A STUDY OF PERSONALITY DIFFERENCES OF THE VOCATIONALLY UNDECIDED STUDENT AND THE EFFECT OF VOCATIONAL COUNSELING

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CHAPTER I

INTRODUCTION

Introduction to the Study

As college enrollments increase, so too, the student personnel services in colleges and universities continue to grow in order to offer those services designed to aid the student in completion of his desired program of study. Involved in this growth is the counseling service. It has, as one of its objectives, to offer vocational counseling to students in order to aid them in their choice of vocation.

Vocational counseling in higher education is available to students wishing to change from one major area of study to another, but it also is available to those students entering a college or university who are undecided about their future vocations. It is this latter group with whom this study is concerned.

One of the intents in this study was to present the uniqueness of the vocationally undecided student. To provide understanding of the undecided student, various theories of occupational choice relevant to this student are presented. Also, much of the research conducted with the undecided student is reported. In addition, an important

aspect of this study was the information obtained from studying the effects of counseling on the undecided student.

A study providing the information as to whether vocational counseling is successful could be easily conducted by simply noting the number of students who would make a choice concerning their vocation after counseling compared to the number of students who choose, although they have not undergone formal counseling. That answer alone would be somewhat valuable to a counseling service, but it would ignore many of the processes operating that help establish vocational choice in certain individuals, but not in others.

In order to have a better understanding of the undecided student, research was conducted to gain information on his uniqueness. Previous research presents some of the characteristics common to this group of students, but for the most part these studies have concerned themselves with researching only one or possibly two unique personality variables. Other studies have concerned themselves with several variables, yet in the final analysis have produced only one variable as unique to the undecided student. This study had as its underlying framework to research the uniqueness of the undecided student by studying all the personality variables previously found to be different, but studying them all together. Therefore, it was the general intent of this research to provide a more comprehensive undertaking and understanding.

Baird (1969) points up that most of the studies exploring the differences of the undecided student are few and fragmentary. Not only are they few and fragmentary, but they also deal with academic differences, (e.g., GPA, educational ability and achievement). The differences of the undecided student studied in this research were in demographic variables, but for the most part were in terms of personality variables.

Also important as a purpose of this research, was to note the effects of vocational counseling with undecided students. While studies by Berdie (1954) and Kohout and Rothney (1964) were conducted testing the effects of vocational counseling, little has been done to measure personality variable change during and after vocational counseling.

Statement of the Problem

The purpose of this study was to contrast several personality variables of vocationally undecided college freshmen with those of vocationally decided college freshmen. Also contrasted were general background variables that can affect vocational decision making. This study was an attempt to see ways in which the undecided student was similar to and different from the decided student.

In addition to the above, another purpose of the study was to research the effects of vocational counseling upon the undecided student by studying the personality variables after counseling.

It should be noted that the purpose of this research was not to provide such information on the undecided as would then be utilized to force all incoming freshmen students who are undecided to undergo counseling in order to make them decided. Such forcing of choice should not be employed because as Tiedeman (1961) and Super (1957) point out, vocational choice is viewed in stages of continuous development and it is important to note that everyone does not reach the same point at the same time. Forcing a vocational choice of incoming students may occur at a time in the stages of some individuals which would cause much more harm than good. Rather, the intended outcomes of this study were to provide information to make for more effective vocational counseling with those students who seek it.

Hypotheses

The hypotheses to be treated are many in number. In order to provide optimal clarity of these hypotheses, the following categorization has been adopted.

There are three categories of hypotheses:

a) There are four hypotheses that will refer to testing personality variables by the use of the semantic differential which was the personality instrument in this research.

b) There is one hypothesis that will refer to testing background variables. (There is only one because, unlike the other categories, there

will not be a pre- and post-testing since this information is constant and will not change.)

c) There are four hypotheses that will refer to testing the results of the Strong Vocational Interest Blank, which was the interest test in this research.

There will be no significant difference on measured intellectual orientation, avoidance of risk, desire for security, dependence needs, passiveness in social interaction, withdrawal from social interaction, and self esteem between:

1) the experimental, decided and control first semester freshmen students.
2) the decided and undecided vocationally counseled students.
3) the decided and undecided students of the control and decided groups after final testing.
4) the uncounseled decided freshmen students and the vocationally counseled decided freshmen students.

There will be no significant difference on American College Test scores, high school grades, size of high school, extra curricular activities in high school, extra curricular activity plans in college, size of town of residence, parents' occupational level, parents' educational level, access to a high school counselor, and frequency of seeing a high school counselor for vocational counseling between:

5) the decided and undecided first semester freshmen students.

There will be no significant difference on scores from the Strong Vocational Interest Blank of academic achievement, age related interests, masculinity-femininity II, occupational introversion-extroversion, occupational level, like percent responses, indifferent percent responses, and dislike percent responses between:

6) the experimental and decided first semester freshmen students.
7) the decided and undecided vocationally counseled students.
8) the decided and undecided students of the decided group after final testing.
9) the uncounseled decided freshmen students and the vocationally counseled decided freshmen students.

Significance of the Study

The results of this study should provide useful information to university counseling centers. While the data provided from this research will point out the effectiveness on counseling the vocationally undecided student, it more importantly will provide information concerning the ways the undecided students differ from those who have made a vocational choice. This information can be then used in

counseling those students who come to a counseling center for aid in vocational decision making.

The need in this area is obvious in a statement by Menninger (1964) as he relates the success or failure of individuals as they choose new occupations. He further relates how the college personnel worker plays a responsible part in the success or failure of the individual as he writes:

> . . . All who serve in these capacities and in these settings hold awesome responsibility for assisting maturing youth and adults with their problems of vocational planning and with search for a satisfying adjustment to occupational life. (1964: xvii)

Also significant is this study's support and/or rejection of the limited number of studies already done in this area with an eye to supplementing the literature.

Definition of Terms

The following are definitions and clarifications of terms as they are applied throughout this study.

Undecided Student. This term refers to students who upon entering the University were undecided or unsure in terms of their future vocational plans as indicated on the research questionnaire.

Decided Student. These were the students entering the University at the same time as the undecided students, but, who made a definite choice as to their future vocational plans.

Control Group. This was a group of undecided students who received no counseling and who were compared to the

undecided group on the personality instrument both at the beginning and the end of the research.

Vocational Counseling. Vocational counseling in this study is a form of individual counseling that has as its goal to aid the individual to understand himself by helping him in assessing his aptitudes and interests. Then it is intended to help him to use this understanding in making a choice of a vocational area.

Formal Counseling. This is the vocational counseling that is done by a person trained in counseling techniques and methods and who is operating in a counseling center; used in this study to delineate between counseling by a qualified counselor and the advice giving or informal counseling done by individuals not trained in counseling.

Personality Traits. This term identifies the trait of personality of the individual which was assessed by the personality instrument which was the semantic differential. The traits assessed were intellectual orientation, avoidance of risk, desire for security, dependence needs, passiveness in social interaction, withdrawal from social interaction, and self esteem.

Intellectual Orientation. The person with a high personality trait of intellectual orientation emphasizes learning and education as an aid to general mental development rather than development for a particular skill or vocation. (Only this personality trait is defined since it is not self explanatory.)

Interest Test. The interest test in this study was the Strong Vocational Interest Blank.

GPA. This is an abbreviation for grade point average. In this study it is based on the 4.0 system used at Oklahoma State University.

Head of the Household. This is the parent in the subject's family who contributes the majority of support. In comparing the occupational level and educational level of the parents, the head of the household will be the one considered as indicative of the general family level.

Occupational Level. This is the level of occupation the head of the household possesses and which is ranked high, middle or low socio-economically in accord with system as described in a study by Akers (1969). (For further information on this study and how it was used specifically for occupational level, see Chapter III, "Self Report Questionnaire.")

Limitations of the Study

The subjects of this study were full-time freshmen students in the College of Arts and Sciences at Oklahoma State University and therefore the results of this study should be used cautiously when generalized to a population different in age, year in school, college or different in any significant way from the study sample. Also, it should be noted that the students counseled were asked to participate in

counseling and therefore may possibly be different from those who seek out counseling voluntarily.

A further limitation is the short period of time between counseling and retesting. It is possible that the effects of the counseling process may not appear until a later time.

Assumptions of the Study

It is necessary to assume that the entering freshmen undecided students are not different in any significant amount from undecided students at different educational year levels in the traits measured by this study. It must be assumed that the personality traits of the undecided subjects tested in this study are similar to the personality traits of other undecided students.

Another underlying assumption of this study is that the instrument used can measure the personality traits identified as different for the undecided student.

Organization of the Study

Chapter I has introduced the problem studied. This chapter has included the statement of the problem, the hypotheses, the significance of the study, the definitions of terms, and the delimitations of the study.

Chapter II will review the literature concerning the hypotheses tested.

Chapter III will describe the design of the study, the selection of the sample, the counseling used, and the

instruments used to measure personality traits, interest and background variables.

Chapter IV will contain a statistical analysis of the data. It will indicate the degree to which the hypotheses are found to be correct.

Chapter V will present a discussion of the results of this study and recommendations regarding future studies in this area.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

It is the purpose of this chapter to provide a review of literature in two major specific areas. The first area of this literature review relates studies that have been conducted in regard to assessing similarities and differences between vocationally undecided and decided college students. It is this section upon which the theoretical framework of this study has been built.

The second area of this literature review covers various theories of vocational choice. This portion is presented to provide understanding regarding how a choice of vocation occurs and to lend support to the testing of personality differences. It answers, theoretically, the question, "why?" regarding similarities and differences between decided and undecided students.

Studies of Similarities and Differences Between Undecided and Decided Students

As stated before, studies have been conducted dealing with differences between the decided and undecided student. As the number of these studies dealing with differences that

exist in the academic area increased, it was noted that few differences between the decided and undecided have been assessed.

Williamson (1937) used first year college students in one of the earliest studies dealing with the undecided student and found little relationship between grade point average and the fact that a student had or had not chosen a vocation.

Ashby, Wall and Osipow (1966) conducted research that provided support for Williamson's study. They tested entering college freshmen who were categorized into three groups; i.e., decided, undecided and tentative. Comparisons were possible through information provided by an academic abilities test, scholastic aptitude test scores, high school achievement and first term grade point average in college. They found no testable differences in academic performance or ability when comparing the decided with the undecided in the first year of college.

The preceding study was conducted with a sample from a large state university. Yet, its findings are in accord with those resulting from a study by Abel (1966) involving entering male freshmen at a small liberal arts college. Here the students were rated by judges to be either certain or uncertain regarding vocational plans and the groups were compared for differences in their first year's grade point average. Again, there was no statistical difference between the undecided and decided students' achievement records.

In a study centered around vocational indecision in male college freshmen at Stanford University, Lyon (1959) used 82 vocationally decided freshmen as opposed to 87 vocationally undecided freshmen in a comparison of their scores on the College Entrance Examination Board tests (CEEB). His results indicated there was no difference between the scores of the two groups of students.

Sharf (1967) later used another instrument of academic aptitude, the American College Test (ACT) Battery, to test for differences between the decided and undecided college freshman student in his first year of college study. Again, no difference was detected between the two groups as measured by this test of academic aptitude.

Therefore, previous research dealing with the academic achievement and aptitude differences of the decided and undecided student provides the information that there are no actual differences in these areas between the two groups.

This information, it should be remembered, is in the area of academic achievement and aptitude. It does not state that the two groups are alike in all ways. Further investigation into the research yields studies that establish differences in personality traits of the undecided student and which establish a base for the present study.

Baird (1967) compared a group of vocationally decided freshmen males and females to a group of vocationally undecided freshmen males and females to test for differences in goals in coming to college. With his instrument, which

allowed the respondent to rank his goals in coming to college, he found that the undecided students emphasized the goal of developing their minds and intellectual abilities as opposed to the decided students who choose the goal of professional training more frequently. This difference in their main goals for coming to college was significant at the .01 level of confidence. The undecided student was shown to have a stronger intellectual orientation, especially regarding his needs in coming to college.

Ziller (1957) postulated that vocational choice is a decision making situation in which risk plays a major role and therefore, "individual risk taking tendencies determine, in part, occupational choice." (1957, p. 61). To test this, he took 182 sophomore ROTC students, used a true-false examination which had been shown in previous research to have been valid, and compared the scores on the risk taking test for decided students and undecided students. The results were significantly different at the five per cent level of confidence and reflect that there is a relationship between risk taking tendency and vocational choice. The decided student takes a risk in vocational decision making, but the undecided student desires to be more secure.

In order to test a difference that exists between decided and undecided college students regarding need for security, Miller (1956) studied 180 college students. He separated these students into categories of decided, undecided and tentative, and these groups were compared on their

self rankings of personal needs or values in choosing a vocation. Their choices were security, career satisfaction, prestige and social rewards. The most significant difference in the study was that highest security scores were characteristic of the undecided group while the decided group chose social reward. This has some relationship to Ziller's (1957) study since security is involved in not taking a risk.

Therefore, it can be seen that differences between the decided and undecided college students have been noted by previous researchers, not in the area of academic achievement and aptitude, but rather in the areas of personality trait differences. Further research along the line of personality differences has been conducted and will be reported on in the following pages.

In a study referred to earlier by Ashby, Wall and Osipow (1966) in which no differences were found between the two groups in terms of grade point average, a difference was noted in the undecided student in a personality trait. Using the Bernreuter Personality Inventory, they found the undecided student to consistently have a higher rating on the dependency scale of this inventory. While significant at the .05 level of confidence, it was the only personality difference observable in the study.

Two more studies involving differences between decided and undecided students brought out information relating to social interaction. The first of these studies is partly in accordance with the study just previously mentioned. This

study, involving social interaction of the undecided student, conducted by Cordrey, (1965) studied the characteristics of 70 curricularly committed and 70 curricularly uncommitted, college, male freshmen between the ages of 17 and 21 and who were matched scholastically according to the School and College Ability Test. In a comparison of their scores on the California Psychological Inventory, it was found that the uncommitted student was lacking in self confidence, passive in interpersonal relationships and, in accord with the immediately foregoing study, dependent in social interaction.

The second of these studies reflecting on social interaction differences of the undecided student was one conducted by Watley (1965). He assessed personality differences similar to those found by Cordrey for the undecided. Watley used 547 male students who were entering freshmen at the University of Minnesota. Scores of social introversion obtained on the Minnesota Multiphasic Personality Inventory were found significantly higher at the .001 level of confidence for the undecided student than for the decided student. The undecided student is thus seen as an individual with a tendency to withdraw in social contacts, as well as being socially dependent as researched by Cordrey (1965).

The above reported studies, involving social interaction, seem to be similar in results to those of a study by Korman (1966) where it was found that self esteem and vocational choice were directly related. Korman used the Ghiselle Self Description Inventory as his measure of self

esteem. The subjects were upperclass students from two large state universities. It was hypothesized by Korman that the person's perceived needs are predictive of his vocational choice and this perception is directly influenced by his self esteem. Therefore, persons high in self esteem have perceptions that are highly predictive of their vocational choice and poor predictions are the rule for persons low in self esteem. Hence the latter group, feeling incongruence, is faulty regarding vocational decision making. These hypotheses were supported at the .05 level of confidence and thus show a relationship between self esteem and vocational choice.

Korman (1967) later expanded these findings by investigating the moderating function of self esteem in the relationship between self-perceived abilities and vocational choice. Again using the same instrument to measure self esteem, he used 126 lower division students at a large private university. It was hypothesized in this study that persons with high self esteem were more likely to perceive themselves as having high abilities in the required high ability areas for their chosen occupation than persons with low self esteem. This hypothesis was supported in the study at the .01 confidence level for males and .05 level for females. Thus, high self esteem persons tended to choose vocations in which they thought they would be competent. Again, an amount of incongruity is involved in accounting for a difference between decided and undecided students.

In summary, the literature indicates that while the undecided student does not differ significantly from the decided student in terms of academic achievement or ability, he does differ along the lines of various personality traits. Among these are: (a) intellectual orientation, (b) avoidance of risk taking, (c) desire for security, (d) dependence, (e) social interaction characterized by passivity and withdrawal, and (f) low self esteem. There appears to be relationship between these personality traits and being a vocationally undecided student. Therefore, if tested along these personality variables, the undecided student should prove to be significantly different from the decided student. It is this difference which lends a theoretical framework to this study.

Theories of Vocational Choice

In order to achieve consistency and congruence in this review of various theories of vocational choice, only those theories utilizing the individual's personality as a factor in vocational choice will be considered. While there are definite differences existing from one theory to another, there remains a basic similarity of the personality as central in each theory.

Roe's Theory

Roe (1962) has pointed out that occupations are sources of need satisfaction and are of extreme importance in our

present culture. The key to finding a satisfying vocation is understanding and awareness of one's interests.

In later writing, Roe and Siegleman (1964) state that interests are certainly a major factor in vocational choice. This statement is supported by their research which found considerable evidence that persons in the same occupational groups manifest congruent interests, that are often different from the interests of other people in other occupational groups.

In her theory of occupational choice, Roe (1964) considers the choice as a developmental process instead of a single choice point. It is a continuous lifelong development, constantly and very thoroughly involved with the individual's life as a whole. Interests, therefore are an aspect of the personality and as such have a place in any significant personality theory. Yet, general consensus on a personality theory is lacking and there is no general personality theory that deals with interests in a fashion meaningful for the study of occupations.

Roe and Siegleman (1964), in a revision of Roe's earlier theoretical concepts state five propositions that describe the origin of interests:

> Proposition 1. Genetic inheritance sets limits to the potential development of all characteristics, but the specificity of the genetic control and the extent and nature of the limitation are different for different characteristics.
>
> Proposition 2. The degrees and avenues of development of inherited characteristics are affected not only by experience unique to the individual, but

> also by all aspects of the general cultural background and the socio-economic position of the family.
>
> Proposition 3. The pattern of the development of interests, attitudes and other personality variables with relatively little or non specific genetic control is primarily determined by individual experiences through which involuntary attention becomes channeled in the particular directions.
>
> Proposition 4. The eventual pattern of psychic energies, in terms of attention directedness, is the major determinant of interests.
>
> Proposition 5. The intensity of these needs and of their satisfaction. . . and their organization are the major determinants of the degree of motivation that reaches expression in accomplishment. (1964, p. 5).

It can be noted that proposition three is explained in light of Maslow's theory of needs as related by Roe (1962) in her earlier writings. The hierarchy of the individual's needs determine behavior. The methods available to the individual and the strength of the needs will, in essence, determine which need becomes the strongest of the motivators. Also, in her writing with Siegelman, Roe refers to Maslow as she expands upon proposition three. She states:

> Needs, for which even minimum satisfaction is rarely achieved, will, if higher order, as used by Maslow, become expunged or will, if lower order, prevent the appearance of higher order needs and will become dominant and restricting motivators. (1964, p. 5).

In her theory of occupational choice, Roe (1956) has organized occupations by groups. There are eight groups and these have been further categorized on the basis of whether they are person oriented or non-person oriented. Since early experiences, especially those of an interpersonal relationship, are important to the propositions, these same

experiences are involved in the establishment of a pattern that is either person or non-person oriented. The occupational areas of Service, Business Contact, Organizations, General Culture, and Arts and Entertainment are groups identified as person oriented. Technology, Outdoor and Science are groups identified as non-person oriented.

In conclusion to her theory, it is Roe herself who states the importance of correct vocational decisions in relation to needs:

> In our society there is no single situation which is potentially so capable of giving some satisfaction at all levels of basic needs as is the occupation. (Roe, 1956, p. 31).

Super's Theory

One of the earlier proponents of vocational theory based on self concept tenets directly involved with a developmental theoretical structure was Super (1953). He stated that the self concept was implemented by the choosing of an occupation. He presents this in a succinct manner as follows:

> In expressing a vocational preference, a person puts into occupational terminology his idea of the kind of person he is; that in entering an occupation he seeks to implement a concept of himself; that in getting established in an occupation he achieves self actualization. The occupation thus makes possible the playing of a role appropriate to the self concept. (Super, 1963, p. 1).

In his writing, Super (1953) states his theory in ten propositions that in essence relate how each person is an individual with his own abilities, interests and personality and by these characteristics is qualified for a number of

occupations. Further, the processes of choosing and adjusting cause change in the self concept as a result of time and experience and thus the entire changing process can be noted in a series of life stages. With proper development and implementation of the self concept there is work satisfaction since the individual finds adequate outlets for his abilities, interests and personality traits.

Super, (1963) in later writings in conjunction with others, was able to consolidate some of the basic elements in his self concept theory of vocational development. These elements are assumed under three essential processes which are formation, translation and implementation of self concept.

It is the formation process upon which he elaborates most. In formation of the self concept, the individual starts with a stage of exploration that continues throughout his entire life. Just as an infant explores his body for the first time, so too the older worker, unable to compete with younger workers, tries out other methods of work in order to adapt. The necessity of exploration is brought to light by Super as he states, "The self is an object of exploration as it develops and changes; so, too, is the environment." (Super 1963, p. 12).

In the process of formation the individual will use self differentiation. Through this facet of self concept formation, the infant learns what he actually is and what he is not. Later the self concept is aided in this process by a direct comparison of self to others.

Through identification with others around him and role playing various vocational possibilities, the individual is able to refine his process of formation of the self concept even further. Yet, it is experiences in reality testing in this entire process that "strengthen or modify self concepts, and confirm or contradict the way in which they have been tentatively translated into an occupational role." (Super 1963, p. 13).

It is the stage of translation that is the second major process in the establishment of an individual's self concept. It proceeds in several ways, but chief among them are: (1) identifying with an adult which in turn leads to the child desiring to play the adult's occupational role, (2) direct experience in a role in which he is cast, perhaps by chance, which may lead to the discovery of a vocational translation of one's self concepts which is as congenial as it is unexpected, and (3) the understanding and awareness that he has certain attributes which are said to be important in a field of work and therefore leads him into an investigation of that area in which he finds he would be happy.

The third process of self concept establishment is implementation or actualizing of the self concept. It results from the two preceding processes as the professional training is entered or as education is completed and the individual moves from school to the world of work.

The foregoing elements of a self concept theory of vocational development are still not formulated as testable

hypotheses, but as their author states, judging by the research results, they permit the formulation of hypotheses which tend to stand up when tested. Also, they can be helpful to counselors in dealing with students in vocational decision making.

Ginzberg's Theory

One of the theories that strongly emphasizes developmental variables as they are associated with vocational choice is that of Ginzberg, Ginsburg, Axelrod and Herma (1951). This theory states that occupational choice is not a single decision but rather a series of decisions made over a minimum of six or seven years and in some instances as much as ten years or more. The decision making process is based on the experience contained within that time and up to the point of the decision and thus involves the future. Therefore, the process is regarded as basically irreversible since these things can only have been experienced once. In this developmental model, the end product of choice is generally a compromise since the choice involves the balancing of a series of personal subjective elements with the opportunities of reality.

The process of occupational decision making is divided by Ginzberg and his associates into three periods--fantasy, tentative and realistic choices. The fantasy period involves the child and his wish to be an adult. He sees himself as capable of doing anything he wishes to do vocationally. More structure towards reality is involved in

the tentative period as the choice has to be thought of in terms of probable future satisfaction instead of current satisfaction. It is in the final stage, realistic choice, that the translation of impulse and need into occupational choice becomes heavily involved with reality limitations and makes the translation difficult. He must actively work out a compromise between his wants and the possibilities available to him.

Segal's Theory

Previous researchers cited in this chapter have espoused a developmental approach. Another researcher, however, bases his vocational theory on personality development, but adds the dimension of psychoanalytic theory. This theorist is Segal (1953) who emphasizes that vocational choice for an individual is not developed on a chance basis, but is an extension of actual personality development operating within the confines of the environment and its opportunities.

The psychoanalytic theme applied to vocational choice theory can be seen as Segal elaborates on his theory in discussing vocational choice as a means of gratification of certain psychological needs. This gratification, according to Segal, is sensed by the individual in an unconscious way.

A further involvement of the psychoanalytic theme is reflected in Segal's (1961) writing as he presents a practical use of his theory in stating:

> Psychoanalytic concepts such as identification, the development of defense mechanisms and the theory of sublimation, can be used to gain insight

> into the personality characteristics of individuals who make a specific vocational choice. (Segal 1961, p. 202).

Utilizing this approach, the vocational counselor is able to learn from the patterns of those individuals who make a specific choice. The counselor can then generalize to other individuals in vocational counseling.

Holland's Theory

The vocational theory of Holland (1959) was developed as a remedy for two deficiencies in the field of vocational theory: that theories are either too broad or too specialized. Holland presents his theory to aleviate these deficiencies and says of his theory that it

> . . . is an attempt to delineate a theory of vocational choice which is comprehensive enough to integrate existing knowledge and at the same time sufficiently close to observables to stimulate further research. (1959, p. 35).

Holland (1963) restructured the vocabulary and terminology of his theory of vocational choice and proposed a number of personality orientations to life. Six models are included in the various personality orientations: realistic, intellectual, social, conventional, enterprising and artistic. An individual not only has the choice of one model, but has the possibility of combining all the models with a stronger emphasis on one or two of the models.

The person that develops, according to Holland (1966) is dependent on heredity and culture and personal forces which result from significant adults. As a result of the experiences he develops habitual methods of coping with tasks

presented by the physical and psychological environment, and this includes vocational situations. Therefore, if the individual resembles a social type as a result of his background, he is expected to seek out social occupations such as teaching or social work.

Thus, the individual, forced with the need to make an occupational choice, chooses the environment he feels he is able to become part of by virtue of the fact that in preceding experiences he was able to cope successfully in similar environments. He must know himself, the occupational area, and learn the various opportunities as well as social pressures and economic pressures since all lend themselves to a satisfying choice. Yet, in the theory's most important consideration, "The choice of a vocation is an expression of personality." (1966, p. 2).

Summary

In the first portion of this chapter, there was a review of the research conducted to find differences between undecided and decided college students. Studies dealing with academic aptitude and achievement found little difference between the two groups. The studies assessing differences in personality traits did, however, find traits unique to the undecided students. The undecided student, compared to the decided one, has higher intellectual orientation, avoids risk taking, desires security, is dependent, is socially passive and withdrawn and has low self esteem.

In reviewing the theories of vocational choice, a number of factors are apparent. Vocational choice is a part of personality, and as a part it is related to the self-concept. Also, it is a continuous and life long process. Finally, vocational choice is based upon the individual's awareness of self and personality. With all of these as the case, it is possible to both investigate and aid the process of vocational choice.

The review of literature on the preceding pages has covered information relevant to vocational decision making. Chapter III will provide the methods and procedures used in this present study to investigate vocational choice.

CHAPTER III

METHODOLOGY AND DESIGN

Procedure and Sample Selection

Initial Identification

There were three groups studied in this research; the experimental group, the control group and the decided group. All of the subjects in the research were freshmen students at Oklahoma State University for the academic year of 1969-70 and all were enrolled in the College of Arts and Sciences.

The experimental and control groups consisted of students who were vocationally undecided in their first semester at the University. The decided group consisted of freshmen students who indicated they were vocationally decided in their first semester at the University.

The methods used to select students for the groups are contained in the following sections.

Group Designations

The experimental and control group students were initially contacted in the Arts and Sciences orientation class in October, 1969. Students in that course who were undecided on a vocation were asked to meet for a brief group discussion about how the University Counseling Service could

be of help to them. A presentation was made to them regarding vocational counseling. It was explained to them that a program of vocational counseling, including testing, was available to them free of charge if they chose to participate and would retake the tests again toward the end of the Spring semester. To provide extra incentive, those who would participate were told that they were released from the orientation class on the day when the content area was on selection of occupations since the points covered in that class were covered also by the counselors in the vocational counseling sessions.

All of those students interested in participating in the vocational counseling were asked to complete a questionnaire (See Appendix A). The questionnaire provided basic background information such as permanent address, age, sex, education and occupational level of parents, involvement with vocational counseling in high school, and to what degree they were decided or undecided vocationally. Anyone indicating he was decided vocationally was not used in the experimental or control groups.

The Experimental Group. All of the questionnaires completed by interested students who were undecided on a vocation were grouped together and shuffled. Then forty-five questionnaires were randomly selected. The students who completed these forty-five questionnaires were the experimental group.

The experimental group was contacted by letter and given a choice of three evenings to attend a testing session that would begin the first phase of the vocational counseling. In the testing session they were administered the two tests used as instruments in the study. It was explained to them that when their tests were scored they would be contacted by letter and told who their counselor would be and how to make an appointment.

Forty-five students in the experimental group completed counseling. In April, 1970, they were contacted by letter to make an appointment for one of three evenings listed to retake the tests as they had agreed to do. When only approximately fifty percent responded to the retesting, a second letter was sent out stressing the importance of the retesting and finally individual phone calls were made to the nonrespondents. Due to attrition from the University, four participants did not take the retesting. Ten other students did not return for the retesting for reasons unknown to the writer. (See Chapter IV for a comparison of these fourteen students with the remainder of the experimental group.) After the final testing, therefore, there were only thirty-one of the experimental group remaining.

When the experimental group returned for the final testing, published vocational information was discussed before the testing. The use of such material and its location in the University Counseling Service were presented in a short discussion. The personality instrument and the interest test

were both administered after the discussion. Also, a questionnaire (See Appendix B) was used at this time. The purpose of the questionnaire was to recheck the student's permanent address and to discover his degree of vocational decision or indecision.

The Control Group. A control group was established in order to obtain a comparison group to the experimental group on both the personality instrument and on the amount of change from undecided to decided, even though there was no vocational counseling.

The control group was obtained from the undecided Arts and Sciences orientation students not chosen for the experimental group. These students were contacted by letter (See Appendix C) explaining to them that they were not selected for the special counseling program described earlier because of the large number of students wishing to be involved. The same letter also explained the need to have a group of students take a short questionnaire about themselves, and then retake it toward the end of the academic year. Also, these students were told these tests were simply for comparison and required nothing beyond taking the test. Out of the sixty affirmative responses, the control group was randomly selected in the same process mentioned previously; i.e., shuffling the questionnaires and choosing the forty-five participants randomly from this group.

Following the procedure outlined in the letter, the data were collected on this control group. Contained within the

final communication to this group, was a check to be certain none of this group had undergone individual counseling from either the Counseling Service or any of the professional counselors available, such as Student Personnel Directors or their assistants.

The Decided Group. The students in the vocationally decided group were freshmen students for the academic year 1969-70 who were in the College of Arts and Sciences and who stated they were decided vocationally. The procedure followed in obtaining their cooperation in the testing centered around their enrollment in a General Psychology course. Each student in this course is able to get additional points toward his grade in the course if he participates in some research study. Therefore a group of students volunteered to undergo testing in this study. The requirements to qualify for the testing were to (1) be an enrolled Arts and Sciences student (2) be a freshman in the first semester of study, and (3) be decided vocationally.

They were contacted through their class and asked to arrive for one of the three times listed on three separate evenings for the testing. Before each testing session, the students were told they would be tested over the two instruments and also would be given a questionnaire to complete. This is the same questionnaire referred to earlier which contains the check to be certain of the degree of decidedness at that particular time. They were told that they would be contacted by letter towards the end of the academic year and

would be asked to fill out the shorter of the two instruments they were to take that evening.

Finally, in April, in order to provide the incentive to retake the testing, the students were told if they wished a group interpretation of the interest inventory they had taken previously, to arrive at the time and place stated in the letter. They could also fill out the instrument at that time before the test interpretation. If they did not desire their test results they could simply fill out the test and questionnaire and send them back in the pre-addressed envelope.

Counseling

One of the procedures in the study was the assignment of each of the students to counseling in the experimental group. The students were randomly assigned to one of the three counselors in the Oklahoma State University Counseling Service.

Each counselor has his own individual philosophy of vocational counseling and each was trained at a different institution. There are, however, some similarities in approach that they all do in a similar way. An initial interview is held in which general information is obtained and the counselor and the counselee have a chance to become acquainted. Testing, in the form of the Strong Vocational Interest Blank, is suggested and an interpretation of the Strong results is given. Past the point of the interpretation, the different philosophies will account for different

procedures in the interview. Their philosophies and approaches to vocational counseling are as follows:

Counselor A. Counselor A has a master's degree and an additional 50 post master's hours. This counselor's training has been in the field of counseling and has included six semester hours in a supervised practice in counseling. The approach of Counselor A is directed by his philosophy that vocational selection is a process of the client understanding more about himself and his occupational opportunities and then reaching an acceptable compromise. This counselor aids the client in this self understanding by helping the client assess his abilities and interests by various tests and interviews. The client then looks into the occupational opportunities through investigating the vocational literature under the direction of the counselor.

Counselor B. This counselor's training and philosophy of vocational counseling are similar to those of Counselor A. Counselor B has a master's degree and 50 post master's hours. The training of this counselor is oriented slightly more to psychology as a function of the course work taken in this discipline. This counselor has had eight semester hours in supervised practicum. The major difference in philosophy centers around this counselor tending to place more emphasis on the client himself presenting his interests and abilities throughout counseling. This is accomplished through the client presenting any information he has about previous testing and different aspects of his past vocational history

that may be relevant to a future vocational choice. Also, the student is generally responsible for bringing to the interview job information which is discussed in relation to his abilities. Therefore, this counselor relies less than Counselor A upon testing and more upon the interview, although there are frequent occasions when tests may be used.

Counselor C. Counselor C possesses a master's degree only. This counselor had supervised counseling practice throughout six semesters of course work at the master's level. The approach utilized by Counselor C is, after the interpretation of the Strong, to emphasize the client's necessity to improve his self awareness by increasing his introspection. This is accomplished in the interview through reflection upon what the client says and does and by interpretation to the client of his words and actions. Through these means emphasis is placed upon the client's personality as to why he has had difficulty in making a vocational decision. No testing, other than the Strong is used by this counselor for vocational decision making. Also, little in the way of occupational information is used.

Counselor C feels changes toward vocational decision making occur through the client better understanding himself and his behavior that has allowed him to avoid decision making. Once the client understands this, the counselor is able to help the client evaluate his potential for a vocation.

The Instruments

The following instruments were used to gather data for the study.

The Semantic Differential

The instrument used to determine differences in the personality variables of the decided and undecided students was the semantic differential (hereafter referred to as SD) as basically developed by Osgood, Suci and Tannenbaum (1957). It consists of a number of scales, each of which is a bipolar adjective pair, usually antonyms. The bipolar adjectives used in the SD for this study were taken from the seventy-six bipolar pairs found by Osgood, Suci and Tannenbaum (1957) known to have factorial composition and high degrees of singular item reliability and validity (see Appendix D).

In its development and research, the authors tested the SD for reliability in two ways. The first, which was the standard test-retest correlation, yielded a coefficient of .85 (1957, p. 127). The second was a test of reliability to contrast the variation of test-retest on the seven point scale used by the originators of the SD. In this investigation it was found that in test-retest situations, ranging from retest immediately after the first administration to retest as long as fifteen weeks after the first administration, the variation was less than one scale unit of difference on the seven point scale (Osgood, 1957, p. 130-131).

To test the SD's validity, a comparison was made with scales known to measure a certain attitude. In measuring validity of the SD by comparison with these criterion scales, which had successfully measured a known personality trait, the coefficients of validity range from .74 to .91 (1957, p. 192-194).

The actual construction of the SD is left up to the researcher. The researcher selects the concepts to be evaluated and he also selects the bipolar adjective pairs he feels will yield the information from the respondent regarding his perception of a particular concept or trait. Thus, each SD is different depending on the researchers choice of both the concepts to be evaluated and the adjectives used for the respondent's choice.

The SD used in this research (see Appendix E) used a variety of bipolar adjectives to evaluate each of the seven personality traits, or concepts, which have been previously mentioned in Chapter II as showing differences between vocationally decided and undecided college students (i.e., high intellectual orientation, avoidance of risk taking, desire for security, dependence, passivity and withdrawal in social interaction, and low self esteem). In an attempt to minimize potential response set, the polarity of the adjectives typical of the undecided student was varied.

The person taking the test rates himself on a seven point rating scale in terms of how he views himself regarding his position between the two adjectives.

With regard to the SD, Remmers (1963) states it is a widely useful research instrument because of the rigorous and extensive experimentation it has undergone.

In summary, Kerlinger has stated:

> The semantic differential can be applied to a variety of research problems. It has been shown to be sufficiently reliable and valid for many research purposes. It is also flexible and relatively easy to adapt to varying research demands, quick and economical to administer and to score.
>
> . . . We have here a useful and perhaps sensitive tool to help in the exploration of an extremely important area of psychological and educational concern: connotative meaning. (1964, p. 578-580).

The Strong Vocational Interest Blank for Men

For this study, one of the instruments used to identify any differences between vocationally decided and undecided students was the Strong Vocational Interest Blank (hereafter referred to as the SVIB). While the SVIB is a highly regarded standardized test developed to measure interest patterns along occupational lines, it yields additional scores known as the non-occupational scales. The interest patterns on the SVIB were employed quite often in the counseling of the individuals of the experimental group, but the non-occupational scores were the scales used to provide data to determine any difference between the experimental and decided groups of college students.

These non-occupational scales used in the study, and their meaning are as follows:

1) Academic Achievement (AACH). This scale contrasts the interests of those who do well in school,

> both in high school and college, with those who do poorly, but the results are more related to persistence in school than to level of performance.
>
> 2) Age-Related Interests Scale (AR). The items in this scale show high correlations between the age of the person answering the inventory and probability of a "Like" response . . . Scores on the scale are clearly related to age and probably indicate something of the psychological maturity of the person.
>
> 3) Masculinity-Femininity (MF II). This scale contrasts the interests of men and women working in the same occupation . . . The item content is heavily weighted with asthetic and cultural activities --art, music, and literature.
>
> 4) Occupational Introversion-Extroversion (OIE). The introversion-extroversion dimension has been long recognized as an important one in human behavior; the scale is an attempt to tap that variable with the SVIB. This scale was constructed by contrasting the SVIB responses of MMPI defined introverts and extroverts.
>
> 5) Occupational Level (OL). . . it is best described as a reflection of the "socioeconomic level" of one's interests. In general, professional men and high level executives score high. . ., skilled tradesmen and blue collar workers score lower, (Campbell, 1969, pp. 9-20).

The SVIB, first published in 1927, has had extensive recent revisions in 1966 and 1969. The latter revision first presented two of the five non-occupational scores used in this study; they were the Age-Related Interests Scale and Occupational Introversion-Extroversion.

Also new with the 1969 revision and used in this study are administrative indices. Three of these used in this study, the Like Percentage (LP), Indifferent Percentage (IP), and the Dislike Percentage (DP), are based on how the respondent answers the SVIB. On the first 100 items, the respondent is given a statement and he can mark it as something he would like, dislike or be indifferent toward. The numbers

reported in these scales give the percentage of like, indifferent or dislike responses given by the person on the first 100 items.

In the two groups tested with the SVIB, both males and females were administered the male form of the test. One reason for this is that the male's form has all of the non-occupational scales, while the woman's form does not. Also, several authors have found that the male form of the test may be used effectively with women. Cronbach (1960) for example, concluded that there is not satisfactory validity in the women's form of the SVIB and goes on to state the men's form should be used with women, especially in counseling those women who plan to be involved in a vocational area for which the men's form is scored. Seder (1940 and 1940) used both forms of the SVIB to test professional women and found no important distinctions between the interests of men and women in the professional areas studied.

In presenting a summary based on a long period of research regarding the stability of the SVIB, both the Manual for Strong Vocational Interest Blanks, (1966) and the Supplement by Campbell (1969) provide a succinct review. Estimates of reliability, have been made through test-retest studies with spacing ranging from periods as little as 30 days to as much as 35 years for men first tested at age 16. The test-retest correlations run from slightly over .90 to .55, respectively.

Concurrent validity was used to test the SVIB's validity and the traditional criterion has been "continued membership in an occupation." The percent overlap statistic on each scale is provided in the manual to indicate the degree of separation for the various scales on the test and they "range from 15 to 52, with a median of 31 percent overlap. . . . These figures indicate that the scales are successful in separating the groups." (1966, p. 33-34). Thus some validity for the instrument has been established.

Self Report Questionnaire

The self report questionnaire was developed by the researcher. The experimental and decided groups completed the self report questionnaire which yielded information for comparison (see Appendix A). The information obtained and the number of categories for each were (to observe the exact categories, see Appendices F and H):

1) Parent's occupation; three categories based on the head of the household's socio-economic status by his occupation.

2) Parent's educational level; six categories based on highest educational level obtained by the head of the household.

3) Assignment of time to counseling of their high school counselor; four categories based on percent of time for counseling.

4) Availability of their high school counselor for vocational counseling; four categories based on counselor's perceived availability to students.

5) Frequency of seeing their high school counselor for vocational counseling; five categories based on number of times student saw counselor.

6) Permanent residence; five categories based on population of home town.

In order to compare size of towns, the population of the residence town was arrived at through the figures obtained in the Oklahoma Data Book (1968) for students who have resided in Oklahoma and the County and City Data Book, 1967 (1967) for students not in Oklahoma. Then the five categories as used in the classification developed by Murphy (1968) were used to categorize the size of towns. The categories were based on the natural groupings of towns of similar size from less than 3,000 to over 50,000 in population. (See Appendix H for the exact population limits in each category).

In order to categorize the occupational level of the head of the household, a variation of the National Opinion Research Center Scale (Hodges, 1964, p. 124) (hereafter referred to as the NORC Scale) was used (see Appendix I). Akers (1969) used the basic NORC Scale to provide a three category grouping of occupations under the general headings of high, middle and low occupational socio-economic groups. These groups were determined by the perceptions of specific occupations by the public. The public perceived a higher status for certain occupations and thus determined a hierarchy.

In his study, Akers divided the NORC Scale into three levels. The scores of occupations on the NORC ranged in a descending hierarchy from ninety-six for a U.S. Supreme Court Justice to a shoe shiner with a prestige score of thirty-three. Akers (1969) utilized the upper portion (prestige

scores of 74 to 93) of the hierarchy prestige scores for high socio-economic level, while the middle (scores of 63-73) and lower portions (scores of 34-62) were middle and low socio-economic levels respectively. Akers points out that these cutting points are arbitrary.

In the present study, the head of the household was assigned a rank of one, two or three depending on his occupation and in accord with the rank used by Akers. A rank of one was low socio-economic level, two was middle and three was high.

University ACT File

Each freshman student admitted to Oklahoma State University must take the American College Test (ACT) and in the process completes a self report on high school information and potential college involvement. These self reports, together with information obtained from the data bank, which the University compiles on entering students, provided the following comparison data:

1) ACT Composite scores
2) High school grade point average
3) Size of high school
4) Extra curricular activities in high school
5) Anticipated extra curricular activities in college

With the exception of 1 and 2, these data were reported in an ordinal classification code and this code was used for the testing of the differences between these groups (see Appendix G). The ACT scores and high school grade point

averages were interval and therefore were not converted for computation.

Statistical Treatment

The information obtained on the three groups was applicable to both parametric and non-parametric techniques of analysis. The results of the SD and the SVIB, as well as high school GPA and ACT scores were all assumed to be interval measures derived from normally distributed populations. The ordinal level data obtained from the self report questionnaire and the ACT self report were considered appropriate for non-parametric analysis techniques since they were "data not exact in any numerical sense, but which in effect are simply ranks." (Siegel, p. vii). This accounts for the differences in the statistics used.

When only two groups of parametric data were compared the t test was used. Popham (1967) states:

> The t test is used to determine just how great the difference between the two means must be in order for it to be judged significant, that is, a significant departure from differences which might be expected by chance alone. (1967, p. 130).

With an increase in the number of the groups to be tested for difference, the single classification analysis of variance was used, for its function according to Popham is "to test the significance of mean differences between more than two groups simultaneously." (1967, p. 164).

In the study, when there were more than two groups and it was necessary to note any interaction that might have

occurred between the two variables, the multiple classification analysis of variance was used. This statistic yields an F ratio for both independent variables and for the interaction that occurs between them. In order to find where the variance occurred among the various means, a t-test for differences among several means was used. This yields a critical difference statistic, which the difference between two means must exceed to be significantly different. The t-test for differences among several means can be found in Bruning and Kintz (1968).

The data that are available that are non-parametric in nature are data obtained for only the experimental and decided groups. Since it is for only two groups and is non-parametric, the Mann-Whitney U test will be employed.

Siegel states:

> When at least ordinal measurement has been achieved, the Mann-Whitney U test may be used to test whether two independent groups have been drawn from the same population. This is one of the most powerful of the non-parametric tests, and it is a most useful alternative to the parametric t test when the researcher wishes to avoid the t tests assumptions, or when the measurement in the research is weaker than interval scaling. (1956, p. 116).

The administrative indexes of the SVIB reported earlier are per cents and therefore are non-parametric. In the final stages of the study the experimental and decided groups were split into four groups, thus necessitating use of the Kruskal-Wallis one way analysis of variance. Siegel (1956) ranks this statistic as an extremely useful test for deciding whether the various independent samples are from

different populations. Since a sample's values may differ somewhat, the question is raised whether the difference among the samples are true population differences or whether they are chance variation such as could occur among several random samples from the same population. This statistic answers this question by testing the null hypothesis that the samples come from the same population or from identical populations with respect to averages.

One further statistical procedure needs to be discussed. When the post testing was accomplished, the three student groups, experimental, decided and control, were noted to be six groups since besides the anticipated changes in the experimental group, there were changes of some decideds to undecided and some controls became decided. In order to test not only significance but as much interaction as possible, the multiple-classification analysis of variance was used. As Popham states:

> . . . educational investigations must employ data analysis techniques that take into consideration not only more than one variable at a time, but also extremely subtle interactions between variables. Multiple-classification analysis of variance procedures provide such analytic techniques. (1967, p. 198).

To provide the reader a clearer understanding of the use and occurrence of the various statistics, the following diagrams are provided. (The numbers in parenthesis by each group indicate the number of subjects in that group.)

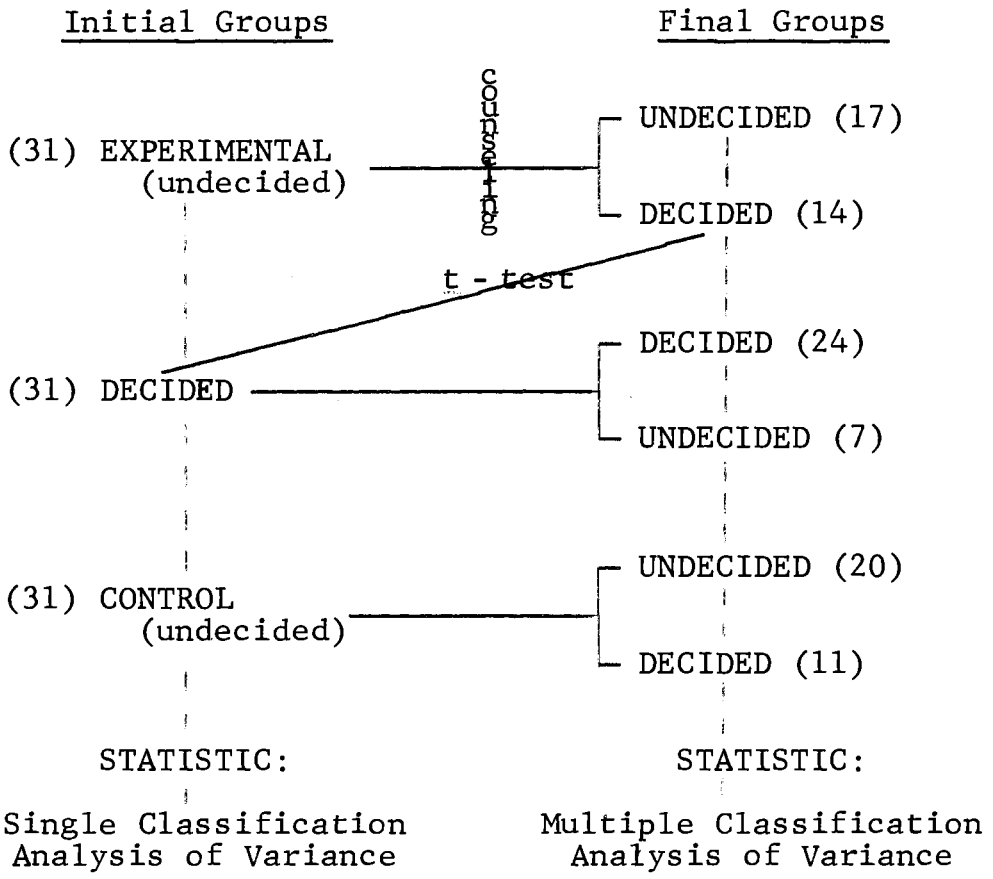

Figure 1. Schema of the Statistics on the Semantic Differential

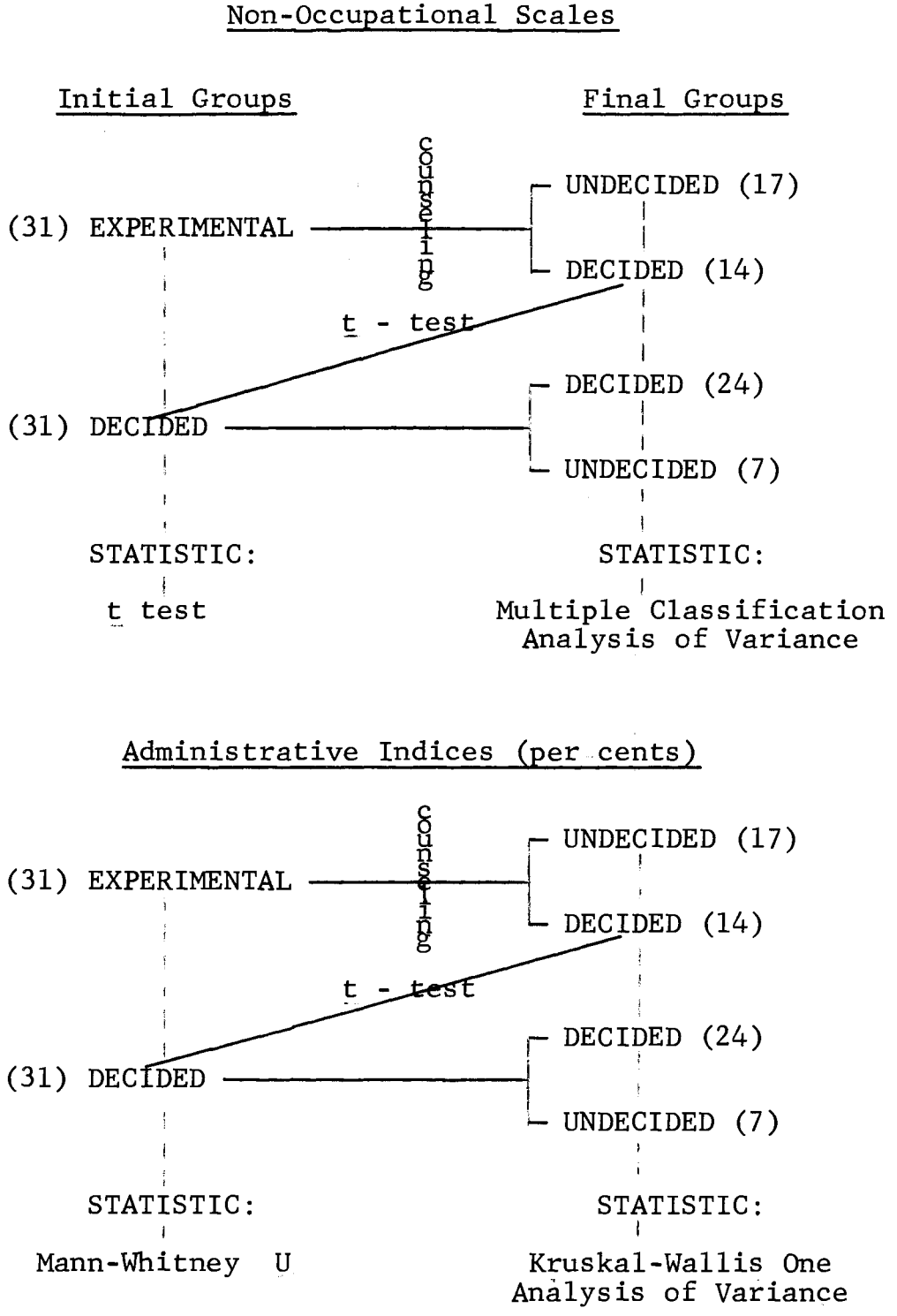

Figure 2. Schema of the Statistics on the Strong Vocational Interest Blank (Note: The SVIB post test scores on the originally decided group are the scores from the pre testing, since no post testing with this group was done with the SVIB.)

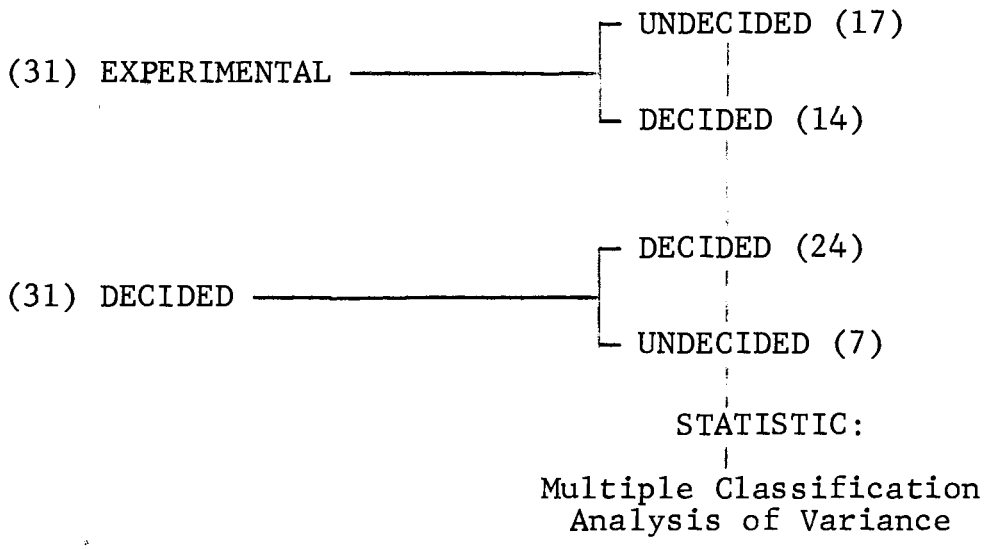

Figure 3. Schema of the Statistics on ACT and GPA Results.
(Note: The scores tested are not post test scores. These are the entering freshmen's ACT and high school GPA.)

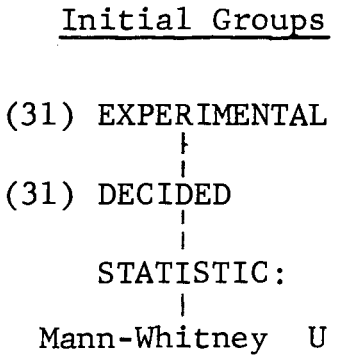

Figure 4. Schema of the Statistics on the Background Variables from the Self Report Questionnaire.

Chapter III has reported the sample and its selection, the procedures used in the study, the instruments employed and the statistical treatment applied to the data. Chapter IV provides the findings that have resulted from the study.

CHAPTER IV

ANALYSIS OF DATA AND PRESENTATION OF RESULTS

Introduction

This study was conducted to answer the following questions: (1) are there differences that exist and can be detected between the vocationally undecided college student and the vocationally decided college student, and (2) what effect does vocational counseling have upon the vocationally undecided college student?

It should be recalled by the reader that there were originally three comparison groups; experimental, decided and control. Each of these comparison groups had two sub groups (decided and undecided) evolve before final testing. Thus, there were six final groups or sub groups.

The semantic differential was administered as the personality assessment instrument to the three student groups. It measured seven personality traits found by previous researchers to be different for the undecided student. The Strong Vocational Interest Blank was administered to measure five non-occupational interest areas for the experimental and decided student groups. Also, information from the self report questionnaire and the ACT self report was gathered

for the experimental and decided groups. The results of this study were analyzed according to the procedures outlined in Chapter III.

This chapter will present the results in tables and figures and will discuss these results as they relate to the hypotheses. The final section of this chapter will present a summary of the analysis of data.

Results of the Analysis of Data

Semantic Differential

Table I presents the results of the one-way analyses of variance applied to the seven parts of the semantic differential (SD) pre test which were available for the experimental, decided and control groups. The table is a composite of the analysis of variance obtained from the statistical procedure applied to each of the seven parts of the SD.

The significance of the data is reported in the F ratio. If the F ratio exceeds the critical F value listed for the sample, then this indicates a significant difference exists for the three groups on the SD. The F ratios for these analyses range from a low of 0.14 to a high of 2.87 and, in comparison with the critical F value of 3.11, there are none that indicate a significant difference. Therefore there were no significant differences among the scores of the pre test SD for the experimental, decided and control groups. Thus hypothesis 1 is accepted; there is no significant differences on intellectual orientation, avoidance of risk,

TABLE I

RESULTS OF ONE-WAY ANALYSES OF VARIANCE ON SD PRE-TEST OF THE THREE STUDENT GROUPS

Test	Source of Variation	df	Sum of Squares	Mean Square	F Ratio	Significance
Semantic Differential (Pre Test)						
I) Intellectual Orientation	Between	2	7.80	3.90	2.87	n.s.
	Within	90	122.17	1.36		
	Total	92	129.97			
II) Avoidance of Risk	Between	2	3.86	1.93	2.61	n.s.
	Within	90	66.47	0.73		
	Total	92	70.33			
III) Desire for Security	Between	2	0.92	0.45	0.25	n.s.
	Within	90	158.72	1.78		
	Total	92	159.62			
IV) Dependence	Between	2	0.20	0.10	0.14	n.s.
	Within	90	64.18	0.71		
	Total	92	64.38			
V) Passive in Social Interaction	Between	2	1.87	0.93	2.05	n.s.
	Within	90	40.99	0.45		
	Total	92	42.86			
VI) Withdrawal in Social Interaction	Between	2	6.61	3.31	1.75	n.s.
	Within	90	170.04	1.89		
	Total	92	176.65			
VII) Self Esteem	Between	2	3.11	1.55	2.76	n.s.
	Within	90	50.65	0.56		
	Total	92	53.76			

Critical F values:

$.05\ F_{2,90} = 3.11$

$.01\ F_{2,90} = 4.88$

desire for security, dependence needs, passiveness in social interaction, withdrawal from social interaction, and self esteem among the experimental, decided and control students.

Table II presents the F ratios that resulted for the multiple classification analyses of variance conducted on the scores of the post-test SD for the decided and undecided sub-groups of the experimental, decided and control groups. In this table, which is a composite of the seven analyses of variance, the rows were vocational decision at the time of post testing (first independent variable) and are entered as "decision" in the table. The columns were the comparison groups of experimental, decided and control (the second independent variable) and are entered as "groups" in the table.

The twenty-one F ratios for the seven multiple classification analysis of variance problems again range widely with the two highest F ratios, 3.85 and 4.65, significant at the .05 level of confidence. Both ratios occurred for part V, passiveness in social interaction. The ratio of 3.85 was for "groups" and 4.65 was the ratio for interaction of "decision" with "groups." In order to know specifically which group is significantly different from the other groups in the columns, a t-test among multiple means was administered. The results of that statistical technique are in Table III.

The matrix in Table III identifies location of the difference among the columns. In comparing the difference of the experimental and decided group, and the control and decided group, mean differences were 0.28 and 0.35

TABLE II

RESULTS OF MULTIPLE CLASSIFICATION ANALYSES OF VARIANCE ON SD POST-TEST OF THE SUB-GROUPS OF THE THREE COMPARISON GROUPS

Test	Source of Variation		Sum of Squares	Mean Square	F Ratio	Significance
Semantic Differential (Post Test)						
I) Intellectual Orientation	Decision	1	0.29	0.28	0.17	n.s.
	Groups	2	7.68	3.84	2.26	n.s.
	Interaction	2	0.65	0.32	0.19	n.s.
	Within	87	147.92	1.70		
	Total	92	156.54			
II) Avoidance of Risk	Decision	1	0.05	0.05	0.07	n.s.
	Groups	2	2.36	1.18	1.57	n.s.
	Interaction	2	1.92	0.96	1.28	n.s.
	Within	87	65.09	0.75		
	Total	92	69.42			
III) Desire for Security	Decision	1	0.98	0.98	0.67	n.s.
	Groups	2	0.36	0.18	0.12	n.s.
	Interaction	2	4.83	2.41	1.64	n.s.
	Within	87	127.50	1.47		
	Total	92	133.67			
IV) Dependence	Decision	1	0.00	0.00	0.00	n.s.
	Groups	2	0.93	0.46	0.81	n.s.
	Interaction	2	2.73	1.36	2.39	n.s.
	Within	87	49.44	0.57		
	Total	92	53.10			
V) Passive in Social Interaction	Decision	1	0.02	0.02	0.07	n.s.
	Groups	2	2.08	1.04	3.85	$p < .05$
	Interaction	2	2.51	1.25	4.65	$p < .05$
	Within	87	23.69	0.27		
	Total	92	28.30			
VI) Withdrawal in Social Interaction	Decision	1	0.04	0.04	0.02	n.s.
	Groups	2	5.69	2.84	1.42	n.s.
	Interaction	2	1.30	0.65	0.32	n.s.
	Within	87	174.22	2.00		
	Total	92	181.25			
VII) Self Esteem	Decision	1	0.02	0.02	0.04	n.s.
	Groups	2	0.87	0.43	0.91	n.s.
	Interaction	2	0.81	0.40	0.84	n.s.
	Within	87	42.16	0.48		
	Total	92	43.86			

Critical F values: $.05\ F_{1,87} = 3.96$ $.05\ F_{2,87} = 3.11$

$.01\ F_{1,87} = 6.96$ $.01\ F_{2,87} = 4.88$

TABLE III

GROUP MEANS AND MATRIX OF DIFFERENCES BETWEEN MEANS ON PART V (POST-TEST) SD FOR THE THREE COMPARISON GROUPS (COLUMNS)

	2	3
1	.28*	.07
2		.35*

critical difference = .264 @ .05 level

*pairs exhibit significant difference at .05 level

1 - Experimental group ($\overline{X}$ = 3.73)

2 - Decided group ($\overline{X}$ = 3.45)

3 - Control group ($\overline{X}$ = 3.80)

respectively. Both were above the critical difference of 0.26 and thus indicated a significant difference ($p < .05$) in the means. Both the experimental and control group were significantly higher in scores than the decided group. In part V of the SD, the higher the score the more passiveness in social interaction. Since both the experimental and control groups had more undecided students (17 and 20 respectively) than decided (14 and 11) this may explain the reason for these two groups scoring higher. Also, it should be recalled that the experimental and control groups were originally undecided and thus held more potential to remain undecided and score higher even though Table I indicated little difference among the three original groups.

Table IV identifies the location of difference that existed between means in the interaction of the "decision" with the "groups." The matrix in Table IV shows that following counseling the vocationally decided students in the experimental group had significantly higher scores than those of both sub groups in the decided group, and the undecided students in the experimental group. These three mean differences of 0.54, 0.56 and 0.57 are above the critical difference ($p < .05$). In order to explain these differences as clearly as possible, Figure 5 is presented to show the interaction results of the means of the six sub groups.

Figure 5 graphically presents the mean scores of the six sub groups on part V of the SD. It has been shown in Table IV that interaction resulted from the differences

TABLE IV

SUB-GROUP MEANS AND MATRIX OF DIFFERENCES BETWEEN MEANS ON PART V (POST-TEST) SD FOR SUB-GROUPS OF THE THREE COMPARISON GROUPS (INTERACTION)

	2	3	4	5	6
1	.54*	.32	.56*	.57*	.19
2		.22	.02	.03	.35
3			.24	.25	.13
4				.01	.37
5					.38

critical difference = .405 @ .05 level

*pairs exhibit significant difference at .05 level

1) vocationally decided students in Experimental Group ($\overline{X}$ = 4.03)
2) vocationally decided students in Decided Group ($\overline{X}$ = 3.49)
3) vocationally decided students in Control Group ($\overline{X}$ = 3.71)
4) vocationally undecided students in Experimental Group ($\overline{X}$ = 3.47)
5) vocationally undecided students in Decided Group ($\overline{X}$ = 3.46)
6) vocationally undecided students in Control Group ($\overline{X}$ = 3.84)

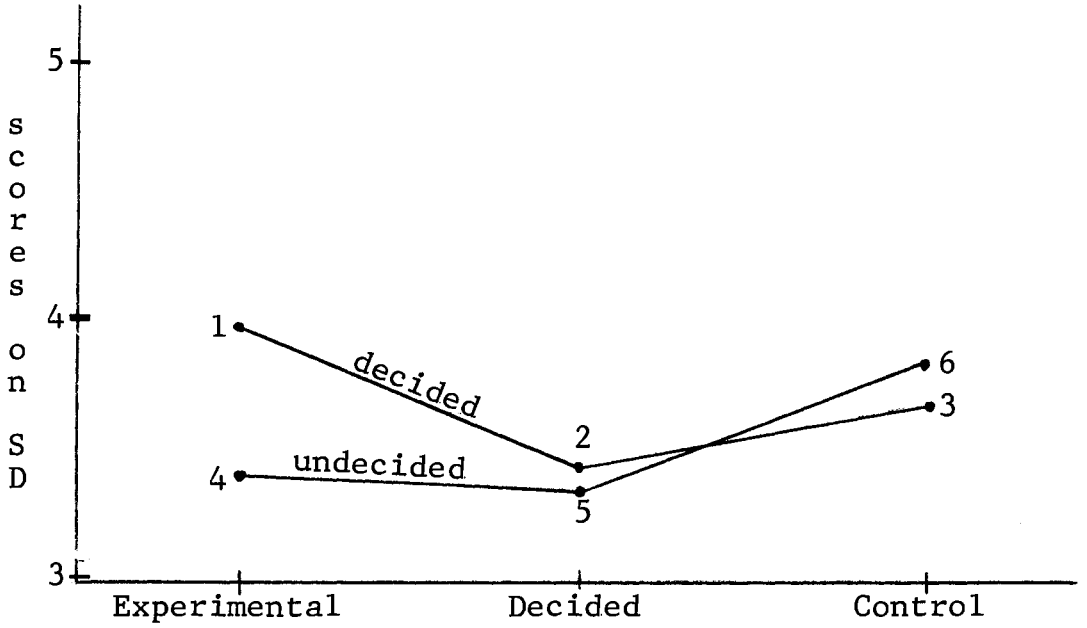

Figure 5. Graphic Presentation of Interaction from Means of the Sub Groups on Part V of SD (Post-test)

between the mean of group 1 and the means of groups 2, 4 and 5. The interaction, while difficult to explain, appears to result from the higher score of group 1. All other scores show a close proximity and general pattern of consistency. Group 1's score, however, is somewhat elevated and not in the pattern. Therefore, the two independent variables, vocational decision and group designation, interact and show the interactive relationship upon the dependent variable, the SD scores. If the mean of group 1 had been somewhat lower, there would have been no interaction present since the source for the significant interaction appears to lie in the mean of group 1.

As the SD was constructed for this study, the polarity of the adjectives was established to identify scores toward the high end of the scale as characteristic of the undecided and scores toward the low end of the scale as characteristic of the decided. Therefore, the score for the decided students in the experimental (group 1 in Figure 5) is high and thus more characteristic of undecided students.

The data in Tables II and IV are in answer to hypothesis 2. This hypothesis stated there would be no significant difference between the decided and undecided students of the experimental group on the seven parts of the SD. The hypothesis was rejected for part V, passiveness in social interaction. The hypothesis was accepted for parts I, II, III, IV, VI and VII.

This indicates that the decided students in the experimental group are more passive in social interaction than the undecided experimental students. However, the research reported in Chapter II on passivity of the undecided student stated he was more passive than the decided student. Thus, in this instance, the present research conflicts with earlier findings, although that research used a current population and did not follow it for changes.

Reference to Tables II and IV shows hypothesis 3, which stated there would be no difference between the decided and undecided students of the control and decided groups on the seven parts of the SD after post-testing to be accepted.

The results of t-tests on the SD for the decided students of the experimental group and the original decided group are presented in Table V. The t-tests were conducted to note if the experimental students who became decided at the end of the school year were similar to the original decided students in the personality traits measured by the SD.

In all instances, the mean of the experimental students who became decided was above the mean of the original decided group. For three parts of the SD, I, V, and VII, the means were high enough to provide t values of 2.38, 2.10 and 2.24 respectively and in comparison with the critical value of t of 2.02 ($p < .05$) they were significantly different. On the SD, the higher scores are more characteristic of the undecided student, and thus, the mean scores of the decided students of the experimental group are more like those of the

TABLE V

RESULTS OF t-TESTS ON THE SD FOR THE DECIDED STUDENTS OF THE EXPERIMENTAL GROUP AND THE ORIGINAL DECIDED GROUP

Semantic Differential	$\bar{X}$ of Exper. Decided	$\bar{X}$ of Orig. Decided	t Value	Signif-icance
I) Intellectual Orientation	3.84	2.72	2.38	$p < .05$
II) Avoidance of Risk	3.79	3.33	1.91	n.s.
III) Desire for Security	4.84	4.37	1.20	n.s.
IV) Dependence	3.17	3.11	0.26	n.s.
V) Passive in Social Interaction	4.03	3.44	2.10	$p < .05$
VI) Withdrawal in Social Interaction	3.52	3.00	1.06	n.s.
VII) Self Esteem	3.18	2.56	2.24	$p < .05$

critical value of t at .05 level = 2.02

undecided student. This is somewhat unusual, especially when it is recalled from Table I that there was no significant difference between the experimental students and the decided students on the SD. Yet, Table V shows that part of the experimental group, the decideds, have moved even more strongly toward characteristics of the undecided as they approached the end of the school year.

The data in Table V were used to answer hypothesis 4. The null hypothesis stated there would be no significant difference between the decided students of the experimental group and the original decided students on the seven parts of the SD. It is accepted for parts II, III, IV and VI of the SD, but it is rejected at the .05 level of confidence for the remaining three sections of the SD. The decided students of the experimental are different from the original decideds in that they possess higher intellectual orientation (I), are more passive in social interaction (V) and have lower self esteem (VII).

Background Variables

In order to compare the experimental and decided groups on both ACT scores and high school GPA the final sub groups that resulted from the two groups were used as the categories for comparison. Both the experimental and decided groups further divided into decided and undecided, thus making four groups. Using this technique, multiple classification analysis of variance was used, providing a somewhat stronger

analysis than would be possible with the single class analysis of variance. The results of the analyses are in Table VI.

TABLE VI

RESULTS OF MULTIPLE CLASSIFICATION ANALYSES OF VARIANCE ON ACT SCORES AND GPA OF THE DECIDED AND EXPERIMENTAL GROUP

Source of Data	Source of Variation	df	Sum of Squares	Mean Square	F Ratio	Signif-icance
1) GPA (high school)	Decision	1	.17	.17	0.50	n.s.
	Groups	1	1.17	1.17	3.44	n.s.
	Interaction	1	0.25	0.25	0.73	n.s.
	Within	58	19.86	0.34		
	Total	61	21.45			
2) ACT Scores	Decision	1	21.64	21.64	1.94	n.s.
	Groups	1	20.96	20.96	1.88	n.s.
	Interaction	1	36.57	36.57	3.28	n.s.
	Within	58	646.19	11.14		
	Total	61	725.36			

Critical F values:

$.05\ F_{1,\ 58} = 4.02$

$.01\ F_{1,\ 58} = 7.12$

To have been significant at the .05 level the F ratio would have had to exceed the critical F value of 4.02. The F ratios ranged from 0.50 to 3.44 and thus none equaled or exceeded the critical F value. There were no significant differences in either ACT scores or high school GPA among any of the student groups. Also, there were no interactions present between the two independent variables of vocational

decision and comparison groups. This supports the research reported in the first portion of the review of literature in Chapter II in which earlier researchers found no difference existing between academic achievement and vocational choice.

Table VII reports the results of the Mann-Whitney U statistic conducted on the nine background variables obtained on the experimental and decided groups. The U obtained in the statistical treatment is converted to a z which can be used in a z table to produce the probability for the observed difference between groups. In accord with previous levels in this study the .05 level of significance was utilized as the minimum established for true difference.

Of the nine background variables, three were found to be significantly different between the decided and undecided student. The undecided student: (1) perceived his high school counselor as less available ($p < .007$), (2) had a lower frequency of seeing his high school counselor for vocational counseling ($p < .04$) and (3) attended a smaller (based on size of the graduating class) high school ($p < .037$) than was the case for the decided student.

Therefore, hypothesis 5 which stated there would be no difference between the decided and undecided student on ACT, GPA and the background variables is accepted in regard to the ACT and GPA. It is also accepted for the background variables of the parent's educational and occupational level, the counselor's assignment of time, the size of the town of residence, the extracurricular involvement in high school and

TABLE VII

RESULTS OF MANN-WHITNEY U TESTS ON BACKGROUND VARIABLES FOR THE EXPERIMENTAL AND DECIDED GROUPS

Source	$\Sigma\bar{R}$ for Experimental Group	$\Sigma\bar{R}$ for Decided Group	U Value	z Value	p
1) Parents' occupational level	973.50	979.50	483.50	.043	.97
2) Parents' educational level	975.50	977.50	481.50	.014	.99
3) Counselor's assignment of time	886.00	1067.00	571.00	1.58	.11
4) Availability of high school counselor	801.50	1151.50	655.50	2.71	.0068
5) Frequency of seeing high school counselor	840.50	1112.50	616.50	2.04	.04
6) Size of town	877.50	1075.50	579.50	1.47	.14
7) Size of high school	841.00	1112.00	616.00	2.09	.037
8) Extra-curricular activities in high school	921.00	848.00	536.00	.78	.43
9) Anticipated extra-cur. activities in college	1055.50	896.50	560.50	1.18	.24

the anticipated extracurricular involvement in college. Hypothesis 5 was rejected, however, for the background variables of perceived availability of the high school counselor, frequency of seeing the high school counselor and size of the high school. The implications of this rejection of the hypothesis will be discussed in Chapter V.

Strong Vocational Interest Blank

Table VIII presents data from the SVIB. This table presents the differences between the decided and experimental groups on the pre test SVIB non-occupational scales.

TABLE VIII

RESULTS OF t-TESTS ON THE SVIB NON-OCCUPATIONAL SCORES BETWEEN THE EXPERIMENTAL AND DECIDED GROUPS (PRE-TEST)

Non-occupational Scale	$\bar{X}$ of Exper.	$\bar{X}$ of Decided	t Value	Significance
1) Academic achievement	44.61	45.32	0.23	n.s.
2) Age-related interests	32.93	33.84	0.39	n.s.
3) Masculinity-Femininity II	49.77	46.16	1.10	n.s.
4) Occupational Introversion-extroversion	48.23	41.55	2.29	$p < .05$
5) Occupational level	54.77	56.90	1.59	n.s.

critical value of t at .05 level = 2.00

At the start of this research the SVIB results were similar on the non-occupational scales for the two groups

with the exception of the occupational introversion-extroversion scale. In comparing the two groups scores on this scale a t value of 2.29 was produced and since it exceeds the critical t value of 2.00, which is at the .05 level of confidence, it shows the two groups as scoring differently. The t values for the comparisons of the two groups' scores on the other non-occupational scales were 0.23, 0.39, 1.10 and 1.59. None of these exceeds the critical t value which indicates the two groups did not score differently on these scales. The table presents the fact that the experimental group scored higher on occupational introversion-extroversion and thus was more characteristic of individuals who by nature of the work they do are more introverted than other workers. While it is necessary to generalize from occupational introversion, it none the less appears strongly parallel to the research reported in Chapter II in which the undecided student is more withdrawn in social interaction.

Table IX reports on the same two comparison groups on the pre-test of the SVIB on the "like," "dislike" and "indifferent" per-cent responses. Since per-cents are ordinal, the Mann-Whitney U, a non-parametric statistical technique, was employed.

Neither group is shown to score differently on the amount of "indifferent" or "dislike" responses in that the probability is 0.45 and 0.07 for these comparisons. However, there is a difference on the "like" responses in that the decided group scored higher on this scale than the experimental group. Here the probability is 0.0006.

TABLE IX

RESULTS OF MANN-WHITNEY U TESTS ON SVIB LIKE, INDIFFERENT AND DISLIKE PER-CENT RESPONSES FOR EXPERIMENTAL AND DECIDED GROUPS (PRE-TEST)

Source	ΣR for Experimental Group	ΣR for Decided Group	U Value	z Value	p
1) Like Responses	731.00	1202.00	726.00	3.46	0.0006
2) Indifferent Responses	1019.50	923.50	533.50	0.75	0.45
3) Dislike Responses	1102.00	851.00	606.50	1.78	0.07

The information in Tables VIII and IX answers hypothesis 6, which stated there would be no difference between the SVIB pre-test scores for the experimental and decided groups on the various scales of the SVIB. It was rejected for two scales, occupational introversion-extroversion and the amount of "like" responses. The hypothesis is accepted for the other six scales.

In order to test the post-test results of the SVIB on the two sub-groups of both the experimental and decided groups, multiple classification analysis of variance was used. The results of the analyses on the five non-occupational scales are reported in Table X. In this table, as before, rows were vocational decision at the time of post-testing and are entered as "decision" in the table. The

TABLE X

RESULTS OF MULTIPLE CLASSIFICATION ANALYSES OF VARIANCE ON THE SVIB FOR THE SUB-GROUPS OF DECIDED AND UNDECIDED FOR THE EXPERIMENTAL AND DECIDED GROUPS

Source	Source of Variation	df	Sum of Squares	Mean Square	F Ratio	Signif-icance
Non-Occupational Scale						
1) Academic Achievement	Decision	1	167.77	167.77	1.1	n.s.
	Groups	1	100.66	100.66	0.66	n.s.
	Interaction	1	618.23	618.23	4.05	$p < .05$
	Within	58	8852.26	152.62		
	Total	61	9738.92			
2) Age-related Interests	Decision	1	155.58	155.58	2.07	n.s.
	Groups	1	23.30	23.30	0.31	n.s.
	Interaction	1	212.83	212.83	2.83	n.s.
	Within	58	4359.65	75.17		
	Total	61	4751.36			
3) Masculinity-Femininity II	Decision	1	3.97	3.97	0.02	n.s.
	Groups	1	1.31	1.31	0.008	n.s.
	Interaction	1	893.47	893.47	5.69	$p < .05$
	Within	58	9102.43	156.94		
	Total	61	10001.18			
4) Occupational Introversion-Extroversion	Decision	1	8.67	8.67	0.07	n.s.
	Groups	1	111.11	111.11	0.88	n.s.
	Interaction	1	714.73	714.73	5.64	$p < .05$
	Within	58	7347.70	126.68		
	Total	61	8182.21			
5) Occupational Level	Decision	1	1.74	1.74	0.032	n.s.
	Groups	1	41.95	41.95	0.78	n.s.
	Interaction	1	42.12	42.12	0.78	n.s.
	Within	58	3134.79	54.05		
	Total	61	3220.60			

critical F values: $.05\ F_{1,58} = 4.02$

$.01\ F_{1,58} = 7.12$

columns were the comparison groups of experimental and decided and are entered as "groups" in the table.

To be significant, the F ratio would have had to exceed 4.02 which was the critical F value at the .05 level of confidence. In the analyses of the rows and of the columns, the F ratios had a low of 0.008 and a high of 2.07. There were no significant differences among any of the rows (decision) or among any of the columns (groups). On three non-occupational scales, AACH, MFII and OIE, however, there were differences in interaction between rows and columns since the F ratios were 4.05, 5.69 and 5.64.

To note the location of the difference among the means on interaction for AACH, consult Table XI and Figure 6.

TABLE XI

MATRIX OF DIFFERENCES BETWEEN MEANS OF ACADEMIC ACHIEVEMENT OF THE SVIB FOR THE DECIDED AND UNDECIDED SUB-GROUPS OF THE EXPERIMENTAL AND DECIDED GROUPS (INTERACTION)

	2	3	4
1	3.62	8.88	2.14
2		5.26	5.76
3			11.02*

critical difference = 9.91 @ .05 level

*pairs exhibit significant difference at .05 level

1) vocationally decided students in Experimental Group ($\bar{X}$ = 43.00)
2) vocationally decided students in Decided Group ($\bar{X}$ = 46.62)
3) vocationally undecided students in Experimental Group ($\bar{X}$ = 51.88)
4) vocationally undecided students in Decided Group ($\bar{X}$ = 40.86)

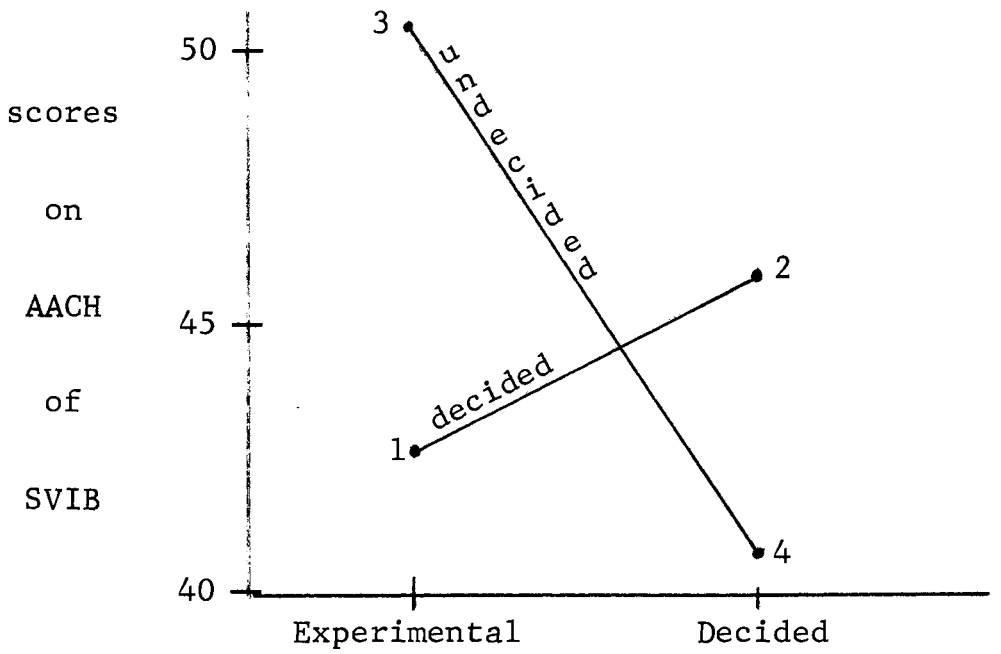

Figure 6. Graphic Presentation of Interaction of Means for the Sub-Groups of the Experimental and Decided Groups on AACH of SVIB

The only reported significant difference occurs between the undecided students in the experimental group and the undecided students in the uncounseled group (decideds). A review of the means for the four groups shows the undecided students' in the decided group to be the lowest at 40.86. This mean in Figure 6, therefore, produces the crossing of the two lines for interaction whereas for no interaction, it would have needed to be higher and to produce the parallel lines characteristic of no interaction. Therefore the undecided students of the decided group scored significantly lower than their undecided counterparts in the experimental group on academic achievement of the SVIB.

Table XII and Figure 7 present the data on the interaction variance of MF-II on the SVIB.

TABLE XII

MATRIX OF DIFFERENCES BETWEEN MEANS OF MF-II OF THE SVIB FOR THE DECIDED AND UNDECIDED SUB-GROUPS OF THE EXPERIMENTAL AND DECIDED GROUPS (INTERACTION)

	2	3	4
1	6.17	6.47	4.14
2		0.30	10.31*
3			10.61*

critical difference = 9.96 @ .05 level

*pairs exhibit significant difference at .05 level

1) vocationally decided students in Experimental Group ($\overline{X}$ = 50.00)
2) vocationally decided students in Decided Group ($\overline{X}$ = 43.83)
3) vocationally undecided students in Experimental Group ($\overline{X}$ = 53.53)
4) vocationally undecided students in Decided Group ($\overline{X}$ = 54.14)

It again appears that the undecided students of the decided group have scores that are different than those of the other groups on this scale. This group has a mean of 54.14 as compared to means of 50.00, 43.83 and 43.53 for the other comparison groups. In this instance the undecided students of the decided group have more masculine oriented scores (in terms of vocational interest) than the other three sub groups. In the figure, it can be seen that for this high scoring group to have been characteristic of less or no interaction, it needed to be lower.

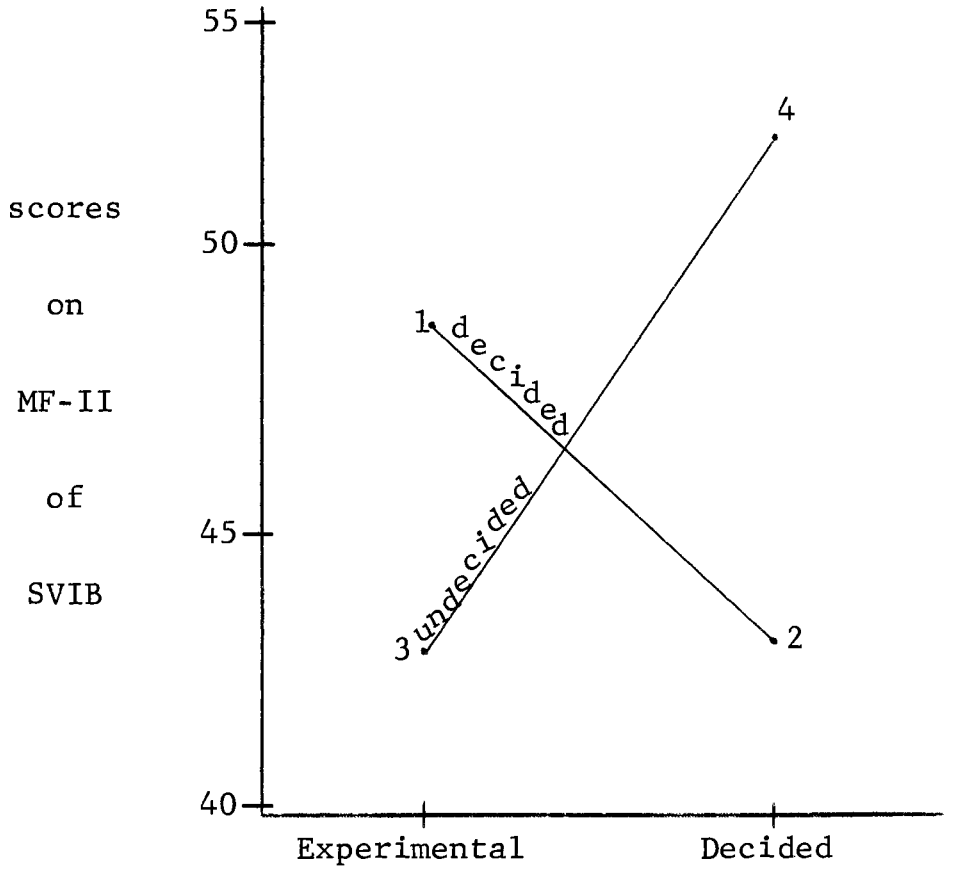

Figure 7. Graphic Presentation of Interaction of Means for the Sub-Groups of the Experimental and Decided Groups on MF-II of SVIB

By relating Figure 8 to Table XIII it is possible to note the variance that resulted from interaction on OI-E of the SVIB.

The decided students of the experimental group tended to score higher (mean of 49.64) on occupational introversion-extroversion than the other groups. Therefore, they are characteristic of individuals who are in occupations that allow them to be more introverted. This mean score, therefore, is the one most responsible for the interaction on this scale of the SVIB. These decided students of the

TABLE XIII

MATRIX OF DIFFERENCES BETWEEN MEANS OF OI-E OF THE SVIB FOR THE DECIDED AND UNDECIDED SUB-GROUPS OF THE EXPERIMENTAL AND DECIDED GROUPS (INTERACTION)

	2	3	4
1	9.60*	8.99	2.93
2		0.61	6.71
3			6.60

critical difference = 9.34 @ .05 level

*pairs exhibit significant difference at .05 level

1) vocationally decided students in Experimental Group ($\overline{X}$ = 49.64)
2) vocationally decided students in Decided Group ($\overline{X}$ = 40.04)
3) vocationally undecided students in Experimental Group ($\overline{X}$ = 40.65)
4) vocationally undecided students in Decided Group ($\overline{X}$ = 46.71)

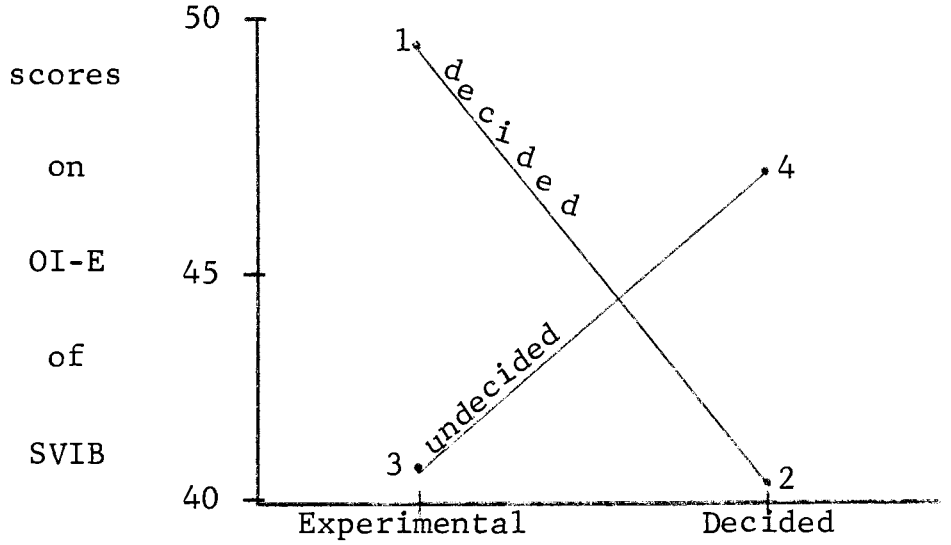

Figure 8. Graphic Presentation of Interaction of Means for the Sub-Groups of the Experimental and Decided Groups on OI-E of SVIB

experimental group are significantly different from the decided students of the uncounseled group.

Since the "like," indifferent" and "dislike" per-cent responses on the SVIB can not be treated as interval data, the Kruskal-Wallis one way analysis of variance was employed on these scales for the same groups as the previous multiple classification analyses of variance tested. The Kruskal-Wallis yields an H which for large groups is treated the same as chi square in order to discover the probability of the statistic. When the groups were compared with the technique mentioned on the "like," "indifferent" and "dislike" per-cent responses, the resulting H for each comparison was 2.80, 3.70 and 3.71 respectively. These all indicate probability greater than the .05 level of confidence.

Hypothesis 7 therefore was accepted in that there was no significant difference between the decided and undecided experimental students on the SVIB as seen by the lack of significant difference on the previous tables for these two sub groups.

Only the masculinity-femininity scale of the SVIB was found to be significantly different for the decided and undecided sub groups of the originally decided group. Thus, hypothesis 8, which stated there would be no significant difference between the decided and undecided students of the originally decided group on the various scales of the SVIB, was rejected for the masculinity-femininity scale. It was accepted for the seven other scales of the SVIB.

The analyses presented in Tables XIV and XV were conducted to compare one decided group with another. The original decided group's SVIB scores were compared to the SVIB scores of the decided group that developed from the Experimental group.

TABLE XIV

RESULTS OF t-TESTS ON THE SVIB NON-OCCUPATIONAL SCALES FOR THE DECIDED STUDENTS OF THE EXPERIMENTAL GROUP AND THE ORIGINAL DECIDED GROUP

SVIB	$\bar{X}$ of Experimental Group	$\bar{X}$ of Decided (Original)	t Value	Significance
1) AACH	43.00	45.32	0.55	n.s.
2) AR	35.79	33.84	0.70	n.s.
3) MF-II	50.00	46.16	0.82	n.s.
4) OI-E	48.57	41.55	2.01	n.s.
5) OL	54.00	56.90	1.63	n.s.

critical value of t at .05 level = 2.02

TABLE XV

RESULTS OF MANN-WHITNEY U TESTS ON SVIB LIKE, INDIFFERENT, AND DISLIKE PER CENT RESPONSES FOR THE EXPERIMENTAL DECIDED STUDENTS AND THE ORIGINAL DECIDED GROUP

Source	ΣR for Exper. Decided Group	ΣR for Decided Group	U Value	z Value	p
1) Like Responses	222.00	813.00	317.00	2.45	0.01
2) Indifferent Responses	351.00	684.00	246.00	0.71	0.48
3) Dislike Responses	366.00	669.00	261.00	1.08	0.28

On the non occupational scales, t tests were conducted on the scores of these two groups and to have been significant at the .05 level of confidence the t value would have had to equal or exceed a critical t value of 2.02. The t's ranged from 0.55 to 2.01 and thus none were high enough to show significant difference.

Mann-Whitney U tests were conducted on these two comparison groups for the per-cent response categories. The original decided group scored higher on the "like" per-cent category than did the decided students from the experimental group which had a probability of occurrence of .01 This showed the two sets of scores to be significantly different. The other per-cent response categories had probabilities of 0.48 and 0.28.

The data in Tables XIV and XV show that hypothesis 9, which stated there would be no difference between the uncounseled decided freshmen and the vocationally counseled decided freshmen on the eight scales used from the SVIB, was rejected for the category of "like" per-cent responses. All other scales are not significantly different for the two comparison groups and therefore the hypothesis was accepted on the seven remaining scales.

Summary

The data that has been presented in this chapter resulted from information obtained with the SD, SVIB, self report questionnaire and the ACT self report. On the SD,

only a small number of differences were found. These differences were mainly in comparisons conducted over the post-test results. The decided students of the experimental group were shown as different from the original decided group in that they possessed higher intellectual orientation, were more passive in social interaction and had lower self esteem.

The resulting data over the background variables for the undecided student in comparison to the decided student showed the undecided student to perceive his high school counselor as less available, have fewer visits with the high school counselor for vocational counseling, and attend a smaller high school. The other background variables were not found to be different between the two comparison groups.

The analysis of the data available from the SVIB showed that on the "like" per-cent response category the decided group scored significantly higher than the experimental group and also higher than the decided students of the experimental group following counseling. On the occupational introversion-extroversion scale the experimental students scored higher than the decided group on the pre-testing, thus supporting previous research which found the undecided student to withdraw in social interaction. Finally, on the two resulting sub groups of decided and undecided for the original decided group, the undecided students scored higher on the masculinity-femininity scale.

The following chapter will present a general summary of the investigation, findings and conclusions, and the implications of this study.

CHAPTER V

SUMMARY AND CONCLUSIONS

General Summary of the Investigation

This study was constructed upon the conceptual framework that the vocationally undecided college student is different from the vocationally decided college student. This conceptual framework was prompted by a review of several studies on the differences of the undecided student.

In an attempt to identify other differences and to further investigate differences already identified, three comparison groups were established. The experimental group consisted of freshmen university students, from the College of Arts and Sciences, who were vocationally undecided at the beginning of the academic year. This was the group that received vocational counseling. The control group also consisted of freshmen Arts and Sciences students who were undecided but they received no vocational counseling throughout the year. The decided group consisted of freshmen university students, from the College of Arts and Sciences, who were vocationally decided at the beginning of the academic year.

The instruments used for this research were a form of the semantic differential (SD), the Strong Vocational

Interest Blank (SVIB), a self report questionnaire on background variables, and the American College Testing self report. All three comparison groups were administered the SD, both pre and post. The experimental and decided group were administered the SVIB and the self reports. Analyses were made on both pre- and post-tests and additional analyses were conducted on the decided students from the experimental group in comparison to the originally decided group. This was an attempt to note if the decided students who evolved from an undecided position through the year, became similar to the originally decided group.

Findings and Conclusions

Summary of Hypotheses Testing

The first portion of this section will deal with the acceptance or rejection of the hypotheses presented in Chapter I. The first four hypotheses dealt with the SD. These hypotheses and the findings are as follows:

There will be no significant difference on measured intellectual orientation, avoidance of risk, desire for security, dependence needs, passiveness in social interaction, withdrawal from social interaction, and self esteem between:

1) decided, experimental and control first semester freshmen students.

   FINDING: The hypothesis was accepted for all parts of the SD.

2) decided and undecided vocationally counseled students.

FINDING: The hypothesis was rejected for passiveness in social interaction.

The hypothesis was accepted for the remaining parts of the SD.

3) decided and undecided students of the control and decided groups after final testing.

FINDING: The hypothesis was accepted for all parts of the SD.

4) uncounseled decided freshmen students and the vocationally counseled decided freshmen students.

FINDING: The hypothesis was rejected for three parts of the SD: intellectual orientation, passiveness in social interaction, and self esteem.

The hypothesis was accepted for the remaining parts of the SD.

Hypothesis 5 dealt with the background variables of the decided and experimental groups. This hypothesis and the findings are as follows:

There will be no significant difference on American College Test scores, high school grades, size of high school, extra curricular activities in high school, extra curricular activity plans in college, size of town of residence, parent's occupational level, parent's educational level, access

to a high school counselor, and frequency of seeing a high school counselor for vocational counseling between:

5) the decided and undecided first semester freshmen students.

FINDING: The hypothesis was rejected for perceived access to the high school counselor, frequency of seeing a high school counselor for vocational counseling, and size of high school.

The hypothesis was accepted for the remaining background variables.

The last four hypotheses dealt with information obtained on the SVIB. These hypotheses and the findings are as follows:

There will be no significant difference on scores from the SVIB on academic achievement, age related interests, masculinity-femininity II, occupational introversion-extroversion, occupational level, like per-cent responses, indifferent per-cent responses, and dislike per-cent responses between:

6) decided and experimental first semester freshmen students.

FINDING: The hypothesis was rejected for two scales of the SVIB: occupational introversion-extroversion and like per-cent response.

The hypothesis was accepted for the remaining scales of the SVIB.

7) decided and undecided vocationally counseled students.

   FINDING: The hypothesis was accepted for all scales of the SVIB.

8) decided and undecided students of the decided group after final testing.

   FINDING: The hypothesis was rejected for masculinity-femininity II. The hypothesis was accepted for the remaining scales of the SVIB.

9) uncounseled decided freshmen students and the vocationally counseled decided freshmen students.

   FINDING: The hypothesis was rejected for the like per-cent response category.

   The hypothesis was accepted for all other scales of the SVIB.

Conclusions

Perhaps the most enlightening finding about the vocationally undecided student that this research produced was in the area of his background variables (Table VII). The study of these students in comparison with the decided students provided the information that they saw their high school counselor less frequently for vocational counseling, perceived their high school counselor as less available, and came from schools in which the graduating class was smaller. Each of these differences between groups on the variables was shown to be significant using the Mann-Whitney U test.

In using this statistical technique to determine if the differences between decided and undecided students occurred by chance, it was found that the probabilities were $p < .041$ for the frequency of seeing the counselor, $p < .007$ for perceived availability of the counselor and $p < .037$ for size of graduating class.

Thus, the conclusion presents itself that the undecided student comes from a smaller high school, as based on the size of his graduating class. In many instances, the smaller high schools have fewer counselors and less counseling time available. Also, many of the small schools in the state of Oklahoma do not have a counselor or if they do have one he often has limited preparation in guidance and counseling. This perhaps explains why they see the counselor less and possibly why they see him as less accessible than do the decided students.

Another possible explanation of the frequency with the counselor and his perceived availability is that the undecided student did not make use of this service while in high school and, thus, was not as far along in the developmental process of vocational decision making.

However, the data based on Table VII of Chapter IV tends to agree with the possibility that less counseling time was available to the undecided student. While not significantly different statistically, two variables approach significance. These are high school counselor's assignment of time to counseling and size of town of residence. A

visual comparison of the sum of ranks for the decided and undecided groups shows the decided group on counselor's assignment of time with a summation of ranks of 1067 as compared to 886 for the experimental group. On the size of the town of residence, the decided group's summated ranks are 1075.50 as compared to 877.50 for the experimental group. In these situations, the higher ranks were for counselors with the majority of their time assigned to counseling and for towns of large populations. While these are weak but not significant differences, they show a trend of the decided group coming from larger towns and having more counseling time available.

In support of certain research conducted earlier and reported in Chapter II, this study found, as did Ashby, Wall and Osipow (1966), Abel (1966), Lyon (1959), and Sharf (1967), that there was no significant difference between the two comparison groups on academic achievement or aptitude. It appears therefore that academic ability does not affect the process of vocational choice. While it may at times be hypothesized that the more academically capable college student knows his direction more readily than his undecided counterpart, this has yet to be supported in research.

On the SD, the only significant score was in a direction opposite to that anticipated as based on the previous research. While it was anticipated that the undecided students, as they became decided, would become more like the decideds it appears they became even less like them. An

explanation for this may reside in the possibility that those undecided students who chose a vocation did so because they had a felt deficiency, thus accounting for the low self esteem. It is possible that this felt need was strong enough to prompt them to choose even though, in their developmental progress, they were not ready to do so.

This premature choice may be connected to the significance reported in Figure 7 and its accompanying discussion, in which the decided students of the experimental group scored higher than other groups on passivity in social interaction. This group, since it is depicted as more passive, may have been easily influenced to choose a major by peers or possibly a counselor.

The information yielded by analyses of SVIB is similar in nature to that provided by earlier research. On the pre-test comparison of the decideds' scores with those of the undecided, the experimental students' scores were found significantly high ($p < .05$) on occupational introversion-extroversion. Thus, they were more comparable to individuals who chose vocations that allowed them to be somewhat withdrawn from other individuals in the work they perform. In this comparison, the undecided students scored more like introverted individuals than the decideds. These results are in accord with those provided by Watley (1965).

Also, the pre-test comparison of the results of the SVIB indicated the decided group on the "like" per-cent response category scored significantly higher ($p < .01$) than

the experimental group. It can be inferred that the decided group makes more positive responses than the experimental or undecided group because it is more confident in decision making in general. This is somewhat substantiated in that when the original decided group was compared on the SVIB with the experimental decided group, the original decided group scored higher ($p < .01$) than the experimental decided group on the "like" per-cent responses. This might have occurred since the experimental decideds had not as yet become proficient in positive decision making or, as has been inferred previously, the decideds from the experimental group may not be characteristic of decided students.

One of the findings, which has importance for the following section on implications resulting from this study, was based on the informal reports from the counselors regarding the experimental group. As a group these students appeared quite different from the undecided students who usually request vocational counseling at the University Counseling Service. The counselors agreed that the experimental group as a whole appeared more outgoing, socially confident and motivated. If this is considered, it is possible that this accounts for the small number of significant differences that were found on the SVIB and SD. One factor that may account for the possible difference of the experimental undecided from the general university undecided student seeking counseling is the fact that the experimental group was composed of volunteers from the undecided

population. This may account for the motivation noticed and the social confidence. Also, to volunteer for the counseling program was something new and different and it is doubtful that someone who avoided risk taking would volunteer. In addition, the more withdrawn and passive individual would possibly avoid such a program. Since Ziller (1957) has shown that the undecided student avoids risks, and Watley (1965) has shown this student to withdraw in social interaction the volunteer students may not have been representative of the undecided student as a whole.

If the student studied was not indicative of the undecided, this may also explain why counseling appears to have had little effect in producing any changes in the individuals which might have been reflected in the measured personality traits and in the interest areas measured by the SVIB. The experimental group may well have been similar in personality variables to the decided student.

Implications

The results of this study hold implications for counseling centers. The vocationally undecided student comes from a smaller school in which less counseling was available. It is also possible that he comes from smaller towns where his explorations of available professional vocations are more limited than those of students from larger towns. Therefore, the counselor realizing these factors, must also realize that vocational counseling fits into and influences

the developmental process of the undecided at a time later in his life than his decided counterpart. The counselor should not direct the undecided student too strongly but rather open up for him the extended possibilities for exploring the vocational world. The simple encouragement to explore new and previously uninvestigated vocational areas may be all that is needed to prompt a new developmental level and allow him to move closer to vocational choice.

It should be emphasized at this point in the presentation of implications that it is not "bad" to be undecided in the earlier part of a collegiate career. The undecided student suffers no disadvantages. As stated earlier in this section, the undecided student may not have had the experiences necessary to make a sound vocational choice, and after experiencing the higher education environment he has more alternative areas from which to make a realistic choice.

The implications to the high school and to the high school counselors are obvious. While it is possible that the undecided student perceived the counselor as somewhat unavailable for vocational counseling simply because he was not in any great need of the counselor's service, it is also strongly possible that the counselor was not, in actuality, available when needed. As pointed out earlier, it is possible that the undecided student's school may not have had a counselor. If a counselor was working in the school he was not perceived as available as was the counselor in the decided students' school. Counselors, even though they are

hard pressed with many duties, must convey to all students that they are usually available when needed. The undecided student indicated he saw his counselor less than did the decided student. It is necessary that the high school counselor and administration be certain that this low frequency resulted from the student's choice, not from counseling inaccessibility.

There are also implications for further research as a result of this study. It is conceivable that this study could be conducted again with a slight amount of modification in the techniques of subject selection and it would provide the certainty that the undecided student studied was of the same population of undecided students the counseling service works with throughout the year. Rather than using volunteer undecided students from a class situation, this study could easily be conducted on the undecided students who sought vocational counseling at a counseling center. As a standard procedure, the instruments used in this study could be administered as a "standard vocational counseling test battery." Then at the end of the year, the previous clients could return at the counselor's request for another progress interview and for final testing. In this way, the researcher would be certain he is studying individuals representative of the undecided student usually seen in the counseling interview.

Also, it was felt by the researcher that the number of participants was too low. A larger number of participants

would have yielded more meaningful results. The procedure of working in the counseling center would allow for a larger number and thus would provide more reliable data.

One final implication for further research is to check the validity of the SD with various standardized scales to be certain it is investigating the trait correctly. While the SD has been shown to be valid by several investigators, the development of the instrument is a subjective compilation by the investigator. To avoid incorrect assessment, the scales could be validated. For example, the items that comprise the social introversion scale of the Minnesota Multiphasic Personality Inventory could be correlated with the withdrawal from social interaction scale of the SD. Also, the abasement and aggression scales of the Edwards Personality Preference Scale could be used for correlation with the self esteem and passivity in social interaction scales, respectively. One reason the SD was used and these instruments were not, is that the SD offered significant savings in test taking time.

Concluding Summary

This study has shown some of the differences that exist between the vocationally undecided freshman student and the vocationally decided freshman student. The undecided student was found to come from smaller high schools. He had a lower frequency of seeing his high school counselor for vocational counseling. Also, he perceived his counselor as

less available for vocational counseling. With this as a fact, supported by the research data of this study, the implication for increased counseling time in smaller high schools is paramount.

In support of previous research, this study found there was no relationship between vocational decision and academic achievement or aptitude. Also, using data from the SVIB, it was found that the undecided student shows a tendency to be more introverted than the decided student, a fact that was identified in previous research. The SVIB also showed the undecided student as consistently answering less "like" responses than the decided student.

This study was conducted in an attempt to aid counselors in their work with the vocationally undecided student. It is hoped that the results will be useful to those interested in the area of vocational counseling. Finally, it is hoped that this study will be an aid to those who conduct future studies involving the vocationally undecided student.

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A P P E N D I X A

SELF REPORT QUESTIONNAIRE

COUNSELING SERVICE
Oklahoma State University

Name_____ Age____ Sex____

Present Campus Address_____ Phone_____

Permanent Address_____

Father's Occupation_____

Describe Briefly His Duties_____

_____

Father's Educational Level_____
(highest grade completed)

Mother's Occupation_____

Explain Briefly Her Duties_____

Mother's Educational Level_____
(highest grade completed)

Check the correct space describing your high school counselor.

_____Full-time counselor
_____Half-time counselor and half-time teacher
_____One-fourth or less time as counselor
_____Served as counselor, but had no actual assignment for it.

Check the number of times you saw your high school counselor regarding vocational counseling and/or guidance.

_____Once a week
_____Once a month
_____Once a semester
_____Once a year
_____Not at all

Check the appropriate space.

My high school counselor was:

_____always available for vocational counseling.
_____usually available for vocational counseling.
_____seldom available for vocational counseling.
_____never available for vocational counseling.

How decided are you vocationally?

1 2 3 4 5 6 7

Undecided Decided

A P P E N D I X B

POST-TESTING QUESTIONNAIRE

COUNSELING SERVICE

Oklahoma State University

NAME_____ AGE____ SEX____
(last) (first)

Present Campus Address_____ PHONE_____

Permanent Address (for at least next three years)_____

_____

How decided are you vocationally at this time?

Undecided 1 2 3 4 5 6 7 Decided

Have you sought any vocational counseling since September?

_____
(yes or no)

If yes, approximately when (by month)_____

By whom (e.g., University Counseling Service, Student Personnel Counselor, etc.)_____

A P P E N D I X C

LETTER SENT REQUESTING STUDENTS TO BECOME MEMBERS OF THE CONTROL GROUP

Dear

Last month I talked with you and other vocationally undecided students during Arts and Science Orientation Class regarding a new program in vocational selection. We have used random selection to obtain our participating group and I am sorry to inform you that you are not one of the participants. However, you can still be of tremendous help to us in this program if you will take ten minutes of your time to fill in the accompanying questionnaire.

If you fill out this questionnaire and return it through campus mail to:

Rex Finnegan
370 Student Union

you will become an indirect participant and will help in providing information we need to further develop this program.

Simply fill out this questionnaire as honestly as you can and please do not put your name on it as we'd like to keep these tests anonymous. The number at the top of the test identifies you only as a participant for informational purposes so we will know later on who participated when we need to contact you for follow-up information. We will not identify your number with your test. You will remain completely anonymous.

Thank you for your time. I hope you choose to become a part of the program by providing this information.

Sincerely yours,

/s/ Rex T. Finnegan

Rex T. Finnegan
Counselor, Counseling Service

A P P E N D I X D

THE SEVENTY-SIX BI-POLAR ADJECTIVE PAIRS OF OSGOOD, SUCI AND TANNENBAUM FROM WHICH THE SD WAS DRAWN

SEVENTY-SIX ADJECTIVE PAIRS

1.	good	bad
2.	optimistic	pessimistic
3.	complete	incomplete
4.	timely	untimely
5.	altruistic	egotistic
6.	sociable	unsociable
7.	kind	cruel
8.	grateful	ungrateful
9.	harmonious	dissonant
10.	clean	dirty
11.	light	dark
12.	graceful	awkward
13.	pleasurable	painful
14.	beautiful	ugly
15.	successful	unsuccessful
16.	high	low
17.	meaningful	meaningless
18.	important	unimportant
19.	progressive	regressive
20.	true	false
21.	positive	negative
22.	reputable	disreputable
23.	believing	skeptical
24.	wise	foolish
25.	healthy	sick
26.	hard	soft
27.	strong	weak
28.	severe	lenient
29.	tenacious	yielding
30.	constrained	free
31.	constricted	spacious
32.	heavy	light
33.	serious	humorous
34.	opaque	transparent

35.	large	small
36.	masculine	feminine
37.	active	passive
38.	excitable	calm
39.	hot	cold
40.	intentional	unintentional
41.	fast	slow
42.	complex	simple
43.	sober	drunk
44.	stable	changeable
45.	rational	intuitive
46.	sane	insane
47.	cautious	rash
48.	orthodox	heretical
49.	angular	rounded
50.	straight	curved
51.	sharp	blunt
52.	new	old
53.	unusual	usual
54.	youthful	mature
55.	savory	tasteless
56.	refreshed	weary
57.	colorful	colorless
58.	interesting	boring
59.	pungent	bland
60.	sensitive	insensitive
61.	aggressive	defensive
62.	ornate	plain
63.	near	far
64.	heterogeneous	homogeneous
65.	tangible	intangible
66.	inherent	extraneous
67.	wet	dry
68.	symmetrical	asymmetrical
69.	competitive	cooperative
70.	formed	formless

71.	periodic	erratic
72.	sophisticated	naive
73.	public	private
74.	humble	proud
75.	objective	subjective
76.	thrifty	generous

A P P E N D I X E

THE SEMANTIC DIFFERENTIAL USED IN THIS STUDY

INSTRUCTIONS

The purpose of this questionnaire is to measure the meanings of certain things to various people by having them judge them against a series of descriptive scales. In taking this questionnaire, please make your judgments on the basis of what these things mean to you. You are to rate the concept on each of these scales in order.

Here is how you are to use these scales:

SAMPLE QUESTION:

To me, democracy is

fair 1 2 3 4 5 6 7 unfair

1 = very fair
2 = quite fair
3 = somewhat fair
4 = undecided
5 = somewhat unfair
6 = quite unfair
7 = very unfair

Therefore:

fair 1 X 3 4 5 6 7 unfair

this person feels that democracy is quite fair.

If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, then you should place your check mark over # 4.

IMPORTANT:

(1) Place your check marks through the numbers, not in the spaces:

THIS NOT THIS

1 2 X 4 5 6 x 7

(2) Be sure you check every scale for every concept--do not omit any.

(3) Never put more than one check mark on a single scale.

Make each item a separate and independent judgment. Work at fairly high speed through this questionnaire. Do

not worry or puzzle over individual items. It is your first impressions, the immediate feelings about the item that are desired. On the other hand, please do not be careless, because your true impressions are needed.

Please turn the page and begin.

(A)

EDUCATION FOR OCCUPATIONS

A college or university education is primarily designed to teach the skills necessary for a particular occupation rather than providing a liberal arts type of education. In my opinion, I find this type of education:

good	1 2 3 4 5 6 7	bad
meaningless	1 2 3 4 5 6 7	meaningful
complete	1 2 3 4 5 6 7	incomplete
insensitive	1 2 3 4 5 6 7	sensitive
positive	1 2 3 4 5 6 7	negative
foolish	1 2 3 4 5 6 7	wise
optimistic	1 2 3 4 5 6 7	pessimistic
unsuccessful	1 2 3 4 5 6 7	successful
progressive	1 2 3 4 5 6 7	regressive
weak	1 2 3 4 5 6 7	strong

(B)

RISK TAKING

Something you can do requires taking a risk to do it. If successful, it will yield a reward, and failure will in some way cause a loss. Risk taking for me is:

complex	1 2 3 4 5 6 7	simple
wise	1 2 3 4 5 6 7	foolish
unusual	1 2 3 4 5 6 7	usual
pleasurable	1 2 3 4 5 6 7	painful
insane	1 2 3 4 5 6 7	sane
serious	1 2 3 4 5 6 7	humorous
awkward	1 2 3 4 5 6 7	graceful
good	1 2 3 4 5 6 7	bad
unsuccessful	1 2 3 4 5 6 7	successful
old	1 2 3 4 5 6 7	new

(C)

OCCUPATIONAL SECURITY

Several factors are important in deciding upon a particular occupation; these may be salary, promotions, location, certainty of continuous employment, etc. Supposing in my own future situation, my job offers me absolute

certainty of continuous employment, then this job for me would be:

usual	1 2 3 4 5 6 7	unusual
pleasurable	1 2 3 4 5 6 7	painful
meaningless	1 2 3 4 5 6 7	meaningful
interesting	1 2 3 4 5 6 7	boring
bad	1 2 3 4 5 6 7	good
progressive	1 2 3 4 5 6 7	regressive
foolish	1 2 3 4 5 6 7	wise
complete	1 2 3 4 5 6 7	incomplete
unsuccessful	1 2 3 4 5 6 7	successful
positive	1 2 3 4 5 6 7	negative

(D)

LEADERSHIP

In relationships with others, at times they take the lead and at other times I lead. To have others dependent on me is:

unusual	1 2 3 4 5 6 7	usual
wise	1 2 3 4 5 6 7	foolish
regressive	1 2 3 4 5 6 7	progressive
pleasurable	1 2 3 4 5 6 7	painful
awkward	1 2 3 4 5 6 7	graceful
successful	1 2 3 4 5 6 7	unsuccessful
bad	1 2 3 4 5 6 7	good
simple	1 2 3 4 5 6 7	complex
new	1 2 3 4 5 6 7	old

(E)

FRIENDSHIPS

In relationships with others, I am:

active	1 2 3 4 5 6 7	passive
cooperative	1 2 3 4 5 6 7	competitive
fast	1 2 3 4 5 6 7	slow
defensive	1 2 3 4 5 6 7	aggressive
hot	1 2 3 4 5 6 7	cold
cautious	1 2 3 4 5 6 7	rash

timely	1 2 3 4 5 6 7	untimely
calm	1 2 3 4 5 6 7	excitable

(F)

ASSOCIATION WITH OTHERS

A person may tend to have only one or two friends, or he may have many. If I have one or two friends I see this as:

usual	1 2 3 4 5 6 7	unusual
unsociable	1 2 3 4 5 6 7	sociable
wise	1 2 3 4 5 6 7	foolish
unsuccessful	1 2 3 4 5 6 7	successful
strong	1 2 3 4 5 6 7	weak
boring	1 2 3 4 5 6 7	interesting
pleasurable	1 2 3 4 5 6 7	painful
bad	1 2 3 4 5 6 7	good
complete	1 2 3 4 5 6 7	incomplete
regressive	1 2 3 4 5 6 7	progressive
old	1 2 3 4 5 6 7	new

(G)

MYSELF

In thinking about myself, I see myself as:

sophisticated	1 2 3 4 5 6 7	naive
incomplete	1 2 3 4 5 6 7	complete
interesting	1 2 3 4 5 6 7	boring
unsuccessful	1 2 3 4 5 6 7	successful
kind	1 2 3 4 5 6 7	cruel
unimportant	1 2 3 4 5 6 7	important
good	1 2 3 4 5 6 7	bad
foolish	1 2 3 4 5 6 7	wise
meaningful	1 2 3 4 5 6 7	meaningless
regressive	1 2 3 4 5 6 7	progressive

A P P E N D I X F

CATEGORIES USED FOR STATISTICS ON SELF REPORT DATA

CATEGORIES USED FOR STATISTICS

ON SELF REPORT DATA

Parents educational level:

0 - No education
1 - Completed eighth grade
2 - Completed high school
3 - Two years of college or Technical School
4 - Completed college (Bachelor's degree)
5 - Graduate School

The assignment of time of the student's high school counselor to counseling:

0 - No actual assignment as counselor
1 - One quarter time assignment as counselor
2 - One half time assignment as counselor
3 - Full time assignment as counselor

The availability of the student's high school counselor for vocational counseling:

0 - Never available
1 - Seldom available
2 - Usually available
3 - Always available

The student's frequency of seeing his high school counselor for vocational counseling:

0 - Never saw counselor
1 - Saw counselor once a year
2 - Saw counselor once a semester
3 - Saw counselor once a month
4 - Saw counselor once a week

A P P E N D I X G

CATEGORIES USED FOR STATISTICS ON ACT SELF REPORT DATA

CATEGORIES USED FOR STATISTICS ON ACT SELF REPORT DATA

Size of high school by graduating class:

1 - Fewer than 25
2 - 25 to 99
3 - 100 to 399
4 - 400 or more

Extra curricular activities in high school:

Used actual number of involvements reported

Anticipated extra curricular activities in college:

Used actual number of involvements anticipated

A P P E N D I X H

CATEGORIES DEVELOPED BY MURPHY FOR CATEGORIZING TOWNS BY SIZE OF POPULATION

CATEGORIES DEVELOPED BY MURPHY FOR
CATEGORIZING TOWNS BY SIZE
OF POPULATION

1	On a farm or in the country
2	Town of less than 3,000 population
3	Town of more than 3,000 and up to 25,000 population
4	City of 25,000 to 50,000 population
5	City of over 50,000 population

A P P E N D I X I

NORC SCALE OF OCCUPATIONS

NORC SCALE OF OCCUPATIONS

Occupation	Score
High Socio-Economic Level	
U. S. Supreme Court justice	96
Physician	93
State governor	93
Cabinet member in the federal government	92
Diplomat in the U. S. Foreign Service	92
Mayor of a large city	90
College professor	89
Scientist	89
United States representative in Congress	89
Banker	88
Government scientist	88
County judge	87
Head of a department in a state government	87
Minister	87
Architect	86
Chemist	86
Dentist	86
Lawyer	86
Member of board of directors of large corporation	86
Nuclear physicist	86
Priest	86
Psychologist	85
Civil engineer	84
Airline pilot	83
Artist who paints pictures that are exhibited in galleries	83
Owner of factory that employs about 100 people	82
Sociologist	82
Accountant for large business	81
Biologist	81
Musician in a symphony orchestra	81
Author of novels	80
Captain in the regular army	80
Building contractor	79
Economist	79
Instructor in public schools	79
Public-school teacher	78
County agricultural agent	77
Railroad engineer	77
Farm-owner and operator	76
Official of an international labor union	75
Radio announcer	75
Newspaper columnist	75
Owner-operator of a printing shop	74

Occupation	Score
Middle Socio-Economic Level	
Electrician	73
Trained machinist	73
Welfare worker for a city government	73
Undertaker	72
Reporter on daily newspaper	71
Manager of small store in a city	69
Bookkeeper	68
Insurance agent	68
Tenant farmer - one who owns livestock and machinery and manages the farm	68
Traveling salesman for a wholesale concern	68
Playground director	67
Policeman	67
Railroad conductor	67
Mail-carrier	66
Carpenter	65
Automobile repairman	63
Plumber	63
Low Socio-Economic Level	
Garage mechanic	62
Local official of labor union	62
Owner-operator of lunch stand	62
Corporal in the regular army	60
Machine operator in factory	60
Barber	59
Clerk in a store	58
Fisherman who owns own boat	58
Streetcar motorman	58
Milk-route man	54
Restaurant cook	54
Truck-driver	54
Lumberjack	53
Filling-station attendant	52
Singer in a night club	52
Farm hand	50
Coal miner	49
Taxi-driver	49
Railroad section hand	48
Restaurant waiter	48
Dockworker	47
Night watchman	47
Clothes-presser in a laundry	46
Soda-fountain clerk	45
Bartender	44
Janitor	44
Share-cropper - one who owns no livestock or equipment and does not manage farm	40
Garbage collector	35
Street-sweeper	34
Shoe-shiner	33

A P P E N D I X J

ACCUMULATED DATA BY GROUPS

SELF REPORT AND BACKGROUND DATA FOR
THE EXPERIMENTAL GROUP

	ACT Scores	H.S. Grades	Size of High School	Extra Curr. H.S.	Extra Curr. College	Size of Town	Parents Occup. Level	Parents Educ. Level	Access to H.S. Coun.	f of Seeing Coun.	Assign-ment of Coun.	How Decided Pre	How Decided Post
1	21	4.00	3	22	4	3	2	4	1	2	3	3	5
2	24	3.50	4	3	4	5	2	3	2	2	2	3	5
3	23	2.75	1	8	1	1	1	2	2	2	0	3	6
4	24	3.45	4	10	2	5	2	4	2	2	3	2	5
5 *	23	3.70	4	10	0	5	2	2	2	3	3	2	2
6 *	26	2.25	3	4	1	4	3	4	3	2	3	2	3
7	20	2.85	3	3	3	3	3	5	2	1	0	1	6
8	29	3.86	4	10	3	5	3	4	3	0	3	2	6
9 *	27	3.95	4	21	5	5	3	5	2	2	3	2	3
10 *	28	3.85	2	13	1	2	2	3	2	2	3	2	2
11	22	3.70	2	12	1	3	3	5	2	1	2	2	5
12 *	15	2.30	3	2	1	2	2	2	1	2	3	2	3
13	21	2.70	3	1	2	4	2	2	3	1	1	1	5
14	30	3.90	2	3	1	1	2	4	2	0	3	2	7
15 *	22	3.65	2	6	1	2	2	3	0	0	0	1	1
16 *	24	3.66	2	8	1	5	2	3	1	2	1	1	1
17	23	2.75	4	14	1	5	3	5	2	3	3	2	7
18 *	23	3.20	4	1	1	4	2	2	2	2	3	2	1
19 *	28	3.65	2	8	1	2	2	3	2	0	0	1	1
20	25	3.50	2	2	1	3	2	3	3	2	3	1	7
21 *	23	3.11	4	17	3	3	2	3	3	1	3	1	3
22 *	21	3.84	2	8	2	3	2	2	2	2	3	1	2
23	23	4.00	3	12	3	3	3	4	2	1	1	3	6
24 *	25	2.78	4	10	1	5	2	3	1	0	3	1	3
25 *	22	4.00	2	8	2	2	2	5	0	0	0	1	2
26 *	18	2.66	3	16	1	3	2	4	2	1	1	1	2
27 *	23	3.71	4	14	3	5	3	2	3	3	3	2	3
28	22	3.25	1	9	2	2	1	2	2	2	0	1	5
29 *	22	1.95	4	0	0	5	1	2	3	2	3	2	2
30	22	3.28	4	7	3	5	2	3	3	1	3	2	5
31 *	18	3.16	2	4	1	3	3	4	2	3	3	2	4

* Remained undecided.

SELF REPORT AND BACKGROUND DATA FOR
THE DECIDED GROUP

	ACT Scores	H.S. Grades	Size of High School	Extra Curr. H.S.	Extra Curr. College	Size of Town	Parents Occup. Level	Parents Educ. Level	Access to H.S. Coun.	f of Seeing Coun.	Assign-ment of Coun.	How Decided Pre	How Decided Post
1	19	1.87	3	1	0	4	2	2	2	2	3	5	6
2	18	2.65	3	4	0	4	3	5	3	2	3	6	7
3 *	25	3.40	4	10	3	5	2	4	1	2	3	5	1
4 *	28	2.90	4	5	1	4	2	2	3	3	3	6	2
5	23	3.42	3	17	3	3	3	5	2	3	3	6	5
6	20	3.00	2	6	2	4	3	4	2	3	3	6	5
7	23	3.51	4	9	1	5	3	5	1	2	3	6	4
8	24	3.50	4	8	1	4	2	3	3	3	2	7	5
9	22	2.20	4	19	3	5	3	5	3	2	3	7	6
10	14	2.60	1	17	0	1	2	2	3	4	1	6	6
11	18	2.45	4	4	0	3	1	4	3	1	2	7	7
12	26	2.23	4	2	3	5	2	2	3	4	3	5	6
13	25	3.76	4	11	1	5	3	5	3	1	3	6	7
14 *	17	2.70	3	11	3	3	2	2	2	3	3	5	2
15	22	3.41	1	11	1	2	1	2	3	4	0	7	7
16	24	3.80	4	9	2	4	1	2	2	2	3	7	7
17	19	3.20	4	5	0	5	2	3	3	1	3	7	7
18	18	2.00	4	3	0	4	2	2	1	1	1	7	6
19	17	2.69	4	3	0	5	3	5	3	1	3	6	7
20 *	25	3.90	3	10	2	3	1	2	3	2	3	5	3
21 *	27	3.50	4	3	0	5	2	3	3	1	3	5	3
22	23	3.42	4	11	1	5	3	5	2	0	3	7	7
23	19	2.72	4	9	2	5	2	2	3	2	3	7	7
24	19	3.20	3	4	2	5	3	5	3	2	3	5	5
25 *	26	3.50	2	18	2	1	2	3	2	1	0	5	2
26	23	2.67	4	7	2	5	2	2	3	2	3	7	7
27	18	2.40	4	5	0	5	2	4	3	2	3	7	7
28	23	3.39	4	15	3	4	3	2	2	2	3	7	6
29 *	23	2.67	4	5	1	5	2	4	3	3	3	5	3
30	27	3.77	4	23	4	3	2	3	3	2	3	7	6
31	26	3.95	2	26	1	2	2	4	2	2	2	7	6

* Became undecided through the year.

SEMANTIC DIFFERENTIAL PRE-TEST SCORES
FOR THE EXPERIMENTAL GROUP

	Intell. Orientation I	Avoid of Risk II	Desire for Security III	Dependence Needs IV	Passive in Soc. Inter. V	Withdr. in Soc. Inter. VI	Self Esteem VII
1	3.10	5.00	5.10	3.66	3.25	1.45	2.30
2	4.00	4.10	4.00	3.67	3.75	5.81	3.80
3	5.50	3.30	3.70	3.22	3.50	2.09	1.90
4	1.10	3.70	6.70	3.44	2.87	3.18	1.70
5	3.20	4.20	4.10	2.77	3.12	1.90	3.60
6	3.46	3.70	5.80	2.77	3.87	1.81	3.10
7	1.90	2.80	5.80	5.77	3.00	2.63	1.90
8	2.20	4.20	4.30	3.22	3.75	1.54	2.80
9	3.50	2.00	6.40	1.88	3.62	2.63	2.30
10	5.10	2.60	3.20	2.00	2.37	2.45	1.60
11	2.40	3.60	5.50	4.00	5.25	4.81	3.50
12	2.00	2.60	2.00	2.55	3.12	2.45	3.00
13	3.10	4.70	6.00	3.66	3.50	3.36	3.20
14	2.60	5.80	5.70	4.11	4.37	5.72	4.40
15	2.50	5.60	2.40	2.33	3.87	2.54	2.10
16	5.20	3.50	4.00	3.66	4.00	2.72	3.70
17	1.80	2.40	4.40	2.00	3.00	6.81	1.80
18	2.20	3.70	6.10	2.33	3.62	2.72	3.10
19	3.40	2.50	3.60	3.11	3.50	4.90	2.90
20	1.80	3.60	3.70	3.55	3.87	3.00	4.00
21	4.00	4.00	3.80	3.44	3.37	3.45	3.70
22	4.30	4.10	4.10	3.33	3.75	3.76	3.10
23	2.00	4.10	4.70	3.00	3.62	3.27	3.60
24	4.10	3.40	5.10	3.88	3.25	2.81	4.00
25	3.60	4.90	2.60	2.11	4.87	1.81	2.80
26	3.00	5.40	4.70	4.00	5.37	3.90	3.80
27	1.60	3.80	4.50	2.22	2.87	2.72	2.30
28	5.70	4.10	4.40	2.77	5.00	6.00	3.60
29	2.10	2.70	3.10	4.11	4.50	2.27	3.90
30	2.80	2.70	5.50	3.33	3.75	2.81	2.70
31	4.40	4.20	4.50	3.77	3.37	1.54	1.70

SEMANTIC DIFFERENTIAL POST-TEST SCORES
FOR THE EXPERIMENTAL GROUP

	Intell. Orientation I	Avoid of Risk II	Desire for Security III	Dependence Needs IV	Passive in Soc. Inter. V	Withdr. in Soc. Inter. VI	Self Esteem VII
Decided							
1	6.80	4.40	4.00	3.33	3.62	1.36	2.10
2	5.80	3.20	4.00	3.11	5.75	6.91	5.10
3	5.00	3.50	2.80	2.67	3.62	2.45	2.50
4	2.10	4.30	5.50	3.33	4.37	3.27	2.40
5	1.20	3.60	6.30	2.11	3.12	1.54	3.00
6	2.60	5.40	5.80	2.77	3.87	3.00	3.40
7	4.20	3.70	5.50	4.00	5.50	5.81	3.50
8	5.00	3.70	6.00	4.11	3.37	4.54	3.50
9	3.20	3.10	3.70	3.67	4.37	5.18	3.40
10	4.30	4.00	5.50	2.78	3.87	3.45	1.80
11	2.00	3.60	4.40	3.11	5.25	2.82	3.20
12	4.00	4.20	4.50	3.22	3.62	2.64	3.60
13	4.70	3.80	4.20	3.11	2.87	3.54	4.50
14	2.90	2.60	5.50	3.00	3.25	2.73	2.50
Undecided							
1	3.80	3.80	5.00	2.89	3.37	2.45	2.90
2	1.80	5.00	2.90	2.55	3.37	6.45	2.40
3	3.90	3.30	6.40	2.55	3.75	2.00	3.00
4	7.00	1.20	1.70	1.44	2.12	6.00	1.50
5	4.00	3.00	4.90	2.33	3.50	2.27	2.80
6	2.80	6.10	2.10	1.44	3.62	1.27	1.90
7	5.90	3.90	3.60	2.22	3.37	2.18	3.40
8	1.30	3.20	4.60	2.67	4.37	1.27	3.20
9	4.30	2.90	2.70	2.67	3.37	2.45	3.20
10	3.10	3.80	2.80	3.33	3.37	4.27	3.20
11	3.40	3.70	4.60	3.55	4.12	3.54	2.60
12	5.40	3.60	4.50	3.67	3.37	5.09	3.70
13	4.40	4.40	4.70	2.89	4.25	2.73	3.40
14	2.70	4.30	5.10	3.55	4.37	4.18	3.90
15	2.30	3.60	2.80	2.44	2.62	3.09	2.80
16	2.30	3.40	3.60	3.11	3.62	2.64	3.30
17	2.60	2.50	6.20	2.22	2.50	1.45	1.40

SEMANTIC DIFFERENTIAL PRE-TEST SCORES
FOR THE DECIDED GROUP

	Intell. Orienta-tion I	Avoid of Risk II	Desire for Security III	Depend-ence Needs IV	Passive in Soc. Inter. V	Withdr. in Soc. Inter. VI	Self Esteem VII
1	2.80	3.90	2.70	3.67	4.25	4.27	2.80
2	3.30	3.70	3.00	4.11	2.75	3.09	3.10
3	2.60	2.40	3.10	3.00	3.00	5.09	1.50
4	2.10	3.90	6.10	3.66	4.00	4.18	2.80
5	2.30	2.10	4.10	2.31	3.31	1.94	2.70
6	2.20	4.20	6.10	4.22	5.25	1.45	4.30
7	4.90	3.10	2.00	4.33	4.00	3.27	3.00
8	3.20	3.90	2.40	3.56	3.87	2.36	2.90
9	3.40	3.00	3.70	3.33	3.37	3.82	2.90
10	2.90	3.60	5.90	2.00	2.87	1.55	2.30
11	1.40	3.40	5.00	6.33	2.62	2.19	1.00
12	4.10	3.30	1.60	1.89	1.00	1.54	2.70
13	3.30	4.20	5.20	3.11	3.75	2.72	3.50
14	4.70	4.10	4.90	3.55	3.87	1.64	2.00
15	1.70	3.20	5.40	3.56	3.88	3.64	2.60
16	3.20	2.10	4.00	2.00	3.75	2.54	2.70
17	2.20	3.30	4.40	3.56	3.75	2.09	3.30
18	1.00	1.90	6.40	3.67	2.38	1.82	1.40
19	1.80	4.50	5.50	3.55	4.25	3.54	2.80
20	1.70	1.30	4.90	1.67	1.75	2.64	1.00
21	1.50	4.00	3.90	3.11	3.62	2.36	2.50
22	1.70	3.70	2.20	1.44	3.88	3.55	2.10
23	1.60	3.10	6.00	2.33	3.13	6.45	2.00
24	2.80	3.70	3.50	2.88	4.12	4.45	2.30
25	2.20	3.30	5.80	2.78	3.75	1.63	2.50
26	4.50	5.00	5.40	2.88	3.87	3.72	3.50
27	2.10	4.80	6.30	3.11	3.12	2.45	2.20
28	2.00	3.50	5.60	2.22	3.37	2.45	2.40
29	3.00	2.50	5.90	3.22	3.87	2.63	3.90
30	6.10	2.70	2.70	2.77	2.87	6.27	2.60
31	1.90	2.20	1.80	2.55	3.37	1.72	2.10

SEMANTIC DIFFERENTIAL POST-TEST SCORES
FOR THE DECIDED GROUP

	Intell. Orientation I	Avoid of Risk II	Desire for Security III	Dependence Needs IV	Passive in Soc. Inter. V	Withdr. in Soc. Inter. VI	Self Esteem VII
Decided							
1	2.80	4.00	5.40	3.33	4.12	4.40	3.40
2	2.50	2.70	4.70	2.67	4.25	4.18	2.30
3	2.40	3.50	3.30	3.00	3.62	2.54	3.10
4	4.00	4.40	5.20	4.44	4.25	1.73	4.50
5	4.60	3.00	2.50	2.89	3.12	2.36	3.10
6	3.20	3.90	4.20	3.67	3.87	3.09	2.90
7	5.20	3.70	3.90	3.33	3.75	4.10	2.40
8	2.20	3.10	4.60	2.55	3.75	2.91	2.60
9	1.30	2.90	5.80	2.67	3.50	4.54	2.60
10	1.70	2.00	5.20	2.55	1.87	3.36	1.80
11	3.50	4.30	5.10	3.00	4.11	2.36	3.00
12	4.20	3.30	6.90	3.00	2.25	1.73	2.20
13	2.50	2.00	5.30	2.00	2.62	2.00	2.10
14	1.30	2.50	5.90	1.44	3.75	1.00	3.00
15	2.90	4.00	4.60	2.89	2.87	2.64	2.10
16	2.50	4.40	4.00	3.44	3.75	4.18	3.30
17	2.20	4.20	2.60	2.00	4.12	3.91	2.20
18	2.00	3.70	6.00	2.33	2.50	1.27	2.00
19	3.20	4.00	2.80	3.22	4.00	4.64	2.40
20	1.40	5.30	5.50	3.55	3.75	3.82	3.90
21	4.50	4.80	6.90	3.77	3.37	2.73	3.70
22	3.50	3.20	3.40	2.89	3.37	4.54	2.80
23	5.70	1.50	1.90	2.55	3.62	6.09	2.40
24	2.40	2.10	2.80	1.78	2.50	1.45	2.10
Undecided							
1	3.70	3.30	3.70	3.78	3.50	3.18	2.10
2	2.90	2.80	4.40	3.67	3.87	3.30	2.90
3	3.00	3.50	4.10	4.11	5.62	3.64	3.10
4	3.10	2.20	3.80	2.66	2.62	1.54	2.40
5	1.70	2.30	5.90	2.00	3.25	2.64	2.30
6	3.50	2.90	5.40	3.11	3.50	1.27	2.80
7	4.60	3.40	4.80	3.33	3.87	5.50	4.30

SEMANTIC DIFFERENTIAL PRE-TEST SCORES AND AMOUNT OF DECIDEDNESS FOR THE CONTROL GROUP

	Intell. Orientation I	Avoid of Risk II	Desire for Security III	Dependence Needs IV	Passive in Soc. Inter. V	Withdr. in Soc. Inter. VI	Self Esteem VII	How Decided Pre	How Decided Post
1	5.50	2.80	3.50	3.44	4.00	3.45	4.00	3	5
2	2.70	3.40	6.60	2.67	4.00	1.36	2.10	2	3
3	2.90	2.10	3.70	4.00	3.00	2.27	2.00	3	7
4	5.20	3.50	6.10	2.44	3.75	1.82	2.20	2	7
5	3.40	3.70	4.80	3.09	3.75	3.91	3.30	2	6
6	2.90	4.10	5.80	4.44	4.00	1.82	3.60	3	3
7	2.60	3.60	6.00	2.77	4.00	2.45	2.30	1	1
8	5.40	2.60	4.00	2.11	2.87	3.45	2.70	2	2
9	5.00	2.80	4.20	3.44	3.87	4.18	3.50	1	3
10	3.40	4.60	5.40	3.55	4.37	4.64	3.20	1	1
11	2.90	2.30	7.00	2.77	3.37	3.30	2.40	2	2
12	5.10	4.60	6.20	4.11	4.37	6.64	3.30	1	3
13	1.80	3.80	2.50	2.67	3.37	3.27	1.90	1	1
14	3.60	4.30	4.40	3.44	4.37	4.82	3.10	3	2
15	3.70	1.80	2.60	1.78	3.12	6.60	1.60	3	7
16	3.80	4.10	4.70	3.33	4.12	3.64	3.50	2	5
17	3.20	3.00	5.90	3.44	4.37	5.64	3.10	2	3
18	2.00	4.00	4.90	3.44	3.75	1.73	3.40	3	6
19	3.40	2.90	3.00	4.11	4.37	4.64	3.10	2	2
20	2.70	4.00	5.30	4.00	4.00	2.82	2.40	2	3
21	3.50	3.30	3.90	3.33	3.25	3.30	3.60	1	3
22	2.60	4.20	4.70	2.33	3.50	2.64	2.20	2	7
23	3.80	3.10	4.40	3.66	4.00	3.36	3.90	2	5
24	3.50	3.40	5.40	2.66	4.00	3.27	2.70	1	2
25	2.80	2.80	2.50	3.09	3.87	5.09	3.40	2	1
26	5.00	3.70	4.20	4.22	4.12	3.54	3.20	2	2
27	1.80	3.50	4.40	4.11	2.70	4.64	1.90	1	7
28	1.60	2.80	4.10	2.11	4.12	2.20	4.20	1	3
29	4.00	3.00	2.30	3.67	3.37	4.27	3.10	2	3
30	4.10	2.40	2.00	2.00	3.37	5.64	2.90	2	5
31	2.10	3.40	5.90	2.89	3.62	2.36	3.10	2	4

SEMANTIC DIFFERENTIAL POST-TEST SCORES
FOR THE CONTROL GROUP

	Intell. Orientation I	Avoid of Risk II	Desire for Security III	Dependence Needs IV	Passive in Soc. Inter. V	Withdr. in Soc. Inter. VI	Self Esteem VII
Decided							
1	6.90	1.50	3.70	1.22	3.25	2.64	4.00
2	2.70	3.20	5.40	2.22	3.87	1.54	1.60
3	4.30	3.50	4.00	2.67	3.75	2.20	2.30
4	2.80	3.70	5.00	3.55	4.37	2.91	3.40
5	4.60	1.80	3.60	1.67	3.12	6.60	1.40
6	4.20	4.00	4.00	3.78	4.37	4.64	3.40
7	1.90	4.70	4.50	4.11	3.37	1.91	3.20
8	2.00	4.00	4.40	2.22	3.37	3.09	2.80
9	3.80	3.20	4.70	3.78	3.62	3.45	3.70
10	2.30	3.90	5.10	6.10	4.00	5.45	2.70
11	4.90	3.00	2.50	2.44	3.75	5.45	2.90
Undecided							
1	5.00	3.40	5.20	2.22	4.25	1.64	2.60
2	1.90	3.20	6.20	4.00	3.37	2.18	3.20
3	3.10	3.30	5.30	2.78	4.00	2.91	2.30
4	5.20	2.50	3.70	2.89	2.75	4.18	2.70
5	4.70	3.50	4.00	3.44	3.87	4.27	3.60
6	2.80	5.30	4.80	3.44	4.50	4.64	3.20
7	2.10	3.90	6.30	2.44	3.50	3.73	2.40
8	4.80	4.50	3.90	4.11	4.25	2.91	2.30
9	3.30	3.40	2.60	2.44	4.25	2.73	2.20
10	4.00	4.20	6.10	2.78	4.75	5.09	2.90
11	3.00	2.60	6.00	3.11	3.87	5.82	3.50
12	3.40	3.00	3.20	3.55	4.00	4.54	3.00
13	3.70	4.30	4.50	3.67	4.12	4.27	3.40
14	2.80	2.80	3.40	2.67	3.37	2.73	3.00
15	3.20	3.50	4.10	3.78	4.12	3.45	2.70
16	3.20	2.70	2.70	3.44	3.62	5.27	3.10
17	3.10	3.90	5.30	2.89	4.25	4.45	2.60
18	2.40	3.30	4.90	2.67	3.25	3.27	3.10
19	3.90	3.20	3.00	3.44	3.37	4.45	2.80
20	4.70	3.90	5.80	3.33	3.37	2.64	2.70

STRONG VOCATIONAL INTEREST BLANK PRE-TEST
SCORES FOR THE EXPERIMENTAL GROUP

	AACH	AR	MFII	OIE	OL	Like %	In-diff. %	Dis-Like %
1	45	41	40	40	61	24	21	55
2	34	34	34	55	47	28	43	29
3	35	35	65	49	46	18	49	33
4	47	20	68	61	59	16	16	68
5	35	33	46	41	61	18	15	67
6	43	39	61	64	50	21	33	46
7	35	43	70	36	57	14	43	43
8	36	29	40	45	61	25	30	45
9	48	36	49	39	59	19	14	67
10	67	26	30	39	65	47	14	39
11	45	16	61	63	54	22	39	39
12	28	41	58	48	46	17	38	45
13	21	26	65	76	44	14	25	61
14	39	32	58	63	44	7	76	17
15	52	45	39	48	60	26	26	48
16	52	26	30	46	54	27	30	43
17	39	43	62	39	54	28	54	18
18	51	43	51	49	65	17	18	65
19	65	26	49	39	62	13	42	45
20	33	27	43	45	56	11	34	55
21	29	22	68	53	48	11	49	40
22	36	14	47	53	47	13	22	65
23	65	46	30	40	56	51	32	17
24	51	36	53	57	48	17	31	52
25	57	41	42	59	58	12	22	66
26	48	33	34	48	64	25	17	58
27	68	51	44	33	62	35	35	30
28	48	41	44	38	55	30	30	40
29	49	18	53	71	46	30	23	47
30	51	32	66	36	61	33	50	17
31	31	26	43	22	48	44	27	29

STRONG VOCATIONAL INTEREST BLANK POST-TEST
SCORES FOR THE EXPERIMENTAL GROUP

	AACH	AR	MFII	OIE	OL	Like %	In-diff. %	Dis-Like %
Decided								
1	48	45	36	41	62	22	18	60
2	47	41	29	55	51	24	21	55
3	35	34	62	42	50	16	52	32
4	51	31	70	49	57	16	40	44
5	47	37	64	40	56	14	29	57
6	27	30	57	41	57	25	32	43
7	43	19	60	58	50	5	50	45
8	16	39	60	74	46	21	25	54
9	48	35	62	66	51	4	65	31
10	25	35	35	48	52	43	20	37
11	40	30	35	42	53	15	33	52
12	69	51	29	41	56	64	19	17
13	54	48	39	39	57	36	25	39
14	52	26	62	44	58	32	37	31
Undecided								
1	46	36	38	39	62	25	16	59
2	52	36	60	54	52	33	32	35
3	46	29	51	45	56	16	14	70
4	76	27	38	32	71	53	14	33
5	33	41	51	34	49	25	56	19
6	56	46	34	45	66	28	14	58
7	51	18	31	37	57	21	27	52
8	58	31	38	28	64	44	29	27
9	62	33	56	36	54	30	27	43
10	32	28	49	32	45	62	22	16
11	47	27	46	42	51	34	30	36
12	46	46	47	67	43	35	34	31
13	66	42	26	53	58	26	14	60
14	42	41	39	41	67	31	24	45
15	73	51	42	35	64	46	19	35
16	52	17	48	58	44	31	26	43
17	44	37	46	17	54	61	29	10

STRONG VOCATIONAL INTEREST BLANK SCORES
FOR THE DECIDED GROUP

		AACH	AR	MFII	OIE	OL	Like %	In-diff. %	Dis-Like %
1		28	36	61	64	35	24	49	27
2		53	37	57	36	53	31	41	28
3	*	52	38	42	44	60	39	28	33
4	*	37	22	62	61	53	23	23	54
5		53	49	30	40	52	57	29	14
6		37	25	33	58	55	29	9	62
7		68	39	29	46	59	31	16	53
8		32	29	60	47	54	23	24	53
9		50	50	43	35	55	26	36	38
10		42	41	39	26	61	37	39	24
11		43	35	46	37	50	36	30	34
12		37	17	55	34	59	24	10	66
13		62	41	22	40	63	38	42	20
14	*	51	36	51	30	51	22	31	47
15		33	37	51	40	55	22	17	61
16		46	30	64	30	45	68	32	0
17		51	33	44	32	70	49	18	33
18		43	31	73	43	63	34	25	41
19		40	35	30	40	58	44	32	24
20	*	51	20	49	46	71	46	1	53
21	*	23	25	65	66	45	28	29	43
22		51	33	46	30	50	21	56	23
23		43	26	55	30	56	31	43	26
24		59	38	26	38	63	27	54	19
25	*	50	30	44	26	58	46	22	32
26		37	22	29	55	59	37	19	44
27		48	43	44	39	67	43	20	37
28		35	46	34	37	58	21	42	37
29	*	22	22	66	54	56	7	41	52
30		70	47	48	48	69	29	14	57
31		58	36	33	36	61	37	32	31

* Became undecided through the year.

ACT SCORES, GPA, AND SEMANTIC DIFFERENTIAL SCORES
FOR EXPERIMENTAL GROUP STUDENTS WHO DID
NOT TAKE POST-TESTING

	ACT Scores	GPA (H.S.)	Intell. Orientation I	Avoid of Risk II	Desire for Security III	Dependence Needs IV	Passive in Soc. Inter. V	Withdr. in Soc. Inter. VI	Self Esteem VII
1	25	2.27	4.00	3.10	4.00	3.66	3.37	2.73	2.80
2	23	3.02	2.00	3.90	5.40	3.44	2.87	4.54	3.00
3	25	2.77	3.10	3.80	3.50	3.44	3.37	2.45	3.00
4	29	3.97	2.90	2.20	4.10	2.77	4.00	3.00	4.00
5	21	3.36	2.50	2.40	6.30	2.33	3.75	3.09	2.40
6	18	3.16	2.00	4.20	4.10	4.00	3.12	3.27	2.30
7	19	3.45	4.10	3.60	2.40	3.33	4.00	1.00	3.10
8	20	3.20	2.50	2.70	3.70	3.33	4.12	2.36	3.40
9	21	2.41	4.30	3.60	6.80	3.89	3.00	1.00	2.70
10	14	3.13	4.80	3.40	2.70	2.22	4.12	6.18	2.10
11	17	3.45	2.40	3.60	4.50	2.78	3.37	2.45	2.00
12	23	4.00	3.10	3.20	5.10	3.00	3.12	2.82	1.70
13	26	2.68	1.80	3.10	4.40	3.00	3.37	1.82	2.00
14	22	2.29	2.50	5.60	5.30	3.22	4.37	4.36	4.50

VITA

Rex Thomas Finnegan

Candidate for the Degree of

Doctor of Education

Thesis: A STUDY OF PERSONALITY DIFFERENCES OF THE VOCATIONALLY UNDECIDED STUDENT AND THE EFFECTS OF VOCATIONAL COUNSELING

Major Field: Student Personnel and Guidance

Biographical:

Personal Data: Born in St. Louis, Missouri, December 23, 1940, the son of William and Mary Finnegan.

Education: Attended grade and high school in St. Louis, Missouri. Graduated from St. Mary's High School in St. Louis, Missouri, in 1958; received the Bachelor of Science in Education degree from Southeast Missouri State College, with a History major, and Psychology minor, in May, 1962; received the Master of Education degree from the University of Missouri, with a major in Guidance and Counseling, in August, 1963; attended the Oklahoma State University N.D.E.A. Counseling Institute the summer of 1965; completed requirements for the Doctor of Education degree at Oklahoma State University, with a major in Student Personnel and Guidance, in May, 1971.

Professional Experience: Employed as teacher-counselor at Oakville Junior High School in St. Louis, Missouri, 1963-1964; appointed teacher-counselor at Mehlville Senior High School in St. Louis, Missouri, 1964-1965; taught Psychology, counseling courses, and served as counselor at Southeast Missouri State College, Cape Girardeau, Missouri, 1965-1967; employed as counselor at Oklahoma State University, Stillwater, Oklahoma, 1967 to present.

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