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EFFECTS OF GROUP COUNSELING UPON THE CAREER ORIENTATIONS
OF PRE COLLEGE SOCIAL DEVELOPMENT STUDENTS AT THE
OHIO STATE UNIVERSITY

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

Rosetta Taylor Moore, B.A., M.ED

The Ohio State University
1979

Reading Committee:
Dr. Robert J. Silverman
Dr. Anthony Riccio
Dr. Walter Hack

Approved By

Advisor
Department of
Education Special Services
I wish to acknowledge the assistance of Professor Robert J. Silverman who in his role as professor and advisor gave me positive criticism and personal support. I also wish to thank Professors Walter Hack and Anthony Riccio, members of the reading committee, and Professor Joseph J. Quaranta for their encouragement and assistance.

I am especially grateful to the students in the Pre College Social Development Program and to Dr. MacArthur Stewart, Associate Dean of Developmental Education, and Dr. William J. Holloway for providing the opportunities for me to do my research, and for assisting me in my personal career development.

To my staunchest friends and critics, Drs. Queen D. Fowler and J. Otis Smith, I extend my deepest thanks for always forcing me to "test my limits."

Finally, I would like to dedicate this dissertation to my parents, Leon and Mable Taylor, and to my daughter, Dana. The former have always encouraged me by their example and through their love to persevere, and the latter has given me the kind of love and understanding that allowed me to be selfish in my pursuit of personal goals.
VITA

ROSETTA TAYLOR MOORE

1560 Beall Avenue, #D8
Wooster, Ohio 44691
(216) 263-1869

Business Address:
Career Planning and Placement Service
Lowry Center
The College of Wooster
Wooster, Ohio 44691
(216) 264-1234; ext. 496, 572

BRIEF STATEMENT OF GOALS

I am interested in a position which affords me the opportunity to use my administrative, counseling and teaching skills. I would particularly like the opportunity to do extensive research on how counseling can make a greater impact on the cognitive components of the University, and I value the chance to use this data in the training of students enrolled in counseling and student personnel curricula, and in programming for special populations.

EDUCATION

Currently enrolled in Ph.D. program in Student Personnel Work. (Degree expected December 1979) The Ohio State University, Columbus, Ohio

M.Ed Education (Guidance and Counseling) Saint Louis University, June 1964, St. Louis, Missouri

B.A. Education, Harris Teachers College, June 1959, St. Louis, Missouri

EMPLOYMENT

ASSOCIATE DEAN OF STUDENTS, The College of Wooster
(A Liberal Arts College), Wooster, Ohio, September 1978 to present

Major Responsibilities:
  . Directing Career Planning and Placement Office for 1,895 students
  . Counseling students with academic, personal, and career concerns
Rosetta Taylor Moore

- Supervising two placement assistants
- Serving on Judicial Board and Academic Standards Committee
- Administering and interpreting Interest and Personality Inventories
- Acting as administrative liaison to black student groups on campus
- Conducting the follow up studies of College of Wooster graduates

Program Coordinator, University College, The Ohio State University, September 1976 to August 1978

Major Responsibilities:
- Supervised the professional activities of nine adviser/counselors and clerical staff in the Developmental Education program
- Directed the coordination of activities between Developmental Education and the Counseling Center, the Residence Life Program, the Financial Aids Office and the Office of Minority Affairs
- Provided leadership for the teaching of University Survey, an orientation to the academic majors at The Ohio State University
- Wrote proposals for the funding of special components of the Developmental Education program such as reading and tutoring
- Acted as Learning Consultant to University College for the purpose of increasing teaching effectiveness among University College instructors
- Assisted the Associate Dean in the administration of Developmental Education on the regional campuses
- Acted as official representative of the Office of Developmental Education when the Associate Dean was unavailable

Coordinator of Counseling, University College, The Ohio State University, September 1975 to September 1976

Major Responsibilities:
- Supervised the professional activities of eight adviser/counselors
- Coordinated the career planning part of the program in cooperation with the Counseling Center
- Taught an University Survey, an orientation to academic majors and careers
- Assisted in the recruitment of minority students
Rosetta Taylor Moore

- Served as liaison to Admissions and the Office of Minority Affairs
- Chaired Search Committee whose mission it was to choose a Coordinator of Black Student Programs
- Involved in the selection of Resident Advisers for all dormitories

Adviser/Counselor, University College, The Ohio State University, September 1974 to September 1975
Major Responsibilities:
- Counseled students about personal and academic concerns
- Assisted them in resolving problems related to financial aid
- Taught a career exploration class
- Administered and interpreted interests inventories

Counselor, Bellvue Community College, Seattle, Washington, September 1969 to September 1971
Major Responsibilities:
- Assisted in Admissions in the recruitment of Minority Students (Blacks, Hispanics and Native Americans)
- Counseled students with personal, academic and career concerns
- Taught Career Exploration class
- Conducted workshops for women on assertiveness and life management
- Administered the GATE (General Aptitude Tests Battery), the Strong Vocational Interest Inventory, the Kuder Preference Test, the Edwards Personal Preference Schedule, and the Study of Values

SECONDARY & ELEMENTARY EDUCATION

Secondary School Counselor, Mifflin High School, Columbus, Ohio, September 1972 to June 1974
Major Responsibilities:
- Counseled college bound seniors
- Assisted administration and faculty in the planning of Career Education programs
- Planned and implemented staff development programs for faculty and administration
- Assisted School Psychologist with emotionally disturbed students
- Administered formal and informal career assessments
Rosetta Taylor Moore

**Used P.E.T. (Parent Effectiveness Training) to assist parents and students experiencing communication problems**

Secondary School Counselor, St. Louis Public Schools, St. Louis, Missouri, September 1964 to June 1969

Major Responsibilities:
- Counseled college bound students
- Liaison to Washington University Upward Bound Program
- Administered aptitude and interest tests
- Taught evening adult education classes (English)

Teacher, St. Louis Public Schools, St. Louis, Missouri, September 1960 to 1964

- Taught eighth grade English and Reading
- Taught Adult Education classes (English)

Teacher, St. Louis Public Schools, St. Louis, Missouri, September 1959 to 1960

- Taught fourth grade (all subjects)

**CONSULTATIONS**

- Educational and Career Consultant, Professional Services Institute (A private clinical consultant firm), Columbus, Ohio, 1976 to present
- Human Relations Consultant to the Columbus Public School's Desegregation Committee, 1971 to 1972
- Consultant to Friends in Action, a volunteer group working with problem youth. Trained group to use reality therapy, Columbus, Ohio, 1971-1972
- Consultant to Learning Skills counselors at Mansfield Reformatory. Trained counselors to administer interests and abilities tests, Mansfield, Ohio, 1971-1972

**PRACTICA/INTERNSHIPS**

- Counseling Internship, Counseling and Consultation Center, The Ohio State University. Trained to administer a counseling program and received training in TA (Transactional Analysis), Rational Emotive Therapy, and in Assertiveness, June 1975 to September 1975
- Student Personnel Practicum, Counseling and Consultation Center, The Ohio State University. Taught an experimental career exploration class using TA as the theoretical framework, September 1974 to January 1975
Rosetta Taylor Moore

- Counseling Internship, The University of Southern California, under supervision of clinical psychologists, administered and interpreted MMPI, Edwards Personality Schedule and the California Mental Maturity Tests; counseled severely disturbed university students, Los Angeles, California, June 1965 to September 1965

SPECIAL PROJECTS

- Midwest Representative, APGA-ANWC (American Personnel Guidance Association-Association for Nonwhite Concerns). Involves keeping counselors and counselor educators abreast of issues impacting upon black students and black educators. Three year appointment, 1979 to 1982
- Selected by executive office of APGA to serve on task force to develop a series of ISSUE papers on the status of Guidance and Counseling in American education, Washington, D. C. September to December 1977

PUBLICATIONS

- Moore, Rosetta T., Lewis, Brenda, and Head, Alfred. Index to Black Newspapers. Bell and Howell, Wooster, Ohio, 2nd Quarter, 1978
- Moore, Rosetta T. "In Pursuit of Excellence," Biashara Newsletter, Publication of Business Administration, The Ohio State University, 3rd Quarter, 1978

RESEARCH

- Professional Black Women, Myths, Realities and Options. Questionnaire and interview data from Black women in Higher Education in the Midwest. April 1978 (To be published)

PRESENTATIONS

- National Association of Women Deans, Administrators and Counselors (NAWDAC) Conference, "Black Women in
Rosetta T. Moore

Higher Education," Detroit, Michigan, April 1973
. American Personnel and Guidance Association National
Counselors as Group Facilitators."
. National Developmental Education Conference. "De­
velopmental Education Programs in the State of Ohio."
November 1978
. Ohio Civil Rights Commission State Conference,
Columbus, Ohio, "A Look at Affirmative Action Programs
in the State of Ohio." March 1975
. San Diego State College Summer Workshop on Third World
Students. San Diego, California, "The Plight of
Minority Students in Predominantly White Colleges."
July 1970

MEMBERSHIPS

. American Personnel Guidance Association (APGA)
. Ohio Personnel Guidance Association (OPGA)
. Association of Nonwhite Concerns (ANWC)
. American College Personnel Association (ACPA)
. American Association for University Professors (AAUP)
. Phi Delta Kappa
. College Placement Council (CPC)
. Midwest College Placement Association (MCPA)
. NAACP
. Alpha Kappa Alpha Sorority (AKA)
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CHAPTER I

Today, The Ohio State University is a complex institution because it is composed of many diverse colleges such as agriculture and the humanities, and students from many racial and cultural backgrounds. The latter was not always the case. Prior to the seventies, there were few black students matriculating in any of the many undergraduate programs offered at the university. After demonstrations and riots on the campus, which were partly outgrowths of black students' dissatisfaction with the numbers of black students enrolled on the undergraduate level, the administration, seeking to increase the numbers, established The Office of Minority Affairs May 25, 1970. In September, the trustees approved the appointment of William J. Holloway as Vice Provost for Minority Affairs. The purpose of the office was to coordinate programs related to minority matters throughout the university. Additional functions were 1) to supplement activities in the recruitment and retention of minority students (blacks, Hispanics, Appalachian whites, and Native Americans) at Ohio State, and 2) to develop and evaluate programs that would enhance the students chances of succeeding at the university.

To accomplish the two tasks, the Vice Provost developed a staff that included a coordinator for recruitment, a
director of financial aids and a director of research, pro-
gram development and evaluation. He also recommended the
establishment of a program of supportive services, such as
academic advising, personal counseling, and tutorial assist-
ance in University College, the port of entry for all stu-
dents new to The Ohio State University. This program was
instituted and became the Office of Developmental Education.
Initially there were 112 minority students recruited in 1970;
those students were given financial assistance based on their
needs, and they entered Developmental Education in University
College. Ninety-three (93) of the students successfully com-
pleted their first year, and returned for the second year.
Fifty-seven (57) of the students completed their first two
years in University College and transferred to a degree
granting college.* Almost one half of the minority students
who entered the university in 1970 successfully completed
two years of college work, and were able to transfer to a
college from which they could obtain a degree, although they
had academic deficits such as low ACT scores and minimum
exposure to mathematics and natural science courses. It is
difficult to determine why but one could speculate that it
was due to one or more of the following factors:

*University College is the college of enrollment only; students must complete basic requirements and transfer to a
college such as Engineering or Arts and Sciences when they
have completed 90 hours.
(1) an advisee-advisor ratio of 30-1

(2) individual tutoring

(3) the majors chosen by students were primarily Education, Social Work, and Arts and Sciences

(4) grade inflation

(5) politics of the times

At any rate, since 1974, the advisee-advisor ratio has risen to about 150 to 1, group tutoring has replaced individual tutoring, and students are choosing majors in areas requiring strong mathematics and science backgrounds. These factors seem to have resulted in a much smaller percentage enrolling in a degree granting college.

In 1971, the Office of Minority Affairs recruited approximately 400 students; each year, subsequently, that number rose slightly. By 1974, about 500 students were recruited; those students have had more difficulty completing the first two years of basic requirements in University College, apparently because they are choosing majors requiring advanced mathematics and natural sciences.

Students in Developmental Education must make certain important decisions and meet specific academic prerequisites while enrolled in University College. More specifically, the students must 1) decide upon an academic major and 2) complete the
prerequisites for that major by the time they have completed ninety quarter hours of course work. Students who successfully complete the above requirements may transfer to a degree granting college which is compatible with their academic major. Those who do not transfer after earning 90 hours face dismissal.

An additional problem even faces those who are able to meet the requirements of a major: many colleges such as the health professions have "selective admissions." Unless one has a competitive grade point average (3.0 and above), one is not likely to be admitted into medicine, pharmacy, veterinary medicine, the allied medical areas or nursing. Consequently, many of the students are dismissed or withdraw at the end of two years, because they have not completed the requirements for a major. The largest proportion of these students choosing unachievable majors are those selecting business administration, engineering, pharmacy, nursing, dentistry, and allied medicine, all requiring mathematics and/or science backgrounds. (Table 1)

The majors are not realistic for the majority of Developmental Education students who elect them because (1) the students have had little or no experience in college preparatory mathematics and the natural sciences; (2) their ACT mathematics and science scores are extremely low; (3) they score at the lowest level on the university's mathematics placement
<table>
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<tr>
<th>Requirement</th>
<th>Academic Majors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two or more years college level mathematics and</td>
<td>pharmacy, dentistry, veterinary medicine, engineering</td>
</tr>
<tr>
<td>science</td>
<td></td>
</tr>
<tr>
<td>Two or more years of college level science</td>
<td>medicine, allied medicine, optometry, agriculture,</td>
</tr>
<tr>
<td></td>
<td>nursing, natural resources</td>
</tr>
<tr>
<td>Two or more years of college level mathematics</td>
<td>business administration, architecture</td>
</tr>
</tbody>
</table>
test, and they must complete three quarters of remedial mathematics before they can take the six quarters of mathematics and/or science required to transfer to a degree granting college; and (4) additionally, their personal values are not congruent with the values of those who are successful in business administration, engineering and health curricula as measured by the Allport-Vernon-Lindzey Study of Values, an instrument that has been used in many studies to validate the assumption that congruence between values and academic major or vocation is related to achievement in college.

To address this problem, the Office of Minority Affairs instituted the Pre-College Social Development Program in 1974 (Appendix D); the purpose of the program is to give 100 minority high school graduates with severe academic deficits, particularly in mathematics and the sciences who plan to matriculate at The Ohio State University an intensive orientation to the university six weeks prior to their entrance. The purpose of this orientation is to give the students a head start so that they will be acclimated to the university and its requirements by the time they enter. Pre-College Social Development Students like most developmental education students tend to choose business administration, the health sciences and engineering majors.

Although there is no academic component to the Pre-College Social Development Program, it is assumed that activities devoted to career development, assertiveness
training, management of time and money and introduction to residence hall living will facilitate the students' academic adjustment. The aforementioned activities are conducted by university staff and peer counselors trained by the Counseling and Consultation Service.

The career development component during the past two summers has been oriented to matching Pre-College Social Development (PCSD) students' interests with a career using formal assessment such as Holland's Self Directed Search and the Kuder Preference Record. The author of this study was given permission for the summer 1976 session to conduct the career development unit as a research project, with students being informed in advance. Most seemed eager to participate; those who voiced some reluctance to participate were told they could be excused from this unit but they chose to remain. More than 73% of the students participating in the research ranked in the top two thirds of their class (Table 2), but their science and mathematics ACT composites were low compared with all other OSU students. (Table 3)

STATEMENT OF THE PROBLEM

Pre-College Social Development students come to the university and enter the Developmental Education program with severe academic deficits in mathematics and the sciences. When the Developmental Education program began individual tutoring was available to students, and the advisor-advisee
TABLE 2
RANK IN HIGH SCHOOL CLASS OF PCSD STUDENTS
Percentages

<table>
<thead>
<tr>
<th>Rank</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Third</td>
<td>19.85</td>
<td>21.56</td>
</tr>
<tr>
<td>Middle Third</td>
<td>53.66</td>
<td>43.29</td>
</tr>
<tr>
<td>Lower Third</td>
<td>26.22</td>
<td>25.20</td>
</tr>
<tr>
<td>Don't Know</td>
<td>.27</td>
<td>4.95</td>
</tr>
<tr>
<td>Omitted</td>
<td></td>
<td>5.00</td>
</tr>
<tr>
<td>Total Per Cent</td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Note: 73.5% of the women and 64.8% of the men ranked in the top two-thirds of their graduating class while their ACT scores place them in the lower percentile of students entering the university. (Table 3) This is not true of most students entering The Ohio State University. There is usually a positive correlation between ACT scores and high school rank.
<table>
<thead>
<tr>
<th>Subtest</th>
<th>PCSD N=100</th>
<th>OSU N=8,179</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>16.2</td>
<td>19.1</td>
</tr>
<tr>
<td>Percentile</td>
<td>17</td>
<td>35</td>
</tr>
<tr>
<td>Mathematics</td>
<td>11.7</td>
<td>21.4</td>
</tr>
<tr>
<td>Percentile</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>Social Studies</td>
<td>17.6</td>
<td>20.6</td>
</tr>
<tr>
<td>Percentile</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Natural Science</td>
<td>9.2</td>
<td>22.4</td>
</tr>
<tr>
<td>Percentile</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>Composite</td>
<td>13.6</td>
<td>21.0</td>
</tr>
<tr>
<td>Percentile</td>
<td>5</td>
<td>36</td>
</tr>
</tbody>
</table>

Note: PCSD students' Mean ACT scores were significantly lower than all OSU students' scores, particularly in mathematics and the sciences.
ratio was no more than 30 to 1; at that time a greater proportion of students overcame their deficits and were able to enter the degree granting college of their original choice. Budgetary cuts and increased numbers eliminated individual tutoring and increased the advisor-advisee ratio to approximately 150 to 1. Given these conditions it cannot be assumed that students with severe mathematics and/or natural science deficits will be helped significantly by the programs in Developmental Education. Incidentally, this is not true of those students who have reading and writing deficits, because there are many resources within the university to help them overcome these limitations.

The problem then becomes

How can Pre-College Social Development Students be influenced to change or expand their academic major choices so that those choices are more compatible with the students' previous academic experiences?

The specific objectives of the study are both action and research oriented. They are to (1) change the first choice majors of students with severe mathematics and/or science deficiencies to majors not requiring two or more years of mathematics and/or natural sciences, and (2) to expand the major choices of students so that they consider
a nonmathematics or nonnatural science major as a second choice. It is important also that students have an achievable second choice of major so that they can at least minor in the courses that are prerequisites for that major.

The research oriented objective relates to the values of the students. There is evidence that congruence between values and academic major or career is related to achievement in college. Determining if there are differences between the values of PCSD students and the norm group in the *Study of Values* might yield valuable information. If the values of PCSD students are incongruent with the values of the norm group, we may be able to conclude incongruence because of the values of PCSD students and their choice of majors. This information could be used as a counseling tool to assist students in exploring the relationship between their values and the majors they choose.

The research objective then is to determine if there are differences between the values of PCSD students and the norm group in the 1960 *Study of Values*. (Appendix A)

**HYPOTHESIS**

Research

There is no difference between the values of the PCSD students and the values of the norm group in the *Study of Values*. 
Action

There will be no difference between the experimental and control groups in changing their academic majors. There will be no difference between the experimental and control groups in expanding their academic majors.

DEFINITION OF TERMS

The following terms will be used throughout the study. They may have other connotations or definitions, but for this study they are defined thus:

Career orientation - choice of an academic major or occupational field

Minority students - Black, Appalachian White, Hispanic, Asian American or Native American

PCSD - Pre-College Social Development project

Change of Major - changing to a major requiring less than two years of mathematics and/or science

Expansion of Major - considering as a second choice a major not requiring two or more years of mathematics and/or natural science

Value - standard for decision making; component of personality

Counselor - researcher and author of this study

Peer Counselor - an upper division student trained by a certified or licensed counselor or psychologist
University College Survey Class - the orientation to the university class in which all students new to the university must enroll.

Significance of the Problem

Open admissions is culminating in the "revolving door" phenomenon for many minority students because sufficient remediation is not being provided at the university level for students who are seriously underprepared for college. On this point, Théodore Newcomb (1972) in Open Admissions and Equal Access says:

To put it starkly, I think our institutions of higher education should either forget about open admissions or prepare to change themselves in fairly radical ways. Let me remind you that no selective college or university has so far really succeeded in incorporating any considerable body of ghetto students or others not previously considered admissible into their present systems in spite of some heroic attempts. Some institutions that have tried it have learned a lot about their mistakes and are still trying. At any rate, my argument is that if you're going to do it at all, you might as well be prepared for a lot of change.

The nature of the university makes it unlikely that it will change its standards or curricula to meet the needs of students with severe academic deficits. Many university educators argue that students who have severe academic deficiencies, and who are not traditionally prepared should not come to higher education institutions. They indicate these students should go to vocational schools and "take up a trade." This is not always a viable option because (1) many
of the vocational programs require strong mathematics and science backgrounds and (2) employment barriers often exist when minority persons have completed vocational programs.

Other educators argue that massive remediation ought to take place at the secondary level, but what is to be done with the generation of students currently matriculating in colleges and universities, and their counterparts in secondary schools where little or no remediation is offered?

Given the reluctance of the degree granting colleges at the university to accept students who have not completed traditional requirements, and with no extra time allotted to students to complete these requirements, minorities are unlikely to succeed in certain areas at The Ohio State University. They may succeed if they select achievable majors upon entering the university, or shortly after.

It can be argued that directing students away from scientific, management and highly technical occupational fields to those that may be overcrowded is decreasing those students' chances of securing professional positions. That argument is valid if the primary purpose of a college education is to prepare one for a job. If higher education, however, is viewed in the larger context as a vehicle for (1) helping the student to develop communication skills and a mode of thinking that will enable him/her to be a creative problem solver, (2) improving one's interpersonal relationships,
(3) developing an appreciation for ideas and the arts, and
(4) learning to be a fully functioning citizen in his/her
local and world community, then earning a degree in the arts,
social sciences or the humanities seems highly appropriate.

Limitations of the Study

The limitations of this study are that (1) only a sample
of minority students with severe deficits in mathematics and
the natural sciences are included in the research; therefore,
it is not possible to generalize the findings to all Develop­
mental Education students or to all minority students at The
Ohio State University, (2) the complex reasons for the stu­
dents' poor preparation in mathematics and science are not
adequately addressed in this study, and (3) there is no
attempt to identify or explain the reasons those students who
despite low mathematics and science indices will succeed in
their chosen major.

Organization of the Remainder of Dissertation

The material to this point comprises Chapter I of this
study; the remaining chapters are Chapter II—Review of
Related Research; Chapter III—Procedures; Chapter IV—
Findings and Discussion; Chapter V—Conclusions and
Implications.
CHAPTER II

REVIEW OF RELATED RESEARCH

The research reviewed in this study pertains to (1) career development theories, (2) values and career development, (3) values and choice of major, and (4) other influences upon career development and choice of major.

Career Development Theories

Most of the major theories of career development fall into two categories: (1) those theories which emphasize the processes at work during the time of career choice, and (2) those theories which highlight the lifelong nature of a cumulative career choice process. From these theories one receives different answers to what the career choice process is.

Roe (1964) and Holland (1969) conceptualize the career choice process primarily as an event which happens during late adolescence. Their theories are concerned primarily with predicting the direction of the career choice through an analysis of relationships among a variety of factors. In specifying the factors and conditions at work in the career choice process, Roe uses an analysis of psychological needs and personality traits. She asserts that vocational direction
is related to personality development and that this development results from early parent-child interaction. For example, an individual raised in a warm and accepting family climate is attracted toward occupational fields in which contact with people is frequent since his or her need for affection and acceptance is high. Conversely, the individual who is reared by cold and rejecting parents develops the propensity for avoiding people and chooses work in which his contacts with people are minimal.

Holland's theory (1969) is similar to Roe's in its emphasis upon the development of a personality typology by which occupational choices can be predicted. Roe and Holland differ in that he considers personality style rather than psychological need structure to be the major determinant of vocational decision making and development. Holland says a person's behavior is determined by an interaction between his personality and the characteristics of his environment. From this interaction develops a personal style for dealing with one's environment. Such a personal style or orientation, as Holland calls it, can be classified in terms of six personality types: Realistic, Intellectual, Social, Conventional, Enterprising, and Artistic. (Table 4)

Realistic types are oriented toward concrete rather than abstract problem situations. They usually avoid tasks involving verbal skills. Examples are machine operators.
<table>
<thead>
<tr>
<th>Type</th>
<th>Occupational Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Realistic</td>
<td>Values concrete things, likes &quot;hands on&quot; experiences. Craftsman, Farmer</td>
</tr>
<tr>
<td>Investigative</td>
<td>Values scientific approach, perceives self as scholarly. Scientist, Physician</td>
</tr>
<tr>
<td>Artistic</td>
<td>Values esthetic qualities, perceives self as expressive, nonconforming. Writer, Actor</td>
</tr>
<tr>
<td>Social</td>
<td>Values social and ethical activities, uses social competencies to solve problems at work. Teacher, Counselor, Minister</td>
</tr>
<tr>
<td>Enterprising</td>
<td>Values political and economic achievement, perceives self as aggressive, confident. Banker, Lawyer</td>
</tr>
<tr>
<td>Conventional</td>
<td>Values business and economic achievement, perceives self as conforming, orderly. Secretary, Bookkeeper</td>
</tr>
</tbody>
</table>
and farmers. Intellectual (currently called "Investigative") types are oriented toward abstract problem situations and "knowledge for knowledge's sake." They too tend to avoid close interpersonal contact—typical examples are the mathematician and physician. The Social types seek close personal relationships and are adept in interpersonal encounters. They tend to avoid situations that require abstract thinking and abstract problem solving—typical examples are counselors and teachers. Conventional types tend to be concerned with power and status. This type prefers structure and order. They have great concern for rules and regulations—typical examples are cashiers and bookkeepers. Enterprising types work hard to acquire power and status. They are usually verbally skilled and use these skills for persuasive purposes—typical examples are car salespersons and politicians. Artistic types are oriented toward self-expression, usually through the media. They dislike structure, show emotions easily, and they tend to be introspective—typical examples are the novelist and musician.

Holland also calls these types environments and he says that each environment is dominated by a given type of personality, and each environment is typified by physical settings posing special problems and stresses. Additionally Holland (1973) says a person's resemblances to the types or environments should predict a large portion of his behavior.
The logical consequences of these predictions are hypotheses about behavior. A few of the vocational behavior and educational behavior hypotheses are:

1. A person's personality type determines the primary direction of his vocational choice. For example, a person with an enterprising personality type will choose an enterprising occupation.

2. Other things being equal (SES, intelligence, and so on), high aspirations go with the following personality pattern order: investigative, social, artistic, conventional, enterprising and realistic.

The second theory to be discussed here, the Trait-and-Factor Theory, is based upon the assumption that the matching of an individual's abilities and interests with occupational opportunities can be accomplished. Essentially, the main approach is matching objective data about the individual with objective data about the requirements of the job. From this viewpoint, relationships between specific variables and occupational choice have been examined.

Zytowski (1970) found that in most studies relating intelligence to specific occupational categories, researchers have found that there is no differential distribution of general ability across occupations. Tyler and Ellis (1968) noted that unlike earlier assumptions that occupational
preferences were formed by the development of interests, it now appears that preferences are formed just as much by the development of dislikes as by likes.

The trait-and-factor theory of career counseling would emphasize arranging opportunities for the client to explore a variety of different occupational positions. A sequence of several techniques would be used (Zytowski). First, the counselor would introduce procedures designed to enable the client to do a self analysis. A battery of tests would be administered for this purpose. Second, the counselor would attempt to clarify various career patterns. Procedures such as reading occupational literature, visiting plants, offices and professional establishments, and hearing discussions and lectures on careers would be utilized. Third, information about the client would be matched with career information and a career direction would be selected. Career guidance in the trait-and-factor approach is essentially information collecting and giving rather than helping clients clarify goals or the self concept.

Ginzberg and his associates (1951) were the first to publish a theory which focused on the developmental nature of the career choice process. After studying the types of occupational choices made by middle and upper income male high school and college students, they concluded that occupational choice was a developmental process occurring over
a period of six to ten years (or more) and characterized by major distinctions in the occupational behavior of different age levels. Originally Ginzberg viewed this developmental process as irreversible, meaning that choices could not be repeated and that each choice would limit subsequent choices. However, as Ginzberg and his associates continued to study certain groups such as women and blacks, they made refinements in their theories. They now hold that early choices do have an effect on subsequent choices, but that these choices are not irreversible. In fact, Kraus (1972) now believes the career choice process "remains open as long as one makes a definitive occupational commitment."

Super and others (1963) attempted to bring both a developmental and a phenomenological perspective to career development theory. They combined the concept of individual differences, occupational ability patterns, identification with role models, and differential and developmental psychology. The purpose was to formulate a theory which would "explain the process through which interest, capacities, values and opportunities are compromised" (Super, 1957). Super used a longitudinal research project, the Career Pattern Study, which he undertook with others in 1951. The purposes of the study were to (1) develop methods for monitoring the career progress of individuals, (2) describe the nature of vocational exploration which leads to the making of prevocational and
vocational choices, and (3) analyze the relationship between life stages and the behaviors manifested at each stage in dealing with particular vocational tasks.

The central and crucial part of Super's theory is the relevance he ascribes to the self concept. Essentially, Super seeks to explain vocational development by describing how the self concept is formed and implemented occupationally (Osipow, 1968). In doing so, Super corroborated much of Ginzberg's approach while expanding upon it. Probably more than any of the previous theories described, Super's theory seems adaptable for use in both programmatic and individual intervention efforts (Dunphy, 1973).

The conceptual theory of occupational choice held by Blau, Gustad, Jessor, Parnes and Wilcox (1956) is based upon the belief that one must take a two pronged approach when describing and explaining the career development process. This approach involves looking at the vocational choice chain, with its individual characteristics such as biological and psychological factors, as well as the occupation selection chain which reflects the economic opportunities open to the individual (Dunphy, 1973). The sociology of the work setting and the dynamics of the work place are examined closely. Such factors as the interaction of persons in a work setting and the requirements for psychological distancing required to enhance job mobility are all significant areas of infor-
formation which young people need in order to develop skills for coping with the world of work (Dunphy, 1973).

The sociologically-based theories of career development proposed by Blau (1956) and his associates provide major sources of information for the identification of skills and information needed to cope with and adapt to a career pattern (Amatea, 1971).

The theories presented here have been used to illustrate the broad array of different approaches they represent for career counseling. The theories have been tested by many researchers in the area of vocational behavior, and some of their findings are reported below.

Support for the personality theory of career development comes from Super (1963) who finds that students in different programs of study such as art and dental hygiene differ significantly in their pattern of needs. Walsh (1966) also found that individuals will select as liked or disliked the specific duties of any job which are consistent or inconsistent, respectively with their psychological needs. Additionally, Super (1974) has proposed that "work satisfactions and life satisfactions depend upon the extent to which the individual finds adequate outlets for his abilities, interests, personality traits, and values."

Holland also theorizes that if a person's occupation is congruent with his personality, the individual is more likely
to have a favorable career. This theory was tested by Walsh and Lewis (1972) who found that the choice of major was more stable for male students who had chosen majors congruent with their personalities. They did not find a relationship between congruence of personality with occupational choice among their female subjects. Holland and Nichols (1964) and Holland and Whitney (1968) found, however, that students (men and women) who change majors and/or career plans appear to do so in a predictable, not random, fashion. Students tend to leave a major when their personality is not typical for people in that field.

More recently Villwock (1975) tested the validity of Holland's notion that congruence of personality with chosen vocation, differentiation of personality and internal consistency of personality are predictors of vocational and educational behavior. To test this contention, it was hypothesized that the stability of a student's college major would be directly related to: (a) the degree of congruence of major with personality, (b) the level of differentiation of personality, and (c) the degree of internal consistency of personality. It was also hypothesized that prediction of stability of choice could be improved by combining the independent variables—congruence, differentiation and consistency—in a multiple relationship. It was further hypothesized that the relative importance of these variables in
predicting stability are in the order given, i.e., congruence, first; differentiation, second; and consistency, third. This order of importance has been suggested by Holland. In order to ascertain if the validity of Holland's theory is related to either sex or age, it was hypothesized that there is a relationship between stability of choice and both age and sex.

The subjects were 167 University of Houston students who were given the Self Directed Search (Holland, 1970) and a questionnaire designed to measure stability of academic major choice. Measures derived from these instruments, for each subject, included a three letter code descriptive of personality type and the level of differentiation, consistency, and stability of choice. Each subject's personality type was compared with the three letter classification of the college code chosen by that student. This comparison resulted in a measure of congruence for each student.

A significant positive relationship was found between congruence and stability and between consistency and stability. No significant relationship was found between differentiation of personality and stability of choice.

Multiple regression analysis was used to test the efficiency of predicting stability from congruence, differentiation, and consistency. When combined, all three constructs predict stability of choice. However, the efficiency of prediction is not improved by adding differentiation or
consistency to congruence. As hypothesized, congruence is the most important predictor. No significant relationship was found between stability and either sex or age.

Roe (1964) hypothesized that there is a relation between the nature of early child-parent interactions and eventual occupational choice. The results of this study were negative. This has been the case in most studies of this kind.

Roe (1964) reports on others who checked her hypothesis by using social work and occupational therapy as person-oriented occupations and dietetics and laboratory technicians as nonperson-oriented occupations. The subjects were women working in a Veterans Administration hospital and the instruments used were the Allport-Vernon-Lindzey Study of Values and the Fels Parent Behavior Rating Scales, the latter designed to measure acceptance, direction of criticism, child centeredness, rapport, and affectionateness of parents. The hypothesis that the person-oriented group would manifest greater altruistic love of people was sustained. It was further hypothesized that the person-oriented group would recall their early childhood environments as having been warmer than those of nonperson-oriented groups. This was not sustained. The social workers felt less accepted by their parents than did either of the nonperson-oriented groups.

Tiedeman (1958) and his colleagues (Tiedeman, O'Hara 1963; Tiedeman, Dudley 1967) have speculated about career
development. Their wide ranging assumptions include:

1. The evolution of vocational identity is dependent upon early childhood experiences with the family unit, the psychological crisis—as defined in terms of Erikson's (1963) constructs—encountered at various developmental levels, and the agreement between the society's meaning system and the individual's meaning system.

2. The intimacy of self concept and career concept makes it necessary to consider both when formulating vocational roles.

3. The concept of vocational maturity is amenable to definition at different ages. In this regard, it is interesting to reflect on Osipow's (1968) observation about Super's work. Osipow says:

   "Of all the theorists, only Super has written extensively about how career development can be corrected once it has gone astray or how it might be facilitated in the normally functioning person individual . . . . The vocational development tasks enumerated by Super point the way to programmatic career development. According to Super, specific programs for adolescents should expose them to the necessary information for making decisions. All through the life cycles, programs may be developed to allow people to make decisions on a sounder basis."

Theories which have a developmental emphasis are usually the most comprehensive, the most concerned with longitudinal expression of vocational behavior, and more inclined to focus on the individual self concept than are some of the other theoretical perspectives on career development (Super, 1963).
Values and Career Development

Work has meant many things to people throughout history. It has served as an "expiation of sin," as a path to salvation, and as a means of self-actualization. Mills and Gurko (Kraus, 1972) maintain that the chief meaning of work for the modern white-collar person lies in income, status, and power. Gurko says:

"College students wondering whether to major in history or English literature are often dissuaded by the question: What can you do with it when you get out? Does anyone want to write? It makes sense only if he aims at the jackpot. Would he enjoy teaching? There's more money in advertising. Careers, and indeed life experiences, are selected not on the basis of their personal satisfaction or social usefulness, but strictly in cash register terms."

Actually, this "what's in it for me" attitude does not appear to be nearly so prevalent as some observers (Kraus, 1972) report. Members of a nation-wide cross-section of college students were presented with a list of occupational values and were told to "consider to what extent a job or career would have to satisfy each of these requirements before you could consider them ideal." They were told to rank these values as high, medium, or low in importance, and then to indicate the relative importance of those values ranked high.

The findings suggested that students view work as more than simply a means of making money; indeed, the range of values which they hope to satisfy in their occupation is very wide. Self-fulfillment, interpersonal satisfaction and
security receive the greatest emphasis. (Of those ranking various values, 27% considered "an opportunity to use my special abilities and aptitudes" most important and 10% chose "permit me to be creative and original.") Nearly three-eights of the students placed the greatest stress on the use of their innate or acquired potentialities. In addition, a sixth stressed the importance of interpersonal satisfactions—seven per cent choosing "give me an opportunity to work with people rather than things." Although security was of great importance to students (24 per cent), a relatively small proportion (10 per cent) chose "provide me with the chance to earn a great deal of money."

Dunphy (1973) supports the position that material values are not always the only or even the most important of the values people really seek through work. The existence of psycho-physical problems among highly paid executives indicate that material values are not as important to these executives as service or humanitarian values and self satisfaction. Dunphy (1973) notes the percentage of people who compulsively ignore both salary and status and seek jobs and careers which can be defended only by a humanitarian or a self satisfaction motive. At every level one can find persons who made great strides in knowledge, technology and even administration. These people theorize new theories, find new medicines, climb mountains "because they are there." They
seek their own value—the value of knowing they have done something no one before them did. (Dunphy, 1973)

A new breed of Americans, born out of the social movements of the '60's and grown into a majority in the '70's, holds a set of values so different from the traditional outlook that the character of career development in the '80's and beyond will be markedly different (Yankelovich, 1978). The most striking manifestations of the new values are (1) the increasing importance of leisure, (2) the symbolic significance of the paid job, and (3) the insistence that jobs become less depersonalized (Yankelovich, 1978). For the new breed, family and work have grown less important and leisure more important. While leisure grows more important for men in the pursuit of self fulfillment, for the new breed woman, the symbolic significance of a paid job has intensified. More complex and intangible is the new breed's refusal to subordinate their personalities to the work role (Yankelovich, 1978).

No longer are people comfortable identifying themselves in terms of their occupations. In the new value system the individual says in effect "I am more than the occupational role that I have; I am myself." When Yankelovich asked people in his survey which aspects of their work are becoming more important to them, they stress, above all else, "being recognized as an individual person." They also stress the oppor-
tunity to be with pleasant people with whom I like to work, this is more important than the work itself (Yankelovich, 1978).

Carney (1975) in exploring the psychological dimensions of career development speaks of the "need to make life-career commitments on the basis of a self-consistent value system." He believes that any career development program should have a strong values clarification emphasis.

The values clarification approach has been stimulated by William Perry's research on Harvard undergraduates. Perry described four stages of intellectual and ethical development during the college years which may undergird student attitudes toward learning, working and living. These stages are dualistic, multiplistic, relativistic, and committed with reflection. The dualistic stage is characterized by making decisions and commitments on absolute or "either-or" terms. The "rightness" of a decision is based on external "truth" and authority. Students at this stage would believe that "there is one career for me" (Carney, 1975). The multiplistic stage would involve students entertaining the notion that there may be alternative approaches to a solution, but they would still rely on universally applied external standards. Students at this level would seek a test to "tell them what career to choose" (Carney, 1975). The relativistic stage is characterized by a "do your own thing" philosophy. Interest
and aptitude tests would not be uncritically accepted; nor would other forms of external authority (Carney, 1975). The final stage, committed with reflection, is marked by commitments made on the basis of internally derived criteria rather than external authority. Here the individual feels free to move in growth producing ways even though the risks are great. This is the type of personal and intellectual flexibility that allows an individual to move both vertically and horizontally throughout one's career (Carney, 1975).

It has not been validated that Perry's schema fits college students' career decision making. If it does Carney (1975) says there may need to be a shift in thinking about career selection leading to a similar shift in thought about other life decisions.

Feldman and Newcomb (1970) propose that one of the indicators of students' values is the attributes they consider important to a job or career. The opportunity to use one's abilities ranks high for students throughout their college experience. Other important attributes are (1) the job being intrinsically satisfying, (2) the opportunity to be creative and original in the job, (3) the job providing a stable and secure future, (4) wanting the job to offer the opportunity to earn a great deal of money, and (5) the job providing social status and prestige. The attribute, the opportunity to be helpful to others through the job, ranks
high with freshmen but decreases in importance as students move through college. By the time they are seniors the percentage of endorsement for the attribute is considerably lower. (Feldman and Newcomb, 1970)

Study of Values

Values and Choice of Major

No discussion of values and choice of major and career development is complete without looking closely at the instrument used most often in any values research, Allport-Vernon-Lindzey Study of Values. The instrument measures the relative importance of six types of values originally suggested by Spranger (1928). The six values are (1) Theoretical, (2) Economic, (3) Aesthetic, (4) Social, (5) Political, and (6) Spiritual. (For a detailed description see Appendix A.) The Study of Values measures the relative importance of the values to the individual rather than "absolute" importance of each value. For this reason, it is impossible to score highly on all six values; hence a preference for certain values must always be at the expense of the other values. (Feldman and Newcomb, 1970) Most of the studies of change on the Study of Values are longitudinal in design. The strongest and most consistent changes across the samples occur on the religious and aesthetic scales. Without exception, aesthetic values are of higher relative importance to
seniors than to freshmen, and religious values are of lower importance to seniors than to freshmen. These differences are usually statistically significant. (Feldman and Newcomb, 1970) Incidentally, in the majority of studies, freshmen score highest on the religious value.

Overall mean changes may also obscure the amount and direction of the average change of sub-groups. Table 6 based on longitudinal data gathered by Huntley (1965) from 1027 male students at Union College presents the direction and statistical significance of the mean changes of all students in nine major fields, as well as those in each major field of study presented separately. The data shows that while only three of the values show significant differences for all 1027 students, one to three major groups have changed significantly in each of the three other values. Table 6 also reflects the also universal finding of change in two of the six values, religious and aesthetic. The relative importance of the religious value decreases and that of the aesthetic value increases. For the other four values, theoretical, economic, social and political, there are clear inconsistencies in the direction and significance of change of students in the curricular groups. (Feldman and Newcomb, 1970)

By the senior year, economic values are rated lower than in the freshman year, and the relative importance of social values often increases slightly from freshman to senior year,
<table>
<thead>
<tr>
<th>Major Field</th>
<th>Theoretical</th>
<th>Economic</th>
<th>Aesthetic</th>
<th>Social</th>
<th>Political</th>
<th>Religious</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanities (N = 65)</td>
<td>L*</td>
<td>L*</td>
<td>H*</td>
<td>L</td>
<td>H*</td>
<td>L*</td>
</tr>
<tr>
<td>Social Sciences (N = 296)</td>
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<td>H</td>
<td>L*</td>
</tr>
<tr>
<td>Science (N = 124)</td>
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<td>L</td>
<td>H*</td>
<td>L*</td>
<td>H</td>
<td>L*</td>
</tr>
<tr>
<td>Pre-Medical (Science) (N = 136)</td>
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<td>L*</td>
<td>H*</td>
<td>L</td>
<td>L</td>
<td>L*</td>
</tr>
<tr>
<td>Chemistry (N = 26)</td>
<td>H</td>
<td>L*</td>
<td>H*</td>
<td>L</td>
<td>L</td>
<td>L*</td>
</tr>
<tr>
<td>Physics (N = 41)</td>
<td>H</td>
<td>L*</td>
<td>H*</td>
<td>L</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td>Industrial Administration (N = 55)</td>
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<td>H*</td>
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<tr>
<td>Overall Change</td>
<td>H</td>
<td>L*</td>
<td>H*</td>
<td>L</td>
<td>H</td>
<td>L</td>
</tr>
</tbody>
</table>

Note:  
L = Seniors score lower than they did as Freshmen  
H = Seniors score higher than they did as Freshmen  
* = Change is statistically significant
but as with the results on the economic values, the results are insignificant statistically. Freshmen-senior differences on the theoretical and political values are not only inconsistent across samples, but are almost never statistically significant. (Rosenberg, 1957; Jacob, 1957; Newcomb, Turner, Converse, 1965)

Feldman and Newcomb (1970) make the point repeatedly that average change, the difference between mean scores of two class levels, obscures both the amount and direction of individual change. Data gathered by Miller (1959) provides an example. She randomly selected a small group of freshmen to study over a four year period. For the twelve students given the Study of Values, the freshmen received average scores of 41.75 and the seniors 41.57 on the scale measuring the relative importance of religious values. The small and statistically insignificant decrease of .18 obscures the amount and direction of change. The individual changes producing the average change were as follows, listed from largest individual decrease to largest individual increase: -19, -16, -14, -12, -2, +1, +3, +7, +11, +11, +12, +16; these individual changes in opposite direction are cancelled out in the average scores (Feldman and Newcomb, 1970).

Apparently some academic situations can cause a change in value patterns. A study by Polsky (1963) at New York University with 423 students and 51 faculty members in the
departments of early childhood, elementary and secondary education demonstrated that students' value patterns become more like the values of their faculty as they progressed through their professional preparation programs.

Rebstock (1967) illustrated, in a study done with 26 students, that the political category of the SVL (i.e., valuing personal power) showed some reduction after students were exposed to a technique called "Flanders Interaction Analysis." This technique trained the students to become more aware of their interactions with the students in their classrooms.

Other studies reporting change in relative importance of two major value orientations using instruments—Prince's Differential Values Inventory—are Spindler (1955) who dichotomizes values into two major types—traditional and emergent. According to his definition, traditional values are those that emphasize Puritan morality, the work-success ethic, individualism and future time orientation. Emergent values emphasize sociability, relativistic moral attitudes, conformity and present time orientation. In a longitudinal comparison of seniors and freshmen at Michigan State University (Lehmann, Dressell, 1962) it was found that both women and men became significantly less oriented toward traditional values and more oriented toward emergent values. Similarly, Vreeland (1963) found a "turnover" toward emergent values...
between the freshmen and junior years and Krick (1963) cross sectionally comparing seniors and freshmen in a small church related liberal arts college found that seniors scored lower on traditional value orientations. This finding coincides with many longitudinal study results on freshmen to senior changes.

The relationship of values to choice of major has been studied by many researchers, yet it is difficult to make meaningful interpretations of the major field differences with respect to values. Unless background characteristics are somehow statistically controlled, one cannot be sure whether major fields attract students with characteristic values regardless of their backgrounds, or whether different major fields attract students with different demographic backgrounds who happen incidentally to vary in values. Feldman and Newcomb (1970) indicate we cannot be sure whether students vary in attributes (such as values) in spite of or because of their backgrounds, and that future research could perhaps answer such a question as, "Do white male Catholic students of high socioeconomic background show attitudes and value differences across major fields?" In any discussion of major field differences with respect to values, the exact contribution of background variations remains unknown (Feldman and Newcomb, 1970).
The results of studies of major field differences with respect to the relative importance given by students to the six Spranger values as measured by the Study of Values is summarized in Table 5 (Feldman and Newcomb, 1970). Students in the humanities including literature, language, philosophy, the performing and creative arts almost without exception score in the high category in the aesthetic value. Students in education are in the high and medium category on the aesthetic value, and students in the social sciences place in the medium third. Placing low on the aesthetic scale are the natural sciences including physics, chemistry, pre-medical, mathematics, engineering and business administration. (Feldman and Newcomb, 1970)

Women score higher on the aesthetic scale than men (Allport, Vernon, Lindzey, 1960), and the major fields whose students place the highest emphasis on aesthetic values are the fields that have high proportions of women students; and the major fields whose students place the lowest emphasis on aesthetic values are the fields (natural science, engineering, business) that enroll a relatively low proportion of women (Feldman and Newcomb, 1970).

If separate analysis were done for men and women, it may be that no value differences among students in various curricula would appear; then the observed major field differences are due to the differential curricular distribution of men.
<table>
<thead>
<tr>
<th>field</th>
<th>curriculum</th>
<th>theoretical</th>
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<td>engineering</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>social sciences</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Note: Summary of the rankings of major fields with respect to scores on the Allport-Vernon-Lindsey Study of Values (Feldman, Newcomb, 1970) ranking: 5 = highest importance; 1 = lowest importance
<table>
<thead>
<tr>
<th>curriculum</th>
<th>theoretical</th>
<th>economic</th>
<th>aesthetic</th>
<th>social</th>
<th>political</th>
<th>religious</th>
</tr>
</thead>
<tbody>
<tr>
<td>arts</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>philosophy</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>journalism</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>business administration</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>general education</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>physical education</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

5=highest importance; 1=lowest importance
and women. If in separate analyses similar major field differences still appeared, the uneven sex distribution would probably inflate major field differences for combined men-women samples (Feldman and Newcomb, 1970). Feldman and Newcomb believe the latter is more likely than the former.

Williams (1972) tested male graduate students whose academic majors represented all of the Holland types. He measured values, vocational preference, and other personality traits via the SVL and Holland's Vocational Preference Inventory. In general he found values and personality patterns matched Holland's and Allport-Vernon-Lindzey's description of each model type. He also found that the students had chosen vocations consistent with their personality and values.

Another study (Warnath and Fordyce, 1970) that examines the role of values in choice of major presents major field differences for the eight scales of the Poe Inventory of Values. The findings parallel those studies which used the Study of Values. Students in engineering, agriculture, and veterinary medicine are likely to have "traditional values" while students in the humanities, communication, arts and education were likely to have "emergent values" (values in a state of flux). The students with "emergent values" evinced more than one career choice or were undecided.

Differentiation of values based upon major has been noted in other cultures as well. Singh (1969) studied 302
students at the Brighton College of Education in Britain, and at London University in an effort to demonstrate the differences, if any, between education students and those students in the humanities, social science and science curricula. Using the Study of Values and other instruments, the researcher concluded that differences between subject fields constituted the major source of variance.

Other Influences Upon Choice of Major and Career Development

Some other influences upon one's choice of major appear to be (1) parental influence, (2) family background, (3) socioeconomic status, race and (4) sex role socialization.

Researchers at the Horace Mann Lincoln Institute of School Experimentation at Columbia University investigated why one's primary interest might be scientific while another's primary interest is humanistic (Allen, 1975). One phase of the study was a review of more than 100 research studies in the identification of motivation behind a choice of scientific major. The findings indicated that scientific interests seem to be influenced by a strong father, secondary school teachers, and by exposure to extra class science activities. Previous studies by Vineyard (1959) and Cooley (1963) tend to support these conclusions but Cooley also found socioeconomic status to be important; the higher the socioeconomic status, the more likely one's interest in science.

In three predominantly black colleges, interest patterns of science and nonscience majors were compared (Tilford, 1962).
He surveyed a large sample (1006) of black students in three states including science and non-science majors. The students were identified as pure science majors, applied science majors, or non-science majors on the basis of the following criteria: pure science - a student whose major field of study is chemistry, biology, mathematics, pre-medicine, pre-dentistry, or engineering; applied science - a student whose major field of study is business, home economics, animal science, or medical technology; non-science - a student whose major field of study does not require the taking of a course in biology, physics, chemistry, or mathematics beyond the introductory level. Some of the questions asked were: (1) "Are the backgrounds of black college students who major in science different from those of non-science majors?", (2) "Are there characteristics of high school attendance which tend to affect the choice of science or non-science majors?", and (3) "What influences within the family, in high school, and in college are pertinent to the choice of a science or non-science major?"

The significant findings were that family background, socioeconomic status, number of siblings, and ordinal position of black students exercised little influence on selection of their majors; science and non-science majors do not differ in the degree of impact of influential persons and activities in high school. Non-science majors were influenced
by family members in their choice of a major field to a
greater degree than science majors.

Nonscience majors were influenced by students' family
members regardless of major field. This study yields
valuable data about the influence patterns of black science
and nonscience majors, but unfortunately, it does not answer
the question (and it does not purport to do so) of whether
the majors were chosen by the students because of their
interests in them or because of some other reason.

According to Miller and Swanson (1969) disadvantaged
students recognize their limitations in economic-social
advancement and they create values and behaviors which limit
mobility. "Because success and security are uncertain, jobs
are chosen because of the money that can be earned rather
than vocational interest." This is significantly different
from the majority student who according to Jacob (1964)
places personal fulfillment above economic satisfaction.

One of the most significant influences on career devel-
opment appears to be socioeconomic background. Newcomb and
Feldman (1970) report that students from high socioeconomic
backgrounds overchoose such fields as medicine, social
science, arts and humanities, law and other political areas,
and that the field of engineering and education are over-
chosen by students of low socioeconomic backgrounds. It was
found that the natural sciences were chosen more equally by
students from both statuses. Findings are inconclusive about the field of business.

William Amos (1968) presents evidence that size of city, religious background, and race are additional determinants of initial career choice. He found that black students are more likely to choose biological science, education and social science, rather than engineering, law, business and humanities. This finding is not true for developmental education students in the '70's.

The Bentley and Hemp study of agricultural students, Norton and Wilcox's comparison of factory workers and teachers, and the studies of choice of the teaching professor (Feldman and Newcomb, 1970) suggest that influences vary from one specialization to another. Apparently quite frequently teaching is selected because of an "inspiring" model, but failure to control sociological and psychological determinants makes it difficult to evaluate this factor.

There are few systematic investigations of reported external influences upon educational choice. The common sense observation that many young people elect to attend college because of parental influence has been confirmed by the self report of high school seniors in Washington (Feldman and Newcomb; 1970), Wisconsin and Minnesota (Berdie, 1954).
It has been recognized that women face special problems in choosing a major and in career planning (Osipow, 1975). These problems emanate from the sex role socialization that most experience (O'Neil, Johnson, Barke, Myers 1968); the essence of that socialization is that women students tend to choose majors which lead to "nurturing" careers such as teaching, nursing and social work.

Women at Beirut College responded to a questionnaire on the importance of reference groups on their educational and occupational aspirations. As a total group, or as defined by SES, religion, size of hometown and nationality, these women indicated that parents had significant impact on college curriculum chosen by them. The higher the SES, the greater the father's influence; in low SES other family members tended to have some impact; mothers and fathers were of equal influence; brothers and sisters had some impact; but teachers, counselors, and other adults had practically none (Tomeh, 1968).

This selective review of the research shows that there are a multitude of influences upon the career development of students and the majors chosen by them.

Implications of Related Research

The research reviewed in this chapter has been concentrated in four primary areas: (1) career development theory, (2) values and career development, (3) values and choice of major, and (4) other influences upon career development and
choice of major.

Implicit in all the research on career development is the idea that the process is dynamic, lifelong and is related to persons, personality and its components such as values, and the self concept.

It is also clear that the questions raised by Chickering (1972) such as (1) what conditions made a difference to career development, (2) what and who influence career development, and (3) how can career development be accelerated rather than retarded at whatever level the students are operating, need to be answered and the answers are likely to be different depending on one's values, reference groups, parents, age, sex and so forth.

We clearly need more precise assessment tools which not only seek to classify but which measure such variables as influence, career readiness and compatible career exploration environments, among many.

Finally, since career development is a lifelong process, and most people are going to be involved in the world of work on a full or part time basis, one of the greatest services educators can do is to help students through the career development process in a systematic way, to keep their options open until they have enough information about themselves, careers, and the people engaged in these careers.
CHAPTER III

METHOD

Subjects

The 100 high school graduates participating in the Pre College Social Development Project (PCSD) and subsequently in the research had to meet certain requirements to participate in the 1976 summer program. They had to (1) be admitted to the university, (2) have severe academic deficits, particularly in mathematics and/or the natural sciences; and (3) come from low socioeconomic families. (Appendix D) The students accepted into the PCSD Project also had to represent the following racial groups: blacks, Hispanics, Appalachian whites and Asian Americans. (See Table 7)

Design

Campbell and Stanley's experimental design is used in this study. The rationale for using the four group design is (1) the randomization assures statistical equivalence of the group, (2) the demand for comparison is well satisfied with the first two lines and second two lines, (3) history and maturation are controlled with the first two lines, (4) possible interaction effects and possible pretest subject
TABLE 7

RACIAL COMPOSITION
1976
PCSD STUDENTS

N = 100

<table>
<thead>
<tr>
<th>Racial Group</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>blacks</td>
<td>81</td>
</tr>
<tr>
<td>Hispanics</td>
<td>11</td>
</tr>
<tr>
<td>Appalachian whites</td>
<td>6</td>
</tr>
<tr>
<td>Asian Americans</td>
<td>2</td>
</tr>
</tbody>
</table>

Note: Each racial group except Asian Americans had more women represented in the PCSD group than men.
sensitization is controlled by the first three lines, and (5) the fourth line controls for any possible contemporaneous effects that may have occurred between those pretested and those not pretested. In the four group design one sees the power of each test separately and the power of replication because in effect there are two experiments. Note:

\[ R_{O1XO2} \] (Experimental)

\[ R_{O1O2} \] (Control)

\[ R_{XO2} \] (Experimental)

\[ R_{O2} \] (Control)

Instrumentation

Two instruments were used, the Moore Career Inventory (Appendix B) and Allport-Vernon-Lindzey Study of Values (Appendix A). The Moore Career Inventory is an instrument designed by the researcher to measure change and expansion of academic major choices as defined in the study. The instrument was validated in the Agricultural Research Department at The Ohio State University and through administrations to students enrolled in a university college course. The students were given the tests twice. The interval between the two administrations was one week. The Pearson product moment correlations was .90. The higher the correlation between measures, the higher the validity.
Also, if we obtain the same results when we measure the same persons or objects again with the same instrument, we can assume the reliability of the instrument. The career inventory measured what it purported to measure and did it consistently.

The Study of Values was used in this study to determine if there is a difference between the values of PCSD students and the norm group in instrument. The Study of Values measures the relative prominence of six basic interests or personalities (Table 8). It is also highly predictive of occupational careers chosen by students (Allport, 1960). The Study of Values was chosen for use in this study because it is the only well known commercially available values scale, it has extensive external validation, it is easily scored, and it provides a framework for counseling students.

It does, however, have a major flaw: its ipsative procedures. Ipsative measures are systematically affected by other measures and are referred for interpretation to the same mean (Kerlinger, 1973). This produces a negative correlation between items, and in paired comparisons, the selection of one member of a pair automatically excludes the selection of the other member. This results in a lack of independence of elements entering a statistical formula. The researcher cannot then treat ipsative data normatively if a true picture is to emerge.
### TABLE 8

**STUDY OF VALUES**

*Six Basic Interests or Motives* and Related Occupational Orientation

<table>
<thead>
<tr>
<th>Basic Interests or Motives</th>
<th>Occupational Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical</td>
<td>Empirical approach to knowledge - Scientist, College Professor</td>
</tr>
<tr>
<td>Economic</td>
<td>Utilitarian use of knowledge - Accountant, Marketing Executive</td>
</tr>
<tr>
<td>Aesthetic</td>
<td>Emphasis on form &amp; harmony - Artist, Writer, Dramatist</td>
</tr>
<tr>
<td>Social</td>
<td>Humanitarian emphasis - Minister, Teacher, Counselor</td>
</tr>
<tr>
<td>Political</td>
<td>Values influence, power, status - Banker, Lawyer, Politician</td>
</tr>
<tr>
<td>Religious</td>
<td>Unity, mysticism key variables - Hermit, Cult Leader, Mystic</td>
</tr>
</tbody>
</table>

*Based on Edward Spranger's Types of Men (See Appendix A)*
Procedures

A peer counselor was chosen to assist the counselor-researcher in the testing and interpretation process. She was a senior enrolled in a pre-medicine curriculum who had been a peer counselor in Developmental Education for two years. She was trained by the researcher to administer and interpret the tests used in this study.

She was also trained by the Counseling & Consultation Service staff to use such counseling skills as interviewing, listening, and giving feedback to students.

The 100 students in the Pre College Social Development Program were assigned by the Director to the career development class to be facilitated by the researcher for six weeks. The following took place at the first class meeting on Tuesday.

The class was told this was to be a career development class but it was too large; therefore, some people would only be involved in the career testing and assigned to physical education classes. The researcher then randomly assigned the students to experimental groups C and S and control groups P and D.

Group D was told to report immediately to the Director of the PCSD project who would assign them to a physical education class. They were also told by the researcher to return for career testing the 6th Tuesday of the quarter.
Group S was directed to a room next to the career development class where the group was given an orientation to the campus by the Assistant Director of the PCSD program. This group was told to return to the career class on Thursday from 3:00 to 5:00.

The remaining groups P and C were given the Study of Values followed by the Moore Career Inventory. The groups were told they could get feedback about their results on the Study of Values test at the end of six weeks if they requested it. The peer counselor who administered the Moore Career Inventory subsequently dismissed group P telling them they would be involved only in the testing. They were also assigned to a physical education class which met from 1:00 to 3:00 on Tuesdays and Thursdays. They were reminded to return for testing the 6th Tuesday of the quarter.

The remaining group C was told their career development class would meet from 1:00 to 3:00 on Tuesdays and Thursdays.

In summary, experimental group C met as a career development group on Tuesdays and Thursdays from 1:00 to 3:00 and experimental group S met the same days from 3:00 to 5:00. There were 25 in each experimental group.

Control group P was assigned to a physical education class on Tuesdays and Thursdays from 1:00 to 3:00, while control group D was assigned on the same days from 3:00 to 5:00. There were also 25 persons in each control group.
One control group (P) and one experimental group (C) were pretested with the Moore Career Inventory. The Study of Values test was also given to these two groups only. At the end of the treatment all four groups were posttested with the Moore Career Inventory.

Treatment

The treatment for the experimental group involved a directive group counseling technique labeled The Modified Force Field Analysis (Appendix C). The technique was used by researchers in the Career Life Planning Seminar taught in the counseling center at The Ohio State University (Winer, 1975). The framework for the technique is Kurt Lewin's Field Theory (Appendix C). Lewin emphasized the interaction between the person and his psychological environment, or his life space, and he indicated that when a force in that environment has sufficient strength it will cause psychological movement (Lewin, 1951). Many disciples of Lewin have tested his force field theories through substitution experiments. Mahler for example found that a second goal can be substituted for the first if the substitute goal has a higher degree of reality (Hall, Lindzey, 1957).

Using the Modified Force Field Analysis, the researcher sought to "force" the subjects to substitute a second academic major goal which had a "higher degree of reality."
Specifically, the treatment involved structured group interaction such as giving the group real and hypothetical problems to analyze. The interaction involved (1) determining one's values, interests and abilities, (2) defining goals, (3) gathering information from resource persons, (4) delineating the "forces for" and the "forces against" the goals, and (5) generating alternatives. The materials were designed in such a way that the group was able to subdivide itself into smaller groups of five and work on each problem. This allowed each person to be actively involved in listening, talking, writing, information gathering and in decision making behaviors. Each group was asked to select facilitators who became the recorders and subsequently the reporters when the larger group reconvened. The counselor-researcher's role became one of verbally and nonverbally reinforcing relevant participation in each subgroup. For an example of a hypothetical problem attacked by the subgroups see Appendix D.

During the six weeks, resource persons from career areas such as home economics, industrial photography, the foreign service, law librarianship, public relations, urban planning, journalism and corrections joined the group. These persons were chosen to participate in the information giving part of the treatment because they all had changed their academic majors at least once, they were satisfied with their present career, and they all represented career areas not requiring
strong mathematics and science backgrounds. The researcher interviewed them in the group. The students were encouraged to ask any questions they desired of the resource persons.

The fourth week of the quarter students began analyzing their own academic major goals. Everyone in the group had an opportunity to talk through the questions used in the hypothetical cases, and everyone completed self analysis sheets related to his or her own academic major goal.

At the end of six weeks, the Moore Career Inventory was given as a posttest to determine any change or expansion of academic major choices. At the end of the testing session, groups P and C were asked to remain. With the assistance of the peer counselor, feedback was given to the students about the Study of Values scores.

Follow-Up

From the end of Autumn 1976 to Spring quarter 1978, all 100 students were sent a letter each quarter asking them to meet with the counselor or peer counselor within the quarter.

Data Analysis

Campbell and Stanley's Experimental Design was used; that is, there were four groups, 2 control and 2 experimental. One control group (P) and one experimental group (C) were pre and post tested; experimental group (S) was post tested only as was the control group (D).
A Two Way Analysis of Variance was computed on the posttest data from the Moore Career Inventory in order to test for the main effects of the treatment and of pretesting, as well as for any possible interaction effects. The t-test was used to determine any significant differences between group mean scores. The .05 level of confidence was adopted as the critical test.

The t-test was also used to determine significant differences between the mean scores of PCSD students and the norm group in the Study of Values. Confidence intervals were formed to determine the confidence limit for any mean differences.

The responses to the questions on the Moore Career Inventory are also ranked. Finally, follow-up data on academic major choices, cumulative mean grade point averages in selected subjects, and withdrawal and dismissal data are reported.

Limitations

The generalizability of this study is limited to the Pre College Social Development students currently enrolled in Developmental Education. It would be a serious error to extend its findings to other minority populations, or to
assume that subsequent proportions of minority students entering the Developmental Education program will have the same deficiencies in the mathematic and scientific areas. Other limitations relate to time, instrumentation, treatment and the size of the groups.

In terms of time, six weeks is a short time in which to make an impact upon students' career development given the previous history of this development. The instrument used to measure values and their relationships to academic majors and to compare PCSD students with the Study of Values norm group in terms of their values has some flaws. Its ipsative scoring is the major flaw; that is, the scores on the values category are interdependent, i.e., a high score on one value automatically means that a subject will receive a lower score on another value. This, according to Kerlinger (1963), makes interpretation more difficult because it "prevents the accumulation of definite statistical information . . . on whether or not the six measures (scales) are unidimensional and relatively distinct." Kerlinger (1963) also says that the ipsative approach produces spurious negative correlations between items, and that analysis of correlations can be seriously distorted by negative correlations, therefore making it problematic to treat ipsative data normatively.

The size of the group made it impossible to administer the treatment to the entire group of 50; hence the need for
two separate treatment groups which met at different times. Although the researcher sought to replicate the treatment for the second group, an exact replication was impossible because of the differing responses of the groups. Also related to size was the problem of having 25 persons in each group; this worked rather well, however, because the content of the treatment and the size of the room allowed for subgroups of five to work concurrently.
CHAPTER IV

RESULTS

It was posited in action hypothesis one that:

There will be no difference between
the number of students changing academic
majors in the experimental group and in
the control group.

\[ H_0: M_{A1} = M_{A2} \]
\[ H_1: M_{A1} \neq M_{A2} \]

The main effect of the treatment (Factor A - treatment, no treatment) as measured by a two way analysis of variance was significant. \((F[1,56] = 9.10; P < .005)\) (See Table 9)
Therefore the null hypothesis was rejected.

The main effects of pretest sensitization (Factor B - pretest, no pretest) and their interaction (AXB) were also examined. The main effects due to pretesting and the AB interaction effect were nonsignificant. (See Table 9)

The comparisons of various group mean scores yielded the following results:

1. The pretest and posttest scores of experimental group C were compared to determine the actual gain due to the experimental treatment; findings indicated a significant difference \((t [14] = 6.30; p < .001)\).
### TABLE 9

**ANALYSIS OF VARIANCE**

*(CHANGE OF MAJOR)*

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups (A)</td>
<td>1,693.12</td>
<td>1</td>
<td>1,693.12</td>
<td>9.10*</td>
</tr>
<tr>
<td>Pre-test (B)</td>
<td>17.12</td>
<td>1</td>
<td>17.12</td>
<td>.09</td>
</tr>
<tr>
<td>A X B</td>
<td>8.00</td>
<td>1</td>
<td>8.00</td>
<td>.04</td>
</tr>
<tr>
<td>Within</td>
<td>11,029.18</td>
<td>56</td>
<td>196.96</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12,747.42</td>
<td>59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.005

### TABLE 10

**ANALYSIS OF VARIANCE**

*(EXPANSION OF MAJOR)*

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups (A)</td>
<td>1,846.18</td>
<td>1</td>
<td>1,846.18</td>
<td>9.16*</td>
</tr>
<tr>
<td>Pre-test (B)</td>
<td>18.11</td>
<td>1</td>
<td>18.11</td>
<td>.10</td>
</tr>
<tr>
<td>A X B</td>
<td>9.00</td>
<td>1</td>
<td>9.00</td>
<td>.05</td>
</tr>
<tr>
<td>Within</td>
<td>11,340.69</td>
<td>57</td>
<td>199.98</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>13,213.98</td>
<td>60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.005
2. Posttest scores of the two pretested groups (experimental group C and control group P) were then compared to determine the effect of the treatment when subjects are pretested; results revealed a significant difference ($t [28] = 1.11; p < .05$).

3. A similar comparison of the posttest scores of the nonpretested subjects (experimental group S and control group D) also revealed a significant difference ($t [28] = 2.18; p < .05$).

4. The pretest scores of group P and the posttest scores of the nonpretested group S were compared to assess the amount of gain due to the experimental treatment when subjects are not pretested; results disclosed a significant difference between means ($t [28] = 2.51; p < .01$).

The results of the pre and posttest scores of group P revealed no significant difference. No significant effects of history and/or maturation on the outcome were discovered when the pretests of groups P and C were compared with the posttests of group D. Mean and standard deviation scores for the experimental and control groups are presented in Table 11.

It was posited in action hypothesis two that:

There will be no difference between the number of students expanding their academic majors in the experimental group and in the control group.

$$H_0 \mu_1 = \mu_2$$

$$H_1 \mu_1 \neq \mu_2$$
<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-Test M</th>
<th>Pre-Test SD</th>
<th>Post-Test M</th>
<th>Post-Test SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experimental Groups</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group C (n=25)</td>
<td>101.13</td>
<td>16.32</td>
<td>111.53</td>
<td>12.66</td>
</tr>
<tr>
<td>Group S (n=25)</td>
<td></td>
<td></td>
<td>109.73</td>
<td>9.49</td>
</tr>
<tr>
<td><strong>Control Groups</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group P (n=25)</td>
<td>98.60</td>
<td>15.29</td>
<td>99.87</td>
<td>17.30</td>
</tr>
<tr>
<td>Group D (n=25)</td>
<td></td>
<td></td>
<td>99.53</td>
<td>15.44</td>
</tr>
</tbody>
</table>

Note: Pre and post test scores, group C; $p < .001$
Post test scores, groups C and P; $p < .05$
Post test scores, groups S and D; $p < .05$
Pre test, group P; post test, group S; $p < .01$
Using the same statistical procedure as in hypothesis one, the main effects of the treatment were significant \( (F[1,57] = 9.16 \ p < .005) \). Therefore the second null hypothesis was rejected. (Table 10)

A comparison of the pre and posttest scores of group P revealed no significant difference. No significant combined effects of history and maturation on the outcome were discovered when the pretests of groups C and P were compared with the posttests of D. Mean and standard deviation scores are reported in Table 12.

For the research hypotheses:

There will be no difference between the values of the PCSD students and the values of the norm group in the Study of Values.

\[ H_0: M_{A1} - M_{A2} = 0 \]

\[ H_1: M_{A1} > M_{A2} \]

The t test was used to determine significant differences between the means and confidence intervals were constructed for each scale on the Study of Values to determine the confidence limit for the mean difference. The confidence limit was 0.95. If the confidence interval contains zero, conclude no difference; if not, they are different. The confidence interval was:

\[ H_0: X_{li} = X_{ai} \quad X_{li} - X_{ai} = 0. \]

Therefore there is no difference between the values of the
## TABLE 12

MEANS AND STANDARD DEVIATIONS
OF PCSD STUDENTS
(EXPANSION OF MAJORS)

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-Test M</th>
<th>Pre-Test SD</th>
<th>Post-Test M</th>
<th>Post-Test SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experimental Groups</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group C (n=25)</td>
<td>117.14</td>
<td>17.46</td>
<td>121.47</td>
<td>11.69</td>
</tr>
<tr>
<td>Group S (n=25)</td>
<td></td>
<td></td>
<td>114.72</td>
<td>8.36</td>
</tr>
<tr>
<td><strong>Control Groups</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group P (n=25)</td>
<td>99.40</td>
<td>16.10</td>
<td>101.34</td>
<td>16.33</td>
</tr>
<tr>
<td>Group D (n=25)</td>
<td></td>
<td></td>
<td>99.92</td>
<td>15.79</td>
</tr>
</tbody>
</table>

Note: Pre and post test scores, group C; p < .001
Post test, groups C and P; p < .01
Post test, groups S and D; p < .05
Pre test, group P; post test, group S; p < .05
PCSD students and the values of the norm group. The hypothesis was sustained.

The mean and standard deviations for the norm group and the PCSD group are reported by sex in Tables 13 and 14.

The academic majors chosen by the experimental and control groups (post experiment) are shown in Table 16.

While the sample evidence used in this study does not reveal a significant difference between the values of PCSD students and the norm group, it is worth noting the differences between the two groups on several of the scales. PCSD women scored higher (39.6) on the theoretical scale and lower (35.6) on the aesthetic scale than the women in the norm group, while the norm group women scored higher on the aesthetic scale (42.6) and lower on the theoretical scale (35.7).

PCSD men scored lower on the theoretical scales (37.4) than the norm group men (43.7) and higher on the social scales (PCSD men - 41.1, norm group men - 37.0).

Follow-Up

Once the PCSD students enter Developmental Education, they are assigned an adviser-counselor who (1) gives them academic information about the majors they have chosen, (2) schedules their classes quarterly, and (3) does academic counseling. As coordinator of the advising-counseling staff,
TABLE 13
MEAN AND STANDARD DEVIATION SCORES
OF PCSD AND 1960 STUDY OF VALUES NORM GROUP

<table>
<thead>
<tr>
<th></th>
<th>Males N=2489</th>
<th>Norm Group Means SD</th>
<th>PCSD N=17</th>
<th>Norm Group Means SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical</td>
<td>43.7</td>
<td>7.3</td>
<td>37.4</td>
<td>7.9</td>
</tr>
<tr>
<td>Economic</td>
<td>42.7</td>
<td>7.9</td>
<td>42.4</td>
<td>7.5</td>
</tr>
<tr>
<td>Aesthetic</td>
<td>35.0</td>
<td>8.4</td>
<td>36.4</td>
<td>8.0</td>
</tr>
<tr>
<td>Social</td>
<td>37.0</td>
<td>7.0</td>
<td>41.1</td>
<td>9.5</td>
</tr>
<tr>
<td>Political</td>
<td>42.9</td>
<td>6.6</td>
<td>40.4</td>
<td>5.2</td>
</tr>
<tr>
<td>Religious</td>
<td>38.2</td>
<td>9.3</td>
<td>40.9</td>
<td>8.5</td>
</tr>
</tbody>
</table>

There were no significant differences between the values of the PCSD men and the men in the norm group.

<table>
<thead>
<tr>
<th></th>
<th>Females N=1289</th>
<th>Norm Group Means SD</th>
<th>PCSD N=33</th>
<th>Norm Group Means SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical</td>
<td>35.7</td>
<td>7.1</td>
<td>39.6</td>
<td>7.3</td>
</tr>
<tr>
<td>Economic</td>
<td>37.8</td>
<td>7.3</td>
<td>39.4</td>
<td>6.8</td>
</tr>
<tr>
<td>Aesthetic</td>
<td>42.6</td>
<td>8.3</td>
<td>35.6</td>
<td>8.7</td>
</tr>
<tr>
<td>Social</td>
<td>42.0</td>
<td>7.0</td>
<td>41.2</td>
<td>6.6</td>
</tr>
<tr>
<td>Political</td>
<td>37.8</td>
<td>6.2</td>
<td>40.5</td>
<td>5.6</td>
</tr>
<tr>
<td>Religious</td>
<td>43.8</td>
<td>9.4</td>
<td>43.2</td>
<td>7.6</td>
</tr>
</tbody>
</table>

The theoretical and aesthetic scales of the PCSD women differed from norm group women. The other four scales were not significantly different.
TABLE 14

MEAN AND STANDARD DEVIATION SCORES OF FCSD STUDENTS
AND STUDY OF VALUES NORM GROUP

<table>
<thead>
<tr>
<th>Norms: Means and Standard Deviations</th>
<th>Theoretical</th>
<th>Economic</th>
<th>Aesthetic</th>
<th>Social</th>
<th>Political</th>
<th>Religious</th>
</tr>
</thead>
<tbody>
<tr>
<td>3778 College Students Mean</td>
<td>39.75</td>
<td>40.33</td>
<td>38.88</td>
<td>39.56</td>
<td>40.39</td>
<td>41.01</td>
</tr>
<tr>
<td>S.D</td>
<td>7.27</td>
<td>7.61</td>
<td>8.42</td>
<td>7.03</td>
<td>6.44</td>
<td>9.31</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FCSD: Means and Standard Deviations</th>
<th>Mean</th>
<th>38.50</th>
<th>40.90</th>
<th>36.00</th>
<th>41.11</th>
<th>40.41</th>
<th>42.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.D</td>
<td>7.60</td>
<td>7.11</td>
<td>8.31</td>
<td>8.01</td>
<td>5.80</td>
<td>8.01</td>
<td></td>
</tr>
</tbody>
</table>

the researcher gave each adviser a list of the PCSD students assigned to him or her, and directed them to send the student to the researcher during the week they came in to schedule each quarter. Those who were missed, using this procedure, were sent a letter by the researcher or peer counselor.

Using this approach, with the peer counselor's help, we met with all but five students, interpreted their Study of Values scores, and discussed the possible outcomes of their academic major choices in light of their grades. The peer counselor who assisted the researcher obtained the students' grades quarterly and she noted the number of experimental and control students who had been withdrawn or who had been dismissed. (Table 15)

When the experimental students entered Autumn 1976, they chose the majors that were reflected in their posttesting experience during the career development experiment (Table 16). However, at the beginning of Winter 1977, they had, for the most part, reverted back to their original (pre-experiment) academic major choices. They, essentially, clung to these choices until June 1978 (Tables 17, 18, 19), the time of decision making in terms of transferring to a degree granting college, if they had earned 90 hours. By that time, 20 of the experimental students had been dismissed for academic reasons (compared to 28 of the control students). Of the remaining 30 experimental students, 9 transferred to another university,
TABLE 15
MEAN GRADES IN SELECTED SUBJECTS
OF PCSD STUDENTS

Autumn 1976 - Spring 1978

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>2.45</td>
<td>2.56</td>
<td>2.35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>1.07</td>
<td>0.45</td>
<td>0.41</td>
<td>0.27</td>
<td>0.27</td>
<td>0.20</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>2.01</td>
<td>2.13</td>
<td>2.12</td>
<td>2.21</td>
<td>2.43</td>
<td>2.44</td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>1.09</td>
<td>0.45</td>
<td>0.12</td>
<td>0.05</td>
<td>0.05</td>
<td>0.04</td>
</tr>
</tbody>
</table>

N = 96 90 79 69 63 47
TABLE 16

DISTRIBUTION OF ACADEMIC MAJOR CHOICES BY PCSD STUDENTS
PRIOR TO EXPERIMENTAL TREATMENT JULY 1976

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>5%</th>
<th>10%</th>
<th>15%</th>
<th>20%</th>
<th>25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allied Medicine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dentistry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts and Sciences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=25</td>
<td>5%</td>
<td>10%</td>
<td>15%</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>Medicine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Allied Medicine</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Dentistry</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Pharmacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts and Sciences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Other majors chosen (less than 5%): education, social work, journalism; no choice
### TABLE 17

**DISTRIBUTION OF ACADEMIC MAJOR CHOICES BY PCSD STUDENTS**

**AUGUST 1976**

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>5%</th>
<th>10%</th>
<th>15%</th>
<th>20%</th>
<th>25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Choice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allied Medicine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts and Sciences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Other majors chosen (less than 5%) - Medicine, Social Work, Journalism, Dentistry, Pharmacy, Nursing.

<table>
<thead>
<tr>
<th>Control Group</th>
<th>5%</th>
<th>10%</th>
<th>15%</th>
<th>20%</th>
<th>25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allied Medicine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dentistry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts and Sciences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Other majors chosen (less than 5%) - medicine, social work, journalism, dentistry, pharmacy, nursing.
<table>
<thead>
<tr>
<th>Major</th>
<th>5%</th>
<th>10%</th>
<th>15%</th>
<th>20%</th>
<th>25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Choice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Allied Medicine</td>
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<tr>
<td>Nursing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts and Sciences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Other majors chosen (less than 5%): medicine, social work, journalism, dentistry, pharmacy
13 withdrawals; 8 academic dismissals
TABLE 19

DISTRIBUTION OF ACADEMIC MAJOR CHOICES BY PCSD STUDENTS
AUTUMN, WINTER, SPRING 1977-78

<table>
<thead>
<tr>
<th>Major</th>
<th>5%</th>
<th>10%</th>
<th>15%</th>
<th>20%</th>
<th>25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allied Medicine</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Nursing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts and Sciences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Other majors chosen (less than 5%): medicine, education, social work, architecture, home economics, journalism, pharmacy, no choice

18 withdrawals; 19 academic dismissals
one each entered the College of Home Economics and Engineering respectively, 5 remained in University College and the largest number, 15, entered the College of Arts and Sciences.

From the follow-up of experimental and control students we can also ascertain (1) the important influences on students' choice of major or career, (2) the relationship of the students' academic major choices to the occupational field, (3) the occupations the students know most about, and (4) the options chosen by the students when their first choice of major was not achievable.

In the matter of important influences upon academic major choices, students indicated "my interest" as the primary reason for selecting a major. It seems at least debatable that students would have interests in academic majors in which they were performing poorly. It seems likely that people are most interested in things they do well. Career development research supports this assumption. One can speculate that "my interest" might indicate that the students are not certain who or what influenced their academic major choices. The second greatest influence upon academic major choice was "my parents." When this was explored in the follow-up, many of the students thought it legitimate to pursue their parents' choice of major for them; their rationale was usually that if parents were making it possible for them to attend college, then they owed it to the parents
**TABLE 20**

Responses Ranked *from Moore Career Inventory*

<table>
<thead>
<tr>
<th>Question</th>
<th>N=50 Pre-testing</th>
<th>N=100 Post-testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is your choice of major now?</td>
<td>Business Administration</td>
<td>No choice</td>
</tr>
<tr>
<td></td>
<td>Allied Medicine</td>
<td>Arts &amp; Sciences</td>
</tr>
<tr>
<td></td>
<td>Arts &amp; Sciences</td>
<td>Business Administration</td>
</tr>
<tr>
<td></td>
<td>Engineering</td>
<td>Education</td>
</tr>
<tr>
<td></td>
<td>Nursing</td>
<td>Engineering</td>
</tr>
<tr>
<td></td>
<td>Pharmacy</td>
<td>Allied Medicine</td>
</tr>
<tr>
<td></td>
<td>Medicine</td>
<td>Journalism</td>
</tr>
<tr>
<td>2. Who and What influenced your choice of major most?</td>
<td>My interest</td>
<td>My interest</td>
</tr>
<tr>
<td></td>
<td>Parents</td>
<td>Counselor**</td>
</tr>
<tr>
<td></td>
<td>Exposure to related occupation</td>
<td>Person in occupation***</td>
</tr>
<tr>
<td></td>
<td>Reading about the occupation</td>
<td>Reading about the occupation</td>
</tr>
<tr>
<td></td>
<td>Teacher</td>
<td>Exposure to field</td>
</tr>
<tr>
<td></td>
<td>Counselor</td>
<td>Don't know</td>
</tr>
<tr>
<td></td>
<td>Don't know</td>
<td>Parents</td>
</tr>
<tr>
<td>3. What other major have you explored?</td>
<td>None</td>
<td>Arts &amp; Sciences</td>
</tr>
<tr>
<td></td>
<td>Medicine</td>
<td>Education</td>
</tr>
<tr>
<td></td>
<td>Business Administration</td>
<td>Journalism</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>Social Work</td>
</tr>
<tr>
<td></td>
<td>Arts &amp; Sciences</td>
<td>Allied Medicine</td>
</tr>
<tr>
<td></td>
<td>Allied Medicine</td>
<td>Business Administration</td>
</tr>
<tr>
<td></td>
<td>Social Work</td>
<td>Agriculture</td>
</tr>
</tbody>
</table>

*The top seven responses given by the students are ranked here.

**Most of the students identified the researcher here.

***This was generally the person from a nontraditional profession who joined the counseling group and interrelated with the students.
<table>
<thead>
<tr>
<th>Question</th>
<th>Pre-testing</th>
<th>Post-testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Indicate any major you are considering as a second choice.</td>
<td>Engineering, None, Business Administration, Arts &amp; Sciences, Medicine, Pharmacy, Nursing, Education</td>
<td>Arts &amp; Sciences, Education, Journalism, Social Work, Allied Medicine, Business Administration, Agriculture</td>
</tr>
<tr>
<td>6. What occupational field do you plan to enter?</td>
<td>Business Administration, Don't know, Allied Medicine, Engineering, Nursing, Pharmacy, Medicine</td>
<td>Don't know, Business Administration, Arts &amp; Sciences, Education, Engineering, Allied Medicine, Journalism</td>
</tr>
<tr>
<td>7. If you had to write a paragraph about one occupation, which one would you choose?</td>
<td>Medicine, Don't know, Allied Medicine, Education, Social Work, Pharmacy, Nursing</td>
<td>Journalism, Don't know, Education, Social Work, Arts &amp; Sciences, Pharmacy, Agriculture</td>
</tr>
<tr>
<td>8. If you knew today that you could not pursue your first choice of major at this university, what would you do?</td>
<td>Change majors, Go to another university, Don't know, Try to find a job, Go into the service, Go into the Peace Corps, Stay at home</td>
<td>Change majors, Go to another university, Don't know, Get career counseling, Try to find a job, Go into the service, Stay at home</td>
</tr>
</tbody>
</table>

On the pre-test more than one third of the students chose an occupation that had little relationship to their choice of major. This appeared to be the case because of the students' lack of information about specific occupations.
to pursue their choices of academic major. Also, having one's parents select a major for the students helps to delay the "crisis" of making a career decision.

It was interesting and puzzling to note in the findings that more than one third of the students on the pretest indicated they planned to enter an occupational field that had no relationship to their first choice academic major. This finding seemed to occur because the students had little or no information about the academic major or requirements of the occupation.

There was no significant difference between the values of the PCSD (developmental education) students and the norm group. Therefore we cannot conclude from this study that congruence between values and major field choice is related to academic achievement. As measured by the Study of Values, the values of PCSD students were comparable to the upperclass students (norm group) achieving in their major fields.

It was noted in the section devoted to the statement of the problem that there is evidence that congruence between values and academic major or career is related to achievement in college. In following up PCSD students who were able to (1) transfer to the degree college of their choice, and of those who (2) were able* to transfer to a degree granting college

*These were the students who had the necessary courses, credits and grade point average to transfer to a degree granting college.
because they had to leave University College, we found the following:

Four of the experimental students (group C) were able to get into their first choice of major (prior to experimental treatment). One transferred to the College of Engineering with a 2.4 cumulative average. The remaining three transferred into Home Economics and Arts and Sciences. Three of the students' values were congruent with the values of the norm group in the same majors and the PCSD students achieved at the level necessary to transfer into their choice of college. The Engineering student will be graduating in the June 1980 Engineering class. The students who transferred into the College of Home Economics and the College of Arts and Sciences had 2.4, 2.8 and 3.0 cumulative grade point averages, respectively.

Of the remaining experimental students (group D) who transferred into the College of Arts and Sciences, only five had values congruent with the values of the norm group students in Arts and Sciences. Four chose Arts and Sciences before and after the experiment. Three of these students had higher cumulative grade point averages, 3.2, 2.9 and 2.9, respectively, than the other ten students. The nine students who were compelled to transfer to the College of Arts and Sciences had grade point averages ranging from 2.4 to 2.0.

Nine of the control group students transferred to a degree granting college in June 1978; two of them to Engineering, one to Business Administration, one to the College of Nursing, and the remaining student to Physical Education. The remaining four transferred to Arts and Sciences. The Engineering, Business Administration and Nursing student had values congruent with the Study of Values norm group in these majors, and their cumulative grade point averages were 2.3, 2.6 and 2.9 respectively. The remaining students forced to transfer to the College of Arts and Sciences had values incongruent with the values of the Arts and Sciences norm group, and their cumulative averages ranged from 2.3 to 2.0.
The engineering students in the control group will also be graduating in the class of June 1980. The researcher has no data on the graduating status of the other students included in this analyses.

We can conclude from this follow up that with 11 PCSD, students congruence between values and academic major is more related to achievement than incongruent values and academic major.
CHAPTER V

CONCLUSIONS

The conclusions that can be drawn from this study are that Developmental Education students at The Ohio State University:

1. are poorly prepared for the academic majors they are choosing.

2. are making occupational decisions before they have adequate information about themselves or the occupational fields.

3. cling to unachievable academic majors even when there are discrepancies between their performance and the demands of the major.

4. can have their academic major choices influenced with a group counseling technique that is directive.

5. are influenced by role models, particularly parents, in their choice of academic major or occupational fields.

6. need more intensive and frequent counseling to sustain any changes in their academic major choices.

The reasons for Developmental Education students' under-preparation in academic majors requiring two or more years of science and mathematics appears to stem from the students' lack of exposure to chemistry and physics courses and trigonometry and calculus.
Like most students entering The Ohio State University, the developmental education students have decided on career fields they wish to enter, and those career areas often seem more related to the marketability of the career than to the interests, values and abilities of the students. However, if most of the students had not made career choices, the current academic advising program in University College could not adequately assist them in their career development, because the advising is geared to those who have already made their career decisions. Luckily, for most students, they have the academic preparation for the academic major or career field. Developmental education students do not have the necessary academic preparations for highly technical and scientific areas.

The clinging to their academic major choices despite evidence that they may not be able to complete the requirements for the choices in the time they are allotted reaffirms many researchers' findings that it is almost impossible to change career decisions that have been made. This study indicates that a temporary change can be made using a directive group counseling approach, but more needs to be done to determine how a permanent change can be accomplished.

**Implications**

Although positive results were observed in the change
and expansion of students' academic major choices, a number of questions remain to be answered such as:

- What counseling procedures (in what amounts) can help sustain changes in academic major choices when those choices are more realistic than initial choices?
- What is the ideal group size when the intent is to influence career development?
- Would the present findings hold true for comparable populations in other settings?
- What are the differential results of group counseling conducted by leaders with various levels of training and experience?
- How does the Modified Force Field Analysis compare with other directive approaches in career development experiments?
- What part do the characteristics of the counselor and significant others play in influencing students' career choices?

This study has not disproved Ginzberg's assertion that many vocational decisions once made are largely irreversible. One could say that the PCSD students' reversion back to their original academic major choices supports Ginzberg's assumption, but it would be unwise to accept this assertion as fact until it has been researched further.

The primary implication of this study is that unless some drastic changes occur in the academic readiness of developmental education students in the areas of mathematics and science upon their entry to the university, they will be unable to enter the medical areas, engineering and business
administration, and if they cling to these unachievable majors, open admissions will continue to be a "revolving door" for developmental education students.

It is unlikely that the university will change its academic major requirements in a way that will assist the developmental education student in overcoming his or her academic deficits in the mathematics and science areas. The "burden of proof" will continue to fall on the students. It seems necessary that the secondary schools from which the students are recruited do a better job of career counseling, and most importantly, make greater efforts to give each student a better foundation in the mathematical and scientific areas.

Currently in secondary schools, students and parents are asked to make the decision about what college preparatory courses should be taken by the students. They make these decisions too often without knowing or being told the implications of those decisions. The school continues to be the expert in the preparing of students for college; therefore, the responsibility lies with the school in knowing what academic strengths are going to be needed for which academic majors. It is further the school's responsibility not only to administer interest inventories such as the Ohio Vocational Inventory Survey or the Kuder Preference Test, but to interpret those tests to the students and if possible parents. Career counseling should follow so that students understand
the relationship of their abilities, interests and values to their individual career developments.

Another implication of the study is that students have too little occupational information, as well as information about how their interests and abilities relate to academic majors and career areas upon entry to the university. It seems necessary that the secondary schools or the university incorporate a career exploration course into its curriculum. The present University College Survey Class at the university could be the vehicle for intensive individual career exploration.
APPENDIX A

STUDY OF VALUES
APPENDIX

The Allport-Vernon-Lindzey Study of Values is the "result of the efforts of Gordon Allport and Philip Vernon to translate Edward Spranger's book, Types of Men, into a test which would reflect a person's desire to emulate one or more of Spranger's ideal types."

According to Spranger, men fall into one of six ideal types; these types and the explanations of each taken from the Manual for the Study of Values are:

1) The Theoretical. The dominant interest of the theoretical man is the discovery of truth. In the pursuit of this goal he characteristically takes a "cognitive" attitude, one that looks for judgments regarding the beauty or utility of objects, and seeks only to observe and to reason. Since the interests of the theoretical man are empirical, critical, and rational, he is necessarily an intellectualist, frequently a scientist or philosopher. (It must not be thought that a high degree of talent or attainment is necessary to qualify a person for classification in this, or in any type. According to Spranger a person can best be understood not by his achievements but by his interests and intentions.) His chief aim in life is to order and systematize his knowledge.

2) The Economic. The economic man is characteristically interested in what is useful. Based originally upon the satisfaction of bodily needs (self-preservation), the interest in utilities develops to embrace the practical affairs of the business world -- the production, marketing, and consumption of goods, the elaboration of credit, and the accumulation of
tangible wealth. This type is thoroughly "practical" and conforms well to the prevailing stereotype of the average American businessman.

The economic attitude frequently comes into conflict with other values. The economic man wants education to be practical, and regards unapplied knowledge as a waste. Great feats of engineering and application result from the demands economic men make upon science. The value of utility likewise conflicts with the aesthetic value, except when art serves commercial ends. In his personal life the economic man is likely to confuse luxury with beauty. In his relations with people he is more likely to be interested in surpassing them in wealth than in dominating them (political attitude). In some cases the economic man may be said to make his religion the worship of Mammon. In other instances, however, he may have regard for the traditional God, but inclines to consider Him as the giver of good gifts, of wealth, prosperity, and other tangible blessings.

3) The Aesthetic. The aesthetic man sees his highest value in form and harmony. Each single experience is judged from the standpoint of grace, symmetry, or fitness. He regards life as a procession of events; each single impression is enjoyed as a procession of events; each single impression is enjoyed for its own sake. He need not be a creative artist, nor need he be effected; he is aesthetic if he but finds his chief interest in the artistic episodes of his life.

The aesthetic attitude is, in a sense, diametrically opposed to the theoretical; the former is concerned with the diversity, and the latter with the identities of experience. The aesthetic man either chooses, with Keats, to consider truth as equivalent to beauty, or agrees with Mencken, that, "to make a thing charming is a million times more important than to make it true." In the economic sphere the aesthete sees the process of manufacturing, advertising, and trade as a wholesale destruction of the values most important to him. In social affairs he may be said to be interested in persons but
not in the welfare of persons; he tends toward individualism.

4) **The Social.** The highest value for this type is **love of people.** In the *Study of Values* it is the altruistic or philanthropic aspect of love that is measured. The social man prizes other persons as ends, and is therefore himself kind, sympathetic, empathic, cares deeply about other people. In contrast to the political type, the social man regards love as itself the only suitable form of human relationship. Spranger adds that in its purest form the social interest is selfless and tends to approach very closely to the religious attitude.

5) **The Political.** The political man is interested primarily in power. His activities are not necessarily within the narrow field of politics; but whatever his vocation, he betrays himself as a Machtemsch. Leaders in any field generally have high power value. Since competition and struggle play a large part in all life, many philosophers have seen power as the most universal and most fundamental of motives. There are, however, certain personalities in whom the desire for a direct expression of this motive is upper-most, who wish above all else for personal power, influence, and renown.

6) **The Religious.** The highest value of the religious man may be called unity. He is mystical, and seeks to comprehend the cosmos as a whole, to relate himself to its embracing totality. Spranger defines the religious man as one "whose mental structure is permanently directed to the creation of the highest and absolutely satisfying value experience." Some men of this type are "immanent mystics," that is, they find their religious experience in the affirmation of life and in active participation therein. A Faust with his zest and enthusiasm sees something divine in every event.
APPENDIX

STUDY OF VALUES

Norm Group

1968

<table>
<thead>
<tr>
<th>College/University</th>
<th>Theoretical</th>
<th>Economic</th>
<th>Aesthetic</th>
<th>Social</th>
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<th>Religious</th>
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*Comparison for Group PCSD Students
## COLLEGIATE POPULATIONS

### 2475 Females

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<tr>
<th>Institution</th>
<th>1910</th>
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### NORMS: Means and Standard Deviations

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APPENDIX B

MOORE CAREER INVENTORY
APPENDIX

MOORE CAREER INVENTORY

NAME: ________________________ SOCIAL SECURITY NO. ___________

SEX: ________________________ AGE: _______________

Below are questions about major fields of study and related occupations. Please read each question carefully, and answer each one by placing an "X" on the line before your choice (check only one response), or by writing in your answer.

1. What is your choice of major now?
   ___ No Choice ___ Home Economics
   ___ Optometry ___ Journalism
   ___ Business Administration ___ Art
   ___ Medicine ___ Agriculture
   ___ Education ___ Dentistry
   ___ Social Work ___ Pharmacy
   ___ Music ___ Natural Resources
   ___ Engineering ___ Nursing
   ___ Architecture ___ Arts & Science (Humanities)
   ___ Allied Medicine ___ Veterinary Medicine

2. Who influenced your choice of major most?

3. What influenced your choice most?

4. What other major have you explored?
5. Indicate any major you are seriously considering as a second choice.

6. What occupational field do you plan to enter?

7. If you had to write a paragraph about one occupation, which occupation would you choose?

8. If you knew today that you could not pursue your first choice of major at this university, what would you do?

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<th>Choice</th>
<th>Code</th>
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</thead>
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<tr>
<td>Veterinary Medicine</td>
<td></td>
</tr>
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<td>Home Economics</td>
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<td>Journalism</td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td></td>
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<tr>
<td>Natural Resources</td>
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<tr>
<td>Arts &amp; Sciences (Humanities)</td>
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<td>Nursing</td>
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<td>Social Work</td>
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<td>Allied Medicine</td>
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<td>Optometry</td>
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<td>Pharmacy</td>
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</table>

__ Change major   __ Stay at home
__ Go to another college or university       __ Don't know
__ Try to find a job                           __ Other; explain
APPENDIX C

MODIFIED FORCE FIELD ANALYSIS OR DIAGNOSTIC TECHNIQUE
APPENDIX

MODIFIED FORCE FIELD ANALYSIS OR DIAGNOSTIC TECHNIQUE

The Modified Force Field Analysis or Diagnostic Technique was used as a directive counseling approach in this study. The technique was derived from principles of Kurt Lewin's Field Theory. The principles are (1) behavior is a function of the field which exists at the time the behavior occurs, (2) analysis begins with the situation as a whole from which are differentiated the component parts, and (3) the concrete person in (Hall, Lindzey) a concrete situation can be represented mathematically. Lewin also emphasized underlying forces as determiners of behavior and expressed a preference for psychological as opposed to physical or physiological descriptions of the field. A field is defined as the "totality of coexisting facts which are conceived of as mutually interdependent." (Lewin, 1951)

Lewin emphasized the interaction between the person and his psychological environment or his life space, and he indicated that when a force in that environment has sufficient strength it will cause "psychological" movement. Many disciples of Lewin have tested his force field theories through substitution experiments. Mahler found that a second goal can be substituted for the first if the substitute goal has a higher degree of reality. (Hall, Lindzey 1957)

In this study the force field technique was used in the following way. Students were given information about the majors they had chosen and about the related career areas. Then they were asked to read and discuss hypothetical situations in which students were choosing majors. The major was conceived as a goal and students were asked to delineate the "forces for" and the "forces against" achieving the stated goal. Then they were asked to do this with their personal goal. The last step was to have the group discuss new goals and the "forces for and against those goals."
APPENDIX D

PRE COLLEGE SOCIAL DEVELOPMENT PROGRAM

APPLICATION

AN EXPERIMENTAL PROGRAM IN ACADEMIC MOTIVATION (PCSD)

MODIFIED FORCE FIELD - SHEET I

MODIFIED FORCE FIELD - SHEET II
APPENDIX

Pre College Social Development Program

FACT SHEET

PURPOSE OF THE PROGRAM

The purpose of the Pre-College Social Development (PCSD) Program is to provide assistance to minority students in becoming acclimated to the university. Through the workshops and social activities which are offered, PCSD provides experiences designed to enhance each participant's psychological development in making the transition from home to college. Six objectives provide the foundation through which the program operates. Listed below, they are as follows:

a) to decrease the participants' attrition rate
b) to increase the participants' grade point average
c) to expand the participants' knowledge regarding vocational choices
d) to increase the students' social awareness and involvement in campus activities
e) to decrease the number of intergroup conflicts in dormitories participants become involved in
f) to increase the number of minority students who will ultimately graduate from OSU.

PROGRAM PHILOSOPHY

Throughout the program emphasis has been placed on the student's affective as opposed to cognitive development. The philosophy under which the program operates is that if the student is not psychologically prepared to deal with the university environment or unclear as to who she/he is or what she/he wants to be, the student will continually experience difficulty in making the academic adjustment necessary to perform well in the academic program.
Program Content

This summer eight (8) continuous workshops will be conducted. A description of each follows:

Interpersonal Relations

The interpersonal relations workshop will be designed to assist the participants in developing positive interpersonal relations with others in the university. Specific lecture-ettes, discussions, films, experiences, resource personnel and individual and group projects will constitute the instructional vehicles by which the desired learning and growth will take place.

Self Awareness

In the self awareness workshop, students will be provided assistance in gaining a greater understanding regarding their own needs, fears, frustrations and values. Particular emphasis will be placed here in assisting each student to articulate his/her social and academic goals. Students will receive counseling regarding ways in which they can maximize their strengths and minimize their weaknesses in reaching these goals.

Study Skills

The purpose of the study skills workshop will be to familiarize students with basic study techniques and university resources that will assist them in meeting the academic challenges they will face in college courses. During this workshop, instruction will be provided in test taking, time management, library use, reading skills, and note taking skill.

Communicative Skills

The communication skill workshop will be designed to make students aware of the importance attached to their speaking, writing and listening skills. Emphasis also will be placed in making students cognizant of their communication strengths and weaknesses. To this end, exercises will be assigned to help students improve upon these skills and expand their vocabularies.

Anxiety Resolution

In the anxiety resolution workshop, students will discuss changes which are likely to result within their life styles once they matriculate at the university. Possible
means of coping with anxieties which occur due to these changes will be focused on. Students will be provided opportunity to visit actual summer quarter college classes. Information will be provided regarding extra curricular activities available on campus.

**Career Development**

The career development workshop will have as its major goal the provision and development of basic skills for choosing and formulating career plans as they relate to education. Each student will develop in this workshop, primary and alternate four year curriculums for their study. Reports will also be assigned in which students conduct research regarding their career choices. Each student will also be required to identify suitable role models within the university or community who have pursued the same careers the students elect to pursue. The information retrieved by participants will then be used by each student to develop his/her own particular life plan.

**Spatial Exploration**

The purpose of the spatial exploration workshop will be to familiarize students with mathematical concepts and relate applied mathematics to such areas as biological sciences and the physical system. A primary goal of the workshop will be to make students aware of the importance of acquiring skill with regards to mathematics and help to allay their fears of mathematics.

**Drug Abuse**

In the drug abuse workshop, students will be made aware of the variety of drugs which are available. Discussions will be planned which focus on the rationale for using drugs, and consequences which are likely to result from drug abuse. Alternative means for relaxation or anxiety control will be addressed.
APPENDIX

APPLICATION
Pre-College Social Development Program
Sunday, July 17 - Friday, August 27, 1977

NAME_________________________________________  BIRTHDATE_________________________________________
(MONTH) (DATE) (YEAR)

HOME ADDRESS_____________________________________________SOC. SECURITY NO.____________________________

CITY________________________________STATE____________________ZIP____________________

TELEPHONE ( ) ________________________HIGH SCHOOL_____________________________________________________

CITY________________________________STATE____________________ZIP____________________

NAME OF HIGH SCHOOL COUNSELOR____________________________________________________________

NAME OF HIGH SCHOOL PRINCIPAL____________________________________________________________

Please check your family income range:

___Below $6,000 per year  ___$12,000-15,000 per year

___$6,000-9,000 per year  ___$15,000-18,000 per year

___$9,000-12,000 per year  ___$18,000 and over

Please check your race and sex designation:

___Afro-American  ___Appalachian  ___Male  ___Female

___Asian American  ___Spanish-Surnamed

Note:
During May of 1977 all PCSD applications will be reviewed to determine if:

1. Applicant has completed admission forms and received a Letter of Acceptance.

2. Applicant has paid the $25.00 acceptance fee and scheduled an OSU orientation date prior to July 17, 1977.

Applicants who are chosen will be mailed the following for completion:

1. Medical History Sheet  3. Release of Claim Form
2. Research Consent Form  4. Participation Agreement
An Experimental Program in Academic Motivation (PCSD)

The Office of Minority Affairs has developed a summer Pre-College Social Development (PCSD) Program to define and develop academic potential, social awareness and personal behaviors that influence the development of a more positive self concept and promote academic achievement motivation.

The PCSD Program is offered July 19-August 30 (6 weeks) each year to 100 low income minority students who (1) have been admitted to the University, (2) have academic deficiencies, particularly in Mathematics and Science, and (3) are the first in their families to attend college. There is no cost to participants and follow up services are provided.

Six operational objectives have been developed to measure the maximized academic and social achievements of students as compared to the control groups. These program goals which encompass social development skills, are:

1. to decrease the attrition rate
2. to increase the academic grade point average
3. to expand knowledge about career choices
4. to increase social skills and involvement in campus activities
5. to decrease the number of interpersonal and intergroup conflicts in the dormitory settings
6. to increase the number of students graduating

Program effectiveness is partially ascertained by measures of those objectives which can produce raw data e.g. grade point
average. Follow up activities are conducted with the participants, e.g. surveys, individual conferences, group seminars, monthly newsletter and hiring of prior participants as peer counselors.

The non-credit curriculum provides innovative topics and approaches to teaching which are highly personalized to: 1) increase academic motivation, 2) promote feelings of positive self worth, and 3) heighten the degree of personal responsibility which college students must assume.

For additional information about The Pre-College Social Development Program contact: Dora E. Hall-Mitchum
The Ohio State University
Columbus, Ohio 43210
Joe Blow is seeking to major in Business Administration at the university where he is enrolled. He is presently in University College, a non-degree unit where one takes basic prerequisites for intended majors; a student may stay in University College no more than two years; after that point they must be accepted into their choice of degree granting college, or face dismissal. Dismissal is almost certain if a student has been in University College longer than two years and has less than a 2.0 (C) average.

Joe has been in University College for one and one half years, and he has been unable to complete successfully the Algebra, Calculus, and Accounting required to enter the College of Administrative Science, and his cumulative average is 1.8. Tutors are available, but Joe insists he has no time to use them because he must work 20 hours weekly in order to help pay his tuition. (Additional financial assistance is not possible.) A look at Joe's high school transcript, indicates that he made a D in Algebra; C in Geometry; and a D in Economics. Joe reports that he could have performed better in Algebra, but he had four different Algebra teachers within one year.

Joe's present counselor has suggested that he look at some alternative majors, but he refuses to do so saying (1) "My parents expect me to major in Business at this University," (2) "Business Administration is where the jobs are," and (3) "Since I have taken the courses (Algebra and Calculus twice before) this time I will be successful."

Joe's transcript shows that he consistently received B's in his composition and creative writing courses. When asked if he ever considered majoring in English, Communications or Journalism, Joe says yes but he dismissed the idea because "you can't find jobs in those areas."

Joe's counselor also asked him what he wants most from a job: money, status, the opportunity to use his talents, to help other people. He indicates the opportunity to use his talents is most important to him, then money and status.

The groups were then asked to discuss questions.
QUESTIONS

1. What is Joe's present goal?
2. What are his strengths that are related to this goal?
3. What are his weaknesses related to his goal?
4. What part should his values play in choosing his goal?
5. What do you see as Joe's biggest problem?
6. What are the forces for and the forces against Joe achieving his goal? (Complete the Self Analysis Sheet when answering this question.)
7. What are Joe's alternatives?
8. Introduce alternatives as new goals and repeat the above steps.
QUESTIONS

1. Was _______________ your first career goal?
2. If not, what was?
3. Why did you change your career goal?
4. Or, what were the forces against your achieving the goal?
5. What were the forces for your achieving your subsequent goal?
6. Are you satisfied with your present occupation? Why?
**MODIFIED FORCE FIELD**

**SHEET II**

**SELF ANALYSIS**

<table>
<thead>
<tr>
<th>Goal:</th>
<th>Forces for Goal:</th>
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<tbody>
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<table>
<thead>
<tr>
<th>Problem:</th>
<th>Forces against Goal:</th>
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<table>
<thead>
<tr>
<th>Alternatives:</th>
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</table>
APPENDIX E

RESEARCH ON DEVELOPMENTAL EDUCATION PROGRAMS
APPENDIX

Research on Developmental Education Programs

The researcher's investigation of the findings of the College Entrance Examination Board's Study of the Composition and Effectiveness of the Compensatory Education (1972) or also called, Developmental Education Programs, of 180 community colleges in the midwest, those results are applicable to the different types of programs and their effectiveness as four-year institutions.

According to the survey results, approximately 92 per cent of the day enrolled students were white, 6.8 per cent were Black, and less than 1 per cent were Spanish American and American Indians. Those surveyed students either participated or had the opportunity to benefit from three categories of activities. They are listed and defined as follows:

1. **Academic Skills Services** - Provisions for students to receive one or more educational services as they have need. These services may or may not be grouped into one particular campus center.

2. **Developmental Programs** - Specially organized programs that include a range of educational services for students formally enrolled in those programs. (See Appendix for detailed summary of nine programs.)
3. **Remedial Courses** - Preparatory courses taken within the department structure.

Minority students were found to be more highly represented in developmental education activities than in the student body as a whole but the percentage varied according to the program type. For example, nearly one student in five who has enrolled in a formal developmental program is a minority student, whereas for remedial courses, about one student in nine is a member of a minority program.

Unlike remedial courses, formal developmental programs and special academic skill services are relatively new additions to the surveyed college group. About 80 per cent of all institutions report the use of remedial courses with most indicating such courses have been employed for more than three years. Academic skills services on the other hand, are in operation in just under 50 per cent of all colleges and in over two-thirds of those cases, the programs are less than three years old.

The report continued by emphasizing that the primary function of remedial courses is to give academic assistance to students in order that they may be better prepared to take certain regular college courses. There are multiple functions of academic skill services and formal developmental programs. The latter functions vary among institutions. The most frequently noted function of academic skill services is providing tutorial help in basic skills, but different
surveyed institutions also indicated that their services included tutorial help in specific courses and academic and nonacademic counseling. Very few skills center programs offered courses. Their major functions are academic and nonacademic counseling with a primary emphasis toward tutorial assistance to disadvantaged students.

An interesting factor that may contribute to the effectiveness or lack of effectiveness of the remedial and academic skills programs is the quality of the faculty and other support personnel who teach and counsel in those programs. Roueche (1968) noted that the remedial course teacher was typically younger and less experienced than other faculty, was normally assigned to this position and obtained his learning about disadvantaged or remedial students and remedial instruction through on-the-job training.

Developmental programs were assessed to the most comprehensive in facilitating the matriculation of minority and other disadvantaged students through those surveyed institutions. A major emphasis of these programs was geared toward providing academic and nonacademic counseling; over one-half of surveyed institutions offered complete curriculums and 95 per cent of those enrolled students took developmental courses in their first term in college.

Basic skills mastery were the most attentively attended programmatic aspect which 85 per cent of those surveyed institutions determined as their major program emphasis.
Students additionally are provided personal counseling and tutoring assistance, over three-fourths of the student participants in those programs received counseling at least once monthly.

While not exhaustive the preceding review of literature has attempted to provide the reader with an analysis of the writings and findings of other authors about the complex and encompassing aspects of all the issues related to the selection and matriculation of disadvantaged and minority students to institutions of higher learning. The importance of this study is perhaps best illustrated by the fact that there is a lack of compiled data that were available to the researcher for use in ascertaining those variables germane to this study.

The research feels that educators must confront sensitively and objectively the realities of social change, ascertain needs of a diversified and unique population and recognize their implication for higher education. Growth and learning must evolve from our mistakes and result in the farsightedness to utilize our best educational resources in the complete and absolute elimination of the waste of human resources.

In regards to compensatory education the literature shows that a number of different programs are employed by different institutions geared primarily to provide counseling, tutorial and academic advising for minority students who
meet their admissions criterion. Brief academic skills programs and remedial programs are included in the Appendix.

**Thornton Community College**

Harvey, Illinois

Program: General Studies Program

Established in 1968, the General Studies Program provides courses in English, social science, natural science and tutorial assistance in basic skills and the above courses, academic and nonacademic counseling. Enrollment in the program is voluntary and has recently averaged about four per cent of the total student body. In fall 1970 Black students comprised about nine per cent of the General Studies Program enrollment. The director reports 95 per cent of those enrolled in 1969 went into a program leading to a bachelor's degree or into a vocational studies program. As of June, 1970, 67 per cent of the 182 students who had enrolled in the program during the four semesters of the 1968-70 had continued in some college program. Depending on the subject area, two-thirds to three-fourths of the students successfully pass regular college courses after completing General Studies Program courses.

**College of Lake County**

Grayslake, Illinois

Program: Developmental Services
Developmental Services began in fall 1969 when College of Lake County opened. The program offers individualized tutorial assistance in basic study skills and specific courses combined with academic and nonacademic counseling. The staff includes four full time, credentialed instructors who are trained for developmental education. Instructional materials are developed primarily from course textbooks. Housed in an instructional laboratory and a few offices, the program enrolled 284 students in fall 1969 and 335 students in fall 1970. Although follow-up studies have not been conducted, the director reports very favorable responses from students, faculty and administration and increasing interest in the community.

College of DuPage
Glen Ellyn, Illinois
Program: Developmental Learning Laboratory

In 1968 College of DuPage reorganized its program of developmental and remedial courses and established the Developmental Learning Laboratory. This program provides individualized instruction in basic skills and specific classes as well as small group workshops for interpersonal relations and attitude development. During fall 1970, the Laboratory enrolled 600 students on a voluntary basis and employed a staff of nine full time and twenty-one part time personnel. The director reports that individual pre-test
and post-test studies show, over an eleven week quarter, a 3½ grade level equivalent average increase in reading and an average gain in speed of almost 200 words per minute. It was further reported that response from the faculty has been very positive and future plans include the development of individualized courses in English, Spanish, math, political science and psychology to be taught in the laboratory for credit in the various departments.

Macomb County Community College
Warren, Michigan
Program: Educational and Cultural Development

Educational and Cultural Development was established in 1965 to assist the "latent terminal" student who aspires to transfer from a community college but does not. The objectives of the program are to "retain the student long enough to help him achieve academic success or decide on a change in vocational-educational goals and to influence change in students' values and personality development toward greater maturity." The program offers a two semester package of four transferable, college-level courses in humanities, natural science, communications and social science plus a guidance seminar for the development of self-understanding and interpersonal skills. Block scheduled so that the groups of students take all their courses together, classes are team taught by faculty oriented to students needs and lifestyles.
The program enrolls primarily full time day, liberal arts, transfer applicants with below C high school averages who score between the tenth and fifty-eighth percentile on the SCAT. During fall 1970, 700 students and a staff of thirty full time and twenty-five part time personnel (mostly teachers) participated in the program. The director reports that in a recent study the proportion of Educational and Cultural Development students graduating from Macomb was about three times as high as for the regular student body.
APPENDIX F

A SPECIAL REPORT ON
THE FRESHMAN FOUNDATION PROGRAM
APPENDIX

A SPECIAL REPORT
ON
THE FRESHMAN FOUNDATION PROGRAM

I. INTRODUCTION AND HISTORY

As a direct result of student demonstrations in the spring of 1970, the University authorized the recruitment of one hundred Black students and created the position of Vice Provost for Minority Affairs. This initial recruitment effort, dubbed 'Project 100,' was an ad hoc, unorganized drive in August, 1970 to enroll the authorized 100 students for the Autumn Quarter. No provisions were made for any supportive services except financial aid.

Thus, one of the first duties of the new Vice Provost for Minority Affairs, Dr. William J. Holloway, was to establish an academic support system for the 117 students enrolled. As a result of his recommendations, the University:

A. Hired Robert Harvey, a full-time director for Project 100 in University College.

B. Created an office in University College to provide supportive services (counseling, tutorial, etc.) to Project 100 students. This office has evolved into the Office of Developmental Education, which now
provides a comprehensive program to help solve the academic, social and financial problems of minority students at OSU.

C. Appointed (Dr. William H. Watson, 1971) Associate Dean of University College and Director of the Office of Developmental Education.

Concurrent with these activities, Dr. Holloway began planning for the coming years. A proposal was developed and submitted to the Department of Health, Education and Welfare for a Supportive Services Program for Disadvantaged Students which would provide financial, academic and social supportive services to minority students recruited into OSU. The Department of Health, Education and Welfare guidelines called for the retention of students for two years regardless of their academic standing. The proposal was not funded by the Department of Health, Education and Welfare, but Provost James Robinson committed University funds for the program.

To facilitate implementation, one staff member each from Admissions and Financial Aids were assigned part-time to the Office of Minority Affairs, the former to serve as a recruiter, and the latter for financial aid packaging.

Recruitment efforts for FFP 1971 were started immediately, and 471 students were enrolled in the program for Autumn Quarter, 1971. A decision was made to award financial aid, based on need to all FFP students, utilizing a three-fourths grant, one-fourth self-help (loan or work/study)
formula. The grant portion includes all federal, state and private non-repayable financial aid a student may receive. The following chart lists the number of students by program year and the total financial aid awarded.

**CHART I: ENROLLMENT AND FINANCIAL AID BY PROGRAM**

<table>
<thead>
<tr>
<th>Program</th>
<th>Number Enrolled</th>
<th>Total Financial Aid (All sources)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project 100</td>
<td>117</td>
<td>$657,766</td>
</tr>
<tr>
<td>FFP 1971</td>
<td>471</td>
<td>2,422,484</td>
</tr>
<tr>
<td>FFP 1972</td>
<td>406</td>
<td>1,716,531</td>
</tr>
<tr>
<td>FFP 1973</td>
<td>416</td>
<td>1,613,218</td>
</tr>
<tr>
<td>FFP 1974</td>
<td>509</td>
<td>1,454,739</td>
</tr>
<tr>
<td>FFP 1975</td>
<td>419</td>
<td>666,310</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>2,338</strong></td>
<td><strong>$8,531,048</strong></td>
</tr>
</tbody>
</table>

**NOTE:** Total financial aid includes all assistance received by students in each program for the entire time they have been enrolled.

The design of the Freshman Foundation Program has been altered from time to time since the program's inception to help facilitate smooth operation and maximize program success potential. Included in these alterations were:

A. The establishment of policy guidelines, implemented in 1975, which:

1. Places recruitment emphasis on students with a 2.5 GPA or above and enrolled in a college preparatory curriculum.
2. Requires adherence to all university policies
regarding application deadlines (admission and financial aid) academic performance and number of hours taken.

B. The creation of an FFP Selection Committee composed of two students, two OMA staff, two ODE staff and one financial aids staff.

C. The establishment of an orientation session for FFP students during regularly scheduled orientation periods.

These alterations/additions and others have helped to increase the overall quality of the Freshman Foundation Program. The Freshman Foundation Program at OSU has become one of the largest and most successful programs of its type in the nation. Many colleges and universities have made visits to OSU to observe our Freshman Foundation Program, and have modeled their programs after FFP.

Institutions which have observed FFP include: Purdue University, University of Kentucky, University of Michigan, University of North Carolina, and many schools within the state of Ohio.

The Freshman Foundation Program was designed to serve all minorities. In this vein, the following chart presents the racial composition of each program.
II. TEST SCORES AND HIGH SCHOOL CLASS RANK OF FFP STUDENTS BY PROGRAM

The ACT scores and high school class standings of FFP students are presented on the following chart by program year. Please note that the largest number of students were in the upper third of their graduating class in every program except Project 100, but the smallest number in each program had ACT scores above 21. This is to say that there appears to be little or no correlation between high ACT scores and minority student academic performance.
## FRESHMAN FOUNDATION PROGRAM
### ACT SCORES AND RANK

<table>
<thead>
<tr>
<th>ACT SCORES</th>
<th>PROJECT 100</th>
<th>FFP 1971</th>
<th>FFP 1972</th>
<th>FFP 1973</th>
<th>FFP 1974</th>
<th>FFP 1975</th>
<th>TOTAL ALL PROGRAMS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Over 26</td>
<td>0</td>
<td>0.00</td>
<td>13</td>
<td>2.76</td>
<td>10</td>
<td>2.46</td>
<td>11</td>
</tr>
<tr>
<td>Over 21</td>
<td>3</td>
<td>2.56</td>
<td>58</td>
<td>12.31</td>
<td>43</td>
<td>10.59</td>
<td>35</td>
</tr>
<tr>
<td>Over 15</td>
<td>17</td>
<td>14.52</td>
<td>107</td>
<td>22.71</td>
<td>85</td>
<td>20.93</td>
<td>62</td>
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<tr>
<td>Under 15</td>
<td>19</td>
<td>16.23</td>
<td>91</td>
<td>19.32</td>
<td>90</td>
<td>22.16</td>
<td>92</td>
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<tr>
<td>Under 12</td>
<td>51</td>
<td>43.58</td>
<td>169</td>
<td>35.66</td>
<td>169</td>
<td>41.62</td>
<td>171</td>
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<tr>
<td>Other*</td>
<td>27</td>
<td>23.11</td>
<td>34</td>
<td>7.24</td>
<td>9</td>
<td>2.24</td>
<td>25</td>
</tr>
<tr>
<td>TOTALS</td>
<td>117</td>
<td>100%</td>
<td>471</td>
<td>100%</td>
<td>406</td>
<td>100%</td>
<td>416</td>
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</table>

### CLASS RANK

<table>
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<tr>
<th>CLASS RANK</th>
<th>PROJECT 100</th>
<th>FFP 1971</th>
<th>FFP 1972</th>
<th>FFP 1973</th>
<th>FFP 1974</th>
<th>FFP 1975</th>
<th>TOTAL ALL PROGRAMS</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
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<tr>
<td>Upper Third</td>
<td>28</td>
<td>24.0</td>
<td>237</td>
<td>50.3</td>
<td>208</td>
<td>51.2</td>
<td>188</td>
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<tr>
<td>Middle Third</td>
<td>32</td>
<td>27.0</td>
<td>134</td>
<td>25.4</td>
<td>130</td>
<td>32.0</td>
<td>136</td>
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<tr>
<td>Lower Third</td>
<td>21</td>
<td>18.0</td>
<td>52</td>
<td>11.0</td>
<td>57</td>
<td>14.0</td>
<td>62</td>
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<tr>
<td>Unknown</td>
<td>36</td>
<td>31.9</td>
<td>48</td>
<td>10.3</td>
<td>31</td>
<td>2.8</td>
<td>30</td>
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<tr>
<td>TOTALS</td>
<td>117</td>
<td>100%</td>
<td>471</td>
<td>100%</td>
<td>406</td>
<td>100%</td>
<td>416</td>
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</table>

*Other includes transfers, GED's, New Careers Students, ACT Waived and test scores not available.
III. ENROLLMENT OF FFP STUDENTS

With the exception of Project 100, the enrollment goal for all Freshman Foundation Programs listed has been 400 students. This goal was exceeded in every year. The large differences between the number authorized and the number enrolled in 1971 and 1974 are due to an overestimation of the anticipated enrollment percentage from the number of applications.

Attrition has been defined as those students who are lost to higher education forever. To define it differently causes great concern in delineating what is a "dropout." The major definitional problem is the temporariness of any classification of a student as a dropout. It has been our observation that many of the students participating in the Freshman Foundation Program have been "stopouts" rather than dropouts.

Thus, actual attrition is virtually impossible to determine for this type of program. An attempt was made to determine what happened to those FFP students who left OSU and why they left. At this writing, the response to questionnaires has not been large enough to accurately predict a trend. Therefore, the following data are presented only as an indication of the current status of FFP students who have left OSU.
POST CARD QUESTIONNAIRE RESPONSES

Nearly 900 letters with enclosed post cards (see attached) were sent to Freshman Foundation Program students who have left OSU since the inception of the program. To date, 104 have been returned because of faulty address (moved, no forwarding, not at this address, etc.), and seventy-one have completed the cards and returned them. The following compilation gives a synopsis of the answers received.

A. REASON FOR LEAVING OSU

<table>
<thead>
<tr>
<th>Reason</th>
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</thead>
<tbody>
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<td>Personal</td>
<td>23</td>
<td>32.4%</td>
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<tr>
<td>Financial</td>
<td>10</td>
<td>14.1%</td>
</tr>
<tr>
<td>Transfer</td>
<td>16</td>
<td>22.5%</td>
</tr>
<tr>
<td>Employment</td>
<td>5</td>
<td>7.0%</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>11.3%</td>
</tr>
<tr>
<td>Graduated</td>
<td>3</td>
<td>4.2%</td>
</tr>
<tr>
<td>Still at OSU</td>
<td>6</td>
<td>8.5%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>71</td>
<td>100.0%</td>
</tr>
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</table>

B. ENROLLED IN ANOTHER INSTITUTION (62 Responses)

<table>
<thead>
<tr>
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</tr>
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<tbody>
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<td>34</td>
<td>54.8%</td>
</tr>
<tr>
<td>No</td>
<td>28</td>
<td>45.2%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>62</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

C. WAS STAY AT OSU BENEFICIAL (66 Responses)

<table>
<thead>
<tr>
<th>Status</th>
<th>No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>58</td>
<td>87.9%</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>12.1%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>66</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

D. INTEND TO COMPLETE COLLEGE (64 Responses)

<table>
<thead>
<tr>
<th>Status</th>
<th>No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>60</td>
<td>36.7%</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>63.3%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>64</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Note: The response has not been large enough to accurately predict whether or not the answers presented above are valid.
IV. OCCUPATION AND LOCATIONS OF FFP GRADUATES

In efforts to obtain accurate data on the current status of FFP students who have graduated, a questionnaire was mailed to all graduates and the list of graduates was reviewed by staff members from the Office of Minority Affairs and the Office of Developmental Education. The following information was gained from these efforts.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Professional/Managerial: Includes teachers, nurses, managers of programs and other administrative positions</td>
<td>45</td>
</tr>
<tr>
<td>B. Semi-Professional (skilled): Includes non-supervisory and/or technical positions</td>
<td>3</td>
</tr>
<tr>
<td>C. Non-Skilled (laborer)</td>
<td>2</td>
</tr>
<tr>
<td>D. Graduate/Professional School: Students are currently pursuing higher degree</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
</tr>
</tbody>
</table>

Occupations of FFP graduates are varied as one would expect. Listed below are the occupational titles of employed graduates.

- Staff Nurse
- Cost Accountant
- Field Director (Girl Scouts)
- Home-Office Coordinator (Welfare Department)
- Recreation Supervisor
- Manager, Halfway House

- Personnel Administrator
- Higher Education Administrator
- Financial Analyst
- Program Specialist (Ohio Office of Minority Business Enterprise)
- Program Director (YWCA)
- Dental Hygienist
Child Care Worker
Playground Leader
Veterinarian Helper

Teacher
Sales
Factory Worker

Information on the locations of FFP graduates is not available at this time. Indications are that the great majority of FFP graduates are working within the state of Ohio.
APPENDIX G

RECOMMENDATIONS FOR HELPING STUDENTS BECOME SUCCESSFUL ACADEMICALLY AND FOR HELPING THEM GAIN ENTRANCE INTO THEIR DESIRED ACADEMIC MAJOR
APPENDIX

RECOMMENDATIONS FOR HELPING STUDENTS BECOME SUCCESSFUL ACADEMICALLY AND FOR HELPING THEM GAIN ENTRANCE INTO THEIR DESIRED ACADEMIC MAJOR

The Pre College Social Development students' return to their initial choice of academic major is evidence that they wanted to succeed in this area; therefore, I recommend the following:

1. that the Pre College Social Development Program be changed to a Pre Academic and Social Program

2. that the program be an 8 - 10 week summer program the students enter almost immediately upon graduating from high school

3. that the components of the program include:
   a. a program to develop a sense of personal and interpersonal competence
   b. small study skills sessions
   c. exposure to role models in sciences, particularly health fields
   d. career exploration classes
   e. feedback to the high schools and the university
   f. related work study experiences

Developing a sense of personal and interpersonal competence is defined here as (1) the ability on the part of the student to believe that he/she can succeed and (2) that he/she can approach faculty and administrators with relative
ease and assertiveness. In the follow up interviews with students, it was obvious that many expected to fail and that they were fearful of approaching faculty to discuss their particular academic situations; those who did tended to be passive (not asking professors what they wanted to know) or aggressive (being hostile and abrasive).

The interpersonal competence approach should be handled by counselors skilled in such techniques as relaxation therapy and assertiveness training. The relaxation therapy is needed very much by Pre College Social Development Students as most were tense whenever they discussed their academic situations with the counselor-researcher.

The study skills sessions should focus on the development generally of consistent student study skills in the areas of note taking, writing, oral presentation, practice in library skills, and in particular the mastery of conceptual skills in the natural sciences and mathematics. Learning theory tells us that specific content learned and forgotten is relearned more rapidly than the initial learning; consequently, course work should reteach the basic skills in mathematics and the natural sciences to insure that students have a foundation of knowledge in those areas on which to build. Likewise, the courses should contain material specific to the students' academic majors. Counselors ideally should work closely with the classroom instructor. Their role in
this context would be to insure that students are properly advised upon formal entry to the university in fall quarter; proper advising would consist of making sure that students take courses in the proper sequence according to the students' individual background and abilities, and that they avoid heavy loads. In particular, it is inadvisable for students to take more than one heavy science or mathematics class each quarter during their freshman year.

Since the students enter the university with less academic preparation (as evidenced by high school courses taken, freshmen GPA and ACT scores) daily study skills sessions are particularly important to insure that students receive as much extra support and tutoring as they need. Since the preparation of the students in mathematics and natural science is the weakest, the Project Director of the Pre Academic Social Development Program should communicate this to the appropriate public and private high school administrations, counselors, teachers, parents and students. Simultaneously, feedback ought to be given to the appropriate university faculty and administrators concerning the effectiveness of various teaching approaches and the restructuring of its basic skills courses in mathematics and the natural sciences.

Since one goal of the Pre Academic Social Development Program would be to increase students information about careers, students should be counseled about careers and
their relationship to their values, interests, and abilities.

Needless to say, the counselor should be the catalyst for helping students get the personal contact with people who care about their progress and who can act as role models. The importance of role models cannot be overemphasized. All first and second year university students need encouragement, and they need to see people like themselves in the career roles the students aspire to. Minority students are unlikely to see these models upon formal entry to the university and thereafter, so it is important that minority role models in the health areas and in engineering and business administration interact with the students during this summer experience. Having minority doctors, nurses, pharmacists, engineers and business administration types interact with the students would be a powerful motivator to be exposed to.

Since many of the developmental education students must work from 10-20 hours per week as part of their financial aid package, it makes sense to provide jobs for them in their areas of interests, if at all possible. The field exposure that students could get the first or second quarter they are on the campus could give them first hand career exploration.

In institutions like the University of Washington, the University of Cincinnati, and some two year college programs, a commitment has been shown to providing remediation for minority students; consequently, they have had impressive
successes of minority students in the health areas and in engineering and business administration fields. Development of a pool of successful minority students who tenaciously aspire to the above fields, and who possess the skills can halt the revolving door they find themselves forced to use, after being "openly admitted."
LIST OF REFERENCES


Austin, A. W. Effect of different college environments on the vocational choice of high aptitude students. Journal of Counseling Psychology, 12, 28-34.


Vineyard, E. E. An independence study of choice of science or non science major as related to ability and interest test scores. Science Education, March 1959, 8, 125-129.


Williams, C. M. Occupational choice of male graduate students as related to values and personality: A test of Holland's theory. Journal of Vocational Behavior, 1972, 2, 39-46.


Winkie, J. D. Stepping Stones or Stumbling Blocks: Basic Decisions in College Life. A publication of the Russell B. Stearns Study, Northeastern University, Boston, Massachusetts.
