per cent (95) and averaging approximately 50 per cent. But, while the per cent of students who become academic dropouts remains fairly constant, the actual number soars because of the greater number of students in higher education. And no matter how many "stay-in-school" campaigns are mounted, no matter what threats of unemployment are leveled at youngsters who drop out, the phenomenon persists.

It is not likely then that the redundant information compiled by so many studies dealing with background data and selected traits of students will alter college practices or dropout figures. Findings from most studies are inconclusive or are impossible to generalize from (26;81;80;103;70). Organizational changes in the schools have not changed the situation. Then why continue the study? The reasons must be found elsewhere.

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 importance to certification of individuals. Students who make their exit prematurely, before completing a standard cycle, are dropouts or failures depending upon whether they have left voluntarily or have been rejected by the marking mechanism of the system. Granted that the non-finishers are not a dead loss -- they do carry something useful away -- "the important point is that societies and educational systems themselves make a sharp distinction between finished and unfinished products" (20:64-65). The system's problem is that it judges itself by its output and its output is students who have completed a program. The problem for the individual, of course, is that in a society where educational attainments -- symbolized by certificates and degrees -- are closely linked to preferred categories of employment and to social status, the student who finishes has much more promising career prospects. The one who drops out or fails, on the other hand, burns important bridges to the future. ...when the dropout rate is high, the managers of such a system can be tormented by a sense of guilt, suspecting that they may have been the hand that cut off the dropouts' future chance (20:64-65).

Put in those terms, the problem is insoluble. When a system is wide open, its mission is to give every person a chance. In a selective system, examinations push out a specified percentage of students at various stages along the way; in an open system, the students must drop out if they are to leave. If the students are dropping out of high school in fewer numbers now, the "problem" has become a matter of concern at the next higher level. In this generation, it is the junior college that has the problem particularly -- more than half the students who enter do not complete their programs. However, if larger percentages of students did complete junior college and enter upper division at the university, the problem would soon transfer itself to that level of education.

Thus the dilemma is posed. If junior colleges selected at entrance, young people would be denied the right of education to their fullest potential. If the staff encouraged dropout -- as, for example, by assigning failing marks -- students would be denied certification and might feel disconcerted. Further, the staff would be forced to justify its actions by peculiar rationalizations -- "You're just not college material" -- the current state of the teaching art. But if the junior college accepted accountability for putting all students through school, the "dropout problem" would become one for the upper division of the university and for the graduate school.

Ludicrous? Of course. The premises are in error. A system that judges its worth by its "finished products" and a society that views certification as evidence of knowledge -- these are the causes of the "dropout problem." If education were seen in other terms, the problem would disappear.

In principle, viewing students as "input" and "output" of an educational system is offensive. It smacks of the school as a factory bringing in raw material (the student), processing it (teaching), and then turning out manufactured goods. A better way perhaps to view the school is as a "field of force" and the students as "the charged particles which enter the field" (59). Rather than simple raw material entering a factory, students may be seen as individuals each moving at a certain velocity, spinning, and headed in certain directions. In the school as a "field of force," then, "each student receives a new velocity and a new direction and perhaps a new spin because of his total experience in the school." He is not a bit of stuff to be shaped, but is an individual being influenced, sometimes to a great extent, more often less significantly.

When seen thus, "dropout" is not a question in itself. Rather, "What did the students look like upon entrance? Like what upon exit?" Regardless of whether or not the students completed a course or a program set up for them, these are the crucial questions; they

are not addressed by the type of research reported in most studies of student attrition. As long as staying in school is seen as the end of the endeavor -- as a value of itself -- this type of educational research will serve little useful purpose. Whether students are viewed as individuals or as groups, as materials to be handled, or as young people to be given "opportunities" matters not. The school experience as an end in itself is the problem in conceptualizing attrition studies.

In spite of the many investigations dealing with the college dropout, there are many questions that remain unresolved. In view of other demands in higher education today, it might first be asked if it is reasonable to expect changes in the picture of the college dropout, particularly when the percentage of attrition remains fairly constant and has remained so over the past forty years. The following questions might eventually generate further research and, we hope, answers to these growing problems. Is the demand to deal with the problem of attrition really too rational, too old-fashioned, and too outworn for our society today so loudly clamoring for relevance? Do we actually protect society by excluding from our schools those members who don't or can't meet certain demands made upon them? Do we weaken ourselves in this mass exodus of people from institutions of higher education or is this just another feature of the kinds of selectivity that apparently exist in a democracy pledged to active education, but simultaneously encouraging passive (sometimes not so passive) rebellion? If our basic trust 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? Much work on the issues remains.

REFERENCES

1. Abbas, Robert D. Interpersonal Values of the Junior College and University Student. Columbia: University of Missouri, NDEA Institute, 1967.
2. Adelson, Joseph. "The Teacher as a Model." In The American College. (Edited by Nevitt Sanford). New York: John Wiley & Sons, Inc., 1962.
3. Astin, A. W. Who Goes Where to College? Chicago: Science Research Associates, 1965.
4. Barry, Ruth, and Wolf, Beverly. An Epitaph for Vocational Guidance: Myths, Actualities, Implications. New York: Bureau of Publications, Teachers College, Columbia University, 1962.
5. Beardslee, Donald, and O'Dowd, Donald. "Students and the Occupational World." In The American College. (Edited by Nevitt Sanford). New York: John Wiley & Sons, Inc., 1962. pp. 597-626.
6. Bereiter, Carl, and Freedman, Mervin B. "Fields of Study and the People in Them." In The American College. (Edited by Nevitt Sanford). New York: John Wiley & Sons, Inc., 1962. pp. 563-596.
7. Brawer, Florence B. The Concept of Ego Strength and Its Measurement Through A Word Association Technique. Doctor's Thesis. Los Angeles: University of California, 1967. Abstracted in: Dissertation Abstracts 28:1699-A.
8. ----- . Personality Assessment of College and University Faculty: Implications for the Junior College. Washington, D. C.: American Association of Junior Colleges, 1968.
9. Brawer, Florence, and Cohen, Arthur M. "Global and Sign Approaches to Rorschach Assessment of Beginning Teachers." Journal of Projective Techniques and Personality Assessment 30 (6); 1966.
10. Buros, Oscar K., ed. Fifth Mental Measurements Yearbook. Highland Park, N. J.: Gryphon Press, 1959.
11. ----- . Sixth Mental Measurements Yearbook. Highland Park, N. J.: Gryphon Press, 1965.

12. Cattell, Raymond B. "Confirmation and Clarification of Primary Personality Factors." Psychometrika 12: 197-220; September 1947.
13. Cohen, Arthur M. Dateline '79. Beverly Hills, California: Glencoe Press, 1969.
14. ----- . "Defining Instructional Objectives." Systems Approaches to Curriculum and Instruction in the Open-Door College. (Edited by B. Lamar Johnson). Junior College Leadership Program Occasional Report No. 9. Los Angeles: University of California, School of Education, 1967.
15. ----- . "Is Innovation Relevant?" California Teachers Association Journal 65:28-29; January 1969.
16. Cohen, Arthur M., and Brawer, Florence B. "Adaptive Potential and First-Year Teaching Success." Journal of Teacher Education 43:179-185; Summer 1967.
17. ----- . Measuring Faculty Performance. Washington, D. C.: American Association of Junior Colleges, 1969.
18. Coleman, J. S. "The Adolescent Subculture and Academic Achievement." American Journal of Sociology 65:337-347; 1960.
19. Committee on the College Student. The College Experience: A Focus for Psychiatric Research. New York: Group for the Advancement of Psychiatry, Report 52, 1962.
20. Coombs, Phillip Hall. The World Educational Crisis; A Systems Analysis. New York: Oxford University Press, 1968.
21. Cooper, Lewis B. "A Study in Freshman Elimination in One College." Nation's Schools 2:25-29; September 1928.
22. Cronbach, Lee J. Essentials of Psychological Testing. (Second Edition). New York: Harper, c.1960.
23. Cross, K. Patricia. "Beyond Ability." The Research Reporter 2:1-4; 1967. Reprinted by Journal of the Association of College Admissions Counselors 12:9-11; 1967 in a slightly abbreviated version.
24. ----- . The Junior College Student: A Research Description. Princeton, N. J.: Educational Testing Service, 1968.

25. Dressel, P. C. "Liberal Arts Students Advised to Withdraw." Journal of Higher Education 14:43-45; January 1943.
26. Eckland, B. K. "College Dropouts Who Came Back." Harvard Educational Review 34:402-420; Summer 1964.
27. Erikson, E. H. Childhood and Society. (Second Edition). New York: Norton, 1963.
28. Fairweather, George W., ed. Social Psychology in Treating Mental Illness; An Experimental Approach. New York: Wiley, 1964.
29. Farnsworth, D. S.; Fundenstein, D.; and Wedge, B. A Study of the Social and Emotional Adjustment of "Early Admission" College Students. Report for the Fund for Advancement of Education, 1955. (Mimeo).
30. Feder, D. "Factors Which Affect Achievement and Its Prediction at the College Level." Journal of the American Association of Registrars 15:107-117; 1940.
31. Feldman, Marvin J. Public Education and Manpower Development. New York: Ford Foundation Office of Reports, 1967.
32. Ford, David H., and Urban, H. B. "College Dropouts: Successes or Failures?" In The College Dropout and the Utilization of Talent. (Edited by L. A. Pervin, L. E. Reik, and W. Dalrymple). Princeton, N. J.: Princeton University Press, 1966.
33. Freedman, M. "The Passage Through College." Journal of Social Issues 12:13-28; 1956.
34. Gable, R. I. "A Study of the Student Drop-Out Problem at Miami University." Dissertation Abstracts 17:61; 1957.
35. Gage, N. L., ed. The Handbook of Research on Teaching. Chicago: Rand McNally & Co., 1963.
36. Gleazer, Edmund J., Jr. "An Introduction to Junior Colleges." In American Junior Colleges. (Edited by Edmund J. Gleazer, Jr.). Seventh Edition. Washington, D. C.: American Council on Education, 1967. pp. 3-60.
37. Goldberg, I., and Dailey, J. T. Research on Academic Degree Projections: The Identification and Development of Talents of 1960 High School Graduates. Palo Alto: Project TALENT, August 1963. Unpublished report.

38. Gough, H. G. Manual for the California Psychological Inventory. (Revised Edition). Palo Alto, Calif.: Consulting Psychologists Press, 1964.
39. Green, R. F. "Does a Selection Situation Induce Testees to Bias Their Answers on Interest and Temperament Tests?" Educational Psychology Measurement 11:503-515; 1951.
40. Gross, Martin L. "It's the Drop-Out Level, Not the Rate, That's Worrisome." Los Angeles Times March 14, 1969.
41. Hathaway, S. R., and McKinley, J. C. Minnesota Multiphasic Personality Inventory Manual. (Revised Edition). New York: Psychological Corporation, 1951.
42. Heath, G. R., Jr. "Personality and Student Development." New Dimensions of Learning in a Free Society. Pittsburgh: University of Pittsburgh Press, 1958. pp. 225-245.
43. Heist, Paul. "Creative Students: College Transients." The Creative College Student: An Unmet Challenge. (Edited by Paul Heist). San Francisco, Calif.: Jossey-Bass, 1968.
44. ----- "Diversity in College Student Characteristics." Educational Sociology 33:279-291; 1960.
45. ----- "The Student." In Education for the Professions. (Edited by Nelson B. Henry). Sixty-First Yearbook of the National Society for the Study of Education, Part II. Chicago: University of Chicago Press, 1962.
46. Heron, A. "The Effects of Real-Life Motivation on Questionnaire Responses." Journal of Applied Psychology 40: 65-68; 1956.
47. Hessell, William F. A Study of the Relationship of the Omnibus Personality Inventory to College Performance. Los Angeles: University of California, 1963. (Mimeo).
48. Holland, J. L. "Undergraduate Origins of American Scientists." Science 126:433-437; 1957.
49. Holt, Robert R., and Luborsky, Lester. Personality Patterns of Psychiatrists. New York: Basic Books, 1958.
50. Iffert, R. E. "Institutional Implications--Facilities, Faculties, Students." Paper presented at the Princeton University Conference, October 8, 1964.

51. ----- . Retention and Withdrawal of College Students. Bulletin No. 1, U.S. Department of Health, Education and Welfare. Washington, D. C.: U.S. Government Printing Office, 1957.
52. ----- . "What Ought Colleges and Universities Do About Student Mortality?" Current Issues in Higher Education. Washington, D. C.: National Education Association, 1954.
53. Jacob, P. E. Changing Values in College. New York: Harper Bros., 1957.
54. Jencks, Christopher, and Riesman, David. The Academic Revolution. Garden City, N. Y.: Doubleday & Co., Inc., 1968.
55. Katz, Joseph. "Personality and Interpersonal Relations in the College Classroom." In The American College. (Edited by Nevitt Sanford). New York: John Wiley & Sons, Inc., 1962.
56. Knoell, Dorothy M. "A Critical Review of Research on the College Dropout." In The College Dropout and the Utilization of Talent. (Edited by L. A. Pervin, L. E. Reik, and W. Dalrymple). Princeton, N. J.: Princeton University Press, 1966.
57. Kubie, L. S. "The Ontogeny of the Dropout Problem." In The College Dropout and the Utilization of Talent. Princeton, N. J.: Princeton University Press, 1966.
58. Landis, C., and Katz, Joseph E. "The Validity of Certain Questions Which Purport to Measure Neurotic Tendencies." Journal of Applied Psychology 18:343-356; 1934.
59. Laurits, James. "Thoughts on the Evaluation of Teaching." Educational Horizons 45:87, 97; Spring 1967.
60. Lerner, Ruth S., and Martin, Marion. "What Happens to the College Student with a Physical Handicap?" Personnel & Guidance Journal 34:80-85; October 1955.
61. Lindvall, C. M., ed. Defining Educational Objectives. A Report of the Regional Commission on Education Coordination and the Learning Research and Development Center. Pittsburgh: University of Pittsburgh Press, 1964.
62. Mayhew, Lewis B. "A Rending of Accounts." In Stress and Campus Response. (Edited by G. Kerry Smith). San Francisco, Calif.: Jossey-Bass, 1968. pp. 144-158.

63. McConnell, T. R., and Heist, Paul. "The Diverse College Student Population." In The American College. (Edited by Nevitt Sanford). New York: John Wiley & Sons, Inc., 1962. pp. 225-252.
64. ----- . "Do Students Make the College?" College and University 34:442-454; 1959.
65. McKeachie, William J. "Research on Teaching at the College and University Level." In Handbook of Research on Teaching. (Edited by N. L. Gage). Chicago: Rand McNally & Co., 1963.
66. ----- . "Significant Student and Faculty Characteristics Relevant to Personalizing Higher Education." In The Individual and the System. (Edited by W. Minter). Boulder, Colorado: Western Interstate Commission for Higher Education, November 1967.
67. Medsker, Leland L., and Trent, James W. Factors Affecting College Attendance of High School Graduates From Varying Socioeconomic and Ability Levels. USOE Cooperative Research Project No. 438. Berkeley: Center for Research and Development in Higher Education, University of California, 1965.
68. ----- . The Influence of Different Types of Public Higher Institutions on College Attendance From Varying Socioeconomic and Ability Levels. USOE Cooperative Research Project No. 438. Berkeley: Center for Research and Development in Higher Education, University of California, 1965.
69. Mercer, Margaret. "A Study of Student Mortality in a Home Economics College." Journal of Educational Research 34:531-537; March 1941.
70. Mitchell, James A., and Moorehead, Ralph. 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. Yuma: Arizona Western College, 1968.
71. Montgomery, J. R. Proceedings of the Research Conference on College Dropouts. Cooperative Research Program of the Office of Education. Knoxville: University of Tennessee, 1964.
72. Munroe, Ruth L. "Prediction of the Adjustment and Academic Performance of College Students by a Modification of the Rorschach Method." Applied Psychology Monographs No. 7. Palo Alto, Calif.: Stanford University Press, 1945.

73. Newcomb, Theodore M. Personality and Social Change. New York: Dryden, 1943.
74. ----- . "Student Peer-Group Influence." In The American College. (Edited by Nevitt Sanford). New York: John Wiley & Sons, Inc., 1962. pp. 469-488.
75. Newcomb, T. M., and Feldman, K. A. The Impacts of Colleges Upon Their Students. A Report to the Carnegie Foundation, 1968.
76. Pace, C. Robert. Colloquium with faculty, University of California, Los Angeles, 1969.
77. ----- . Exploration in the Measurement of Junior College Environments. Los Angeles: University of California, January 1967.
78. ----- . "Five College Environments." College Board Review 41:24-28; 1960.
79. ----- . "Implications of Differences in Campus Atmosphere." In Personality Factors on the College Campus. (Edited by R. L. Sutherland). Austin: The Hogg Foundation for Mental Health, 1962.
80. Panos, Robert J., and Astin, Alexander W. "Attrition Among College Students." American Council on Education Research Reports Vol. 2, No. 4, 1967.
81. Pervin, L. A.; Reik, Louis E.; Dalrymple, W. The College Dropout and the Utilization of Talent. Princeton, N. J.: Princeton University Press, 1966.
82. Pressey, Sidney L., and Kuhlen, Raymond G. Psychological Development Through the Life Span. New York: Harper, 1957.
83. Roe, Anne. "Early Determinants of Vocational Choice." Journal of Counseling Psychology 4:212-217; Fall 1957.
84. ----- . The Psychology of Occupations. New York: Wiley, 1956.
85. Roueche, John E., and Boggs, John R. Junior College Institutional Research: State of the Art. Washington, D. C.: American Association of Junior Colleges, 1968.
86. Rust, R. M., and Ryan, F. J. "Personality and Academic Achievement; A Questionnaire Approach." Paper read at the annual meeting of the American Psychological Association, San Francisco, 1955.
87. Sanford, Nevitt, ed. The American College. New York: John Wiley & Sons, Inc., 1962.

88. ----- . "The College Student in the World Today." In The College Student and his Culture: An Analysis. (Edited by K. Yamamoto). Boston: Houghton-Mifflin Co., 1968.
89. ----- . "Higher Education as a Field of Study." In The American College. (Edited by Nevitt Sanford). New York: John Wiley & Sons, Inc., 1962.
90. ----- . Where Colleges Fail. San Francisco: Jossey-Bass, 1967.
91. Sanford, Nevitt; Webster, H.; Freedman, M. "Impulse Expression as a Variable of Personality." Psychological Monographs No. 11. 1957.
92. Snyder, Benson R. "Adaptation, Education, Emotional Growth." In The College Dropout and the Utilization of Talent. (Edited by L. B. Pervin, L. E. Reik, and W. Dairymple). Princeton, N. J.: Princeton University Press, 1966.
93. Strang, Ruth. Behavior and Background of Students in College and Secondary School. New York: Harper Bros., 1937.
94. Suddarth, Betty M. Factors Influencing the Successful Graduation of Freshmen Who Enroll at Purdue University. Progress Report No. 21. Lafayette, Indiana: Purdue University, April 1957. (Mimeo).
95. Summerskill, J. "Dropouts from College." In The American College. (Edited by Nevitt Sanford). New York: John Wiley & Sons, Inc., 1962. pp. 627-657.
96. Summerskill, J., and Darling, D. C. "Sex Differences in Adjustment to College." Journal of Educational Psychology 46:355-361; 1955.
97. Super, D. E., and Brophy, Dorothy A. "The Role of the Interview in Vocational Diagnosis." Occupations 19:323-327; 1941.
98. Super, D. E., and Crites, J. O. Appraising Vocational Fitness. New York: Harper and Row, 1962.
99. Thistlethwaite, Donald L. "Rival Hypotheses for Explaining the Effects of Different Learning Environments." Journal of Educational Psychology 53:310-315; December 1962.
100. Thomas, Caroline R.; Ross, Donald C.; Freed, Ellen S. An Index of Responses to the Group Rorschach Test. Baltimore: Johns Hopkins Press, 1965.

101. Thompson, Martha. Admission Information as Predictors for Graduation. Unpublished Master's Thesis. New York: Cornell University, 1953.
102. Tillery, Dale. Differential Characteristics of Entering Freshmen at the University of California and Their Peers at California Junior Colleges. Berkeley: University of California, School of Education, 1964.
103. Trent, James W., and Medsker, Leland L. Beyond High School. San Francisco, Calif.: Jossey-Bass, Inc., 1968.
104. Tucker, Sylvia B. College and University Potential of Selected Junior College Students. Doctor's Thesis. Los Angeles: University of California, School of Education, 1964.
105. Warren, J. R. Patterns of College Experience. USOE Cooperative Research Project S-327. Claremont, Calif.: College Student Personnel Institute and Claremont Graduate School and University Center, October 1966.
106. Webster, H. Research Manual: Vassar College Attitude Inventory and Vassar College Preference Test. Poughkeepsie, N. Y.: Mellow Foundation, 1957.
107. ----- . "Some Quantitative Results." Journal of Social Issues 12:29-43; 1956.
108. Weigand, G. Motivational Factors Associated with Success and Failure of Probationary Students. Doctor's Thesis. College Park: University of Maryland, 1951.
109. Wolfle, D. America's Resources of Specialized Talent: A Current Appraisal and a Look Ahead. Report prepared by director, Commission on Human Resources and Advanced Training. New York: Harper, 1954.
110. Wrenn, C. G. The Counselor in a Changing World. Washington, D. C.: American Personnel and Guidance Association, 1962.
111. Yamamoto, Kaoru. The College Student and His Culture; An Analysis. Boston: Houghton-Mifflin, 1968.

09 Mathematics
10 Music

19 Other
20 Undecided

13. Transfer Plans:

- 1 Non-Transfer
- 2 State College, California
- 3 State University, California
- 4 Private College or University, California
- 5 Out of State College or University
- 6 Undecided

14. Are you working for a College Degree?

- 1 Associate in Arts (Junior College Degree)
- 2 Bachelors Degree
- 3 Both Associate and Bachelors
- 4 No

15. Out of school employment per week

- 1 None
- 2 1-10 hours
- 3 10-19 hours
- 4 20-29 hours
- 5 30-39 hours
- 6 40 or more hours

OFFICE USE ONLY

1.	_____ / _____ / _____						
	D	ND		DFP			
2.	_____						
	EOCG						
3.	_____						
	A-F						
4.	_____						
	TI	To	Es	Co	Au	RO	SE
	IE	PI	AL	Am	PO	MF	RB
	OPI						

16. Five years from now I would most like to be:

- 1 a student
- 2 in a Professional Occupation
- 3 in a creative field
- 4 married and raising a family
- 5 in any field in which I can earn money
- 6 don't know

17. I consider the following to be the happiest years of one's life:

- 1 1-4
- 2 5-9
- 3 10-14
- 4 15-19
- 5 20-29
- 6 30-39
- 7 40-49
- 8 50-59
- 9 60 or over

18. What was your high school grade average? Pick the one closest to your average.

- 1 D 2 D+ 3 C 4 C+ 5 B 6 B+ 7 A

19. Were you born in California? 1 yes 2 no

20. How many years have you lived within ten miles of Pierce College?

- 1 less than 1 2 1-5 3 6-10 4 11 or more

21. Number of different schools attended before the 10th grade:

- 1 1 2 2 3 3 4 4 5 5 or more

22. Number of different schools attended from grades 10-12:

- 1 1 2 2 3 3 4 4 5 5 or more

23. For male students only: If you would not be in school now, would you be eligible for the draft:

- 1 yes 2 no

Family Data

24. Father:

- 1 Living at home
- 2 Deceased
- 3 Living away from home

25. Occupation

- 1 Professional
- 2 Semi-professional
- 3 Skilled
- 4 Semi-Skilled
- 5 Unskilled

26. Educational level of father

- 1 Did not complete high school
- 2 High school graduate
- 3 Some college
- 4 College graduate
- 5 Post-graduate work in college
- 6 Don't know

27. Mother:

- 1 Living at home
- 2 Deceased
- 3 Living away from home

28. Occupation

- 1 Housewife only
- 2 Professional
- 3 Semi-professional
- 4 Skilled
- 5 Semi-skilled
- 6 Unskilled

29. Educational level of mother

- 1 Did not complete high school
- 2 High school graduate
- 3 Some college
- 4 College graduate
- 5 Post-graduate work in college
- 6 Don't know

30. Brothers and/or sisters: 1 1 2 2 3 3 4 4 5 5
6 6 or more

31. Are you the eldest? 1 yes 2 no

32. Are you the youngest? 1 yes 2 no

33. Are you in about the middle? 1 yes 2 no

34. I live with: 1 One or both of my parents 2 My husband or wife
3 Friend or friends 4 Alone

APPENDIX B
ADAPTIVE-FLEXIBILITY INVENTORY

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**Form B-2
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DIRECTIONS

This is an exercise to see how different people react to different words.

You will find 180 words listed on the following pages. You are asked to respond to the words by writing down, in the blanks provided, the very first word or thought which enters your mind. Please do not question your own reactions but record your immediate impressions -- whatever they are. If a word doesn't quickly come to your mind, just go on to the next word.

This is not a timed task, however, please try to work as quickly as possible.

A-F WORD ASSOCIATION LIST

1. Cap _____
2. Glass _____
3. Smile _____
4. Style _____
5. Marriage _____
6. Cloud _____
7. Dream _____
8. Scream _____
9. Ambiguous _____
10. Desire _____
11. Liar _____
12. Entertainment _____
13. Enticement _____
14. Fear _____
15. Dear _____
16. Butter _____
17. Fly _____
18. Argue _____
19. Chattel _____
20. Anatomy _____

21. Peak

22. Neck

23. Fog

24. Frog

25. Sports

26. Campus

27. Cheat

28. Choke

29. Please

30. Tease

31. College

32. Fail

33. Satin

34. Sensitive

35. Ink

36. Group

37. Soup

38. Cock

39. Tail

40. Jealous

- 41. Complex

- 42. Conundrum

- 43. Dirt

- 44. Test

- 45. Integration

- 46. Fair

- 47. Anxious

- 48. Wonder

- 49. Full

- 50. Cold

- 51. Mask

- 52. Marble

- 53. Grade

- 54. Devotion

- 55. Hit

- 56. Needle

- 57. Bible

- 58. Mine

- 59. Clean

- 60. Law

- 61. Excitement _____
- 62. Work _____
- 63. Friend _____
- 64. Proselyte _____
- 65. Dance _____
- 66. Fun _____
- 67. Satisfaction _____
- 68. Bomb _____
- 69. Control _____
- 70. Symbol _____
- 71. Date _____
- 72. Late _____
- 73. Open _____
- 74. Abortion _____
- 75. Hammer _____
- 76. Head _____
- 77. Slush _____
- 78. Pest _____
- 79. Soft _____
- 80. Fat _____

81. Fate

82. Laboratory

83. Squeeze

84. Shadow

85. Punch

86. Pinch

87. Sea

88. Tough

89. Drink

90. Sink

91. Dare

92. Moon

93. Noon

94. Problem

95. Future

96. Bed

97. Red

98. Snake

99. Home

100. Blood

- 101. Judge _____
- 102. Tense _____
- 103. Line _____
- 104. Student _____
- 105. Beautiful _____
- 106. Face _____
- 107. Trap _____
- 108. Sap _____
- 109. Press _____
- 110. Flexible _____
- 111. Fight _____
- 112. Tight _____
- 113. Pass _____
- 114. Value _____
- 115. Me _____
- 116. Moiety _____
- 117. You _____
- 118. Attack _____
- 119. Touch _____
- 120. Duck _____



121. Luck

122. Fur

123. Love

124. Blue

125. Splice

126. Rat

127. Bat

128. We

129. Advise

130. Seek

131. Obedience

132. Table

133. Ideal

134. Love

135. Prude

136. Nut

137. Hut

138. Smear

139. Sterile

140. Nearness

- 141. Life

- 142. Blotch

- 143. Crawl

- 144. Win

- 145. Frown

- 146. Trouble

- 147. Wet

- 148. Pet

- 149. Ring

- 150. Virtue

- 151. Arouse

- 152. Study

- 153. Peace

- 154. Sink

- 155. Tomorrow

- 156. Rock

- 157. Sensation

- 158. Rod

- 159. Vice

- 160. Serendipity

161. Set

162. Met

163. Mate

164. Imagination

165. Period

166. Love

167. Soft

168. Career

169. Learn

170. Go

171. Permit

172. Black

173. Lay

174. Door

175. Soar

176. Egg

177. Life

178. Love

179. Time

180. Core
