A COMPARATIVE STUDY OF SOME EFFECTS OF VOCATIONAL EDUCATION ON CULTURALLY DISADVANTAGED YOUTH

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PREFACE

The problem of unemployment of our nation's youth, and particularly those youth who fail to complete high school, is a major concern to educators across the nation. Out of the Manpower Development and Training Act have come programs which give youth a new opportunity to learn a salable skill and become successful members of our society.

The purpose of this study was to evaluate one such program by comparing achievement results of the program with results of a more traditional high school vocational program. Factors of classroom achievement, personal-social characteristics and job success were studied in efforts to evaluate the programs.

Although the study became laborious at times, particularly when subjects were studied outside the school setting, the rewards have been most satisfying. Although this study is only a small contribution, the writer is convinced that research is a key to progress and is pleased to be associated with this necessary segment of education.

Sincere appreciation is expressed to all who have contributed toward the completion of this study, particularly to the writer's committee, Dr. Richard P. Jungers, Chairman; Guy Donnell, Kenneth Wiggins and Paschal Twyman. Much credit is due also to Drs. Victor Hornbostel and John Egermeier, as well as other members of the School Dropout Research Project staff who were constant in their encouragement.

Special recognition is expressed to Dayna Breeden who loyally

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To my wife, Iola, and children, Suzanne and Cheri, I can only humbly give thanks for the countless hours devoted to data gathering and clerical assistance; and for the sacrifices they made while encouraging me in the work.

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CHAPTER I

THE NATURE OF THE PROBLEM

Introduction

This dissertation reports a comparative study of vocational training programs for high school students and high school dropouts. It examines variables which are thought to impinge upon the economic success of young adults.

The primary objective of the study is to assess the validity of selected vocational training programs, examining each in terms of its impact upon the students in the program. Factors which will be compared are: (a) academic and vocational achievement; (b) personality, i.e., personal and social adjustment, social class values, anxiety, personal preferences, and rural-urban orientation; and (c) job success.

Surveys have indicated that many unemployed people lack the skills to move into job areas which offer the most job opportunities. This condition calls for an evaluation of educational offerings in search for the most adequate training programs.

A basic assumption of this study is that the high school graduate who enters the labor market after completion of high school has many characteristics similar to those of the dropout. These similar characteristics include both ecological and demographic dimensions. It is further assumed that programs which would be effective in preparing the

individuals in both groups for the acquistion of salable skills would also have many similar characteristics.

There are a number of innovations being used in vocational training programs. If the preceding assumptions are valid, those innovations in methods, techniques and organization which prove to be most successful in any one program should be effective in other vocational training programs. If, for example, a program for school dropouts which incorporates "individualized instruction" and "large blocks-of-time" is shown to be successful, such a program ought also to be useful for other vocational trainees.

General Background and Need for the Study

Historically, the philosophy of training young people for vocations has changed to meet the demands of society. At one time, the son was taught by his father; and the vocational skills were passed down from father to son. As more services were demanded, the apprenticeship system became the primary means for obtaining a vocational skill. As our society has become more complex and has demanded still more services, more specialized skills have become a necessity, and the schools have come to be recognized as proper "instruments" of vocational education.

The federal government recognized this need for vocational training as early as 1862 when the Legislature passed the Morrill Act which provided grants of land to endow, support and maintain state agriculture and mechanical colleges.

The first secondary school vocational education was the manual training movement which began in the high schools in 1880. During the

next decade cooking, sewing, carpentry and finally metal work were added to the high school curricula.

In 1906, the state of Massachusetts set up a state board for vocational education. Although vocational training was placed under the state board of education in 1909, there remained a state director of vocational education. By 1910, more than twenty additional states had set up a state program of vocational education.

Federal recognition of vocational education in the high school came with passage of the Vocational Education Act of 1917, familiarly known as the Smith-Hughes Act. Since 1917, numerous other enactments have added to the federal support of vocational education; notably the George-Reed Act (1929), the George-Elizey Act (1934), the George-Dean Act (1936), the George-Barden Act (1946) and the Vocational Education Act of 1963.

In addition, Congress put into effect during World War II a program called Vocational Education for National Defense, which gave seven million war workers vocational training.

"Sputnik" is generally considered to be the principal stimulas which brought about passage of the National Defense Education Act in 1958 which, under title VIII, provided funds for training technicians in scientific occupations.

Most recently, concern over unemployment, under-employment and "poverty pockets", has led to passage of the Area Redevelopment Act of 1961, the Manpower Development and Training Act of 1962 (revised in 1963) and the Economic Opportunity Act of 1964, all of which lend further support to vocational education.

The preceding brief history of the development of vocational

education in the United States verifies the fact that funds are being made available for the support of vocational education. While federal funds are restricted in most cases to specific training areas, this does not mean to imply that "spending the money" will, in and of itself, accomplish the ends for which funds are allocated. Educators must furnish the leadership, based on sound research study, which will direct the vocational training toward accomplishment of desirable results.

Automation and technological change has, in the past decade, become a dramatic challenge to our nation's educational leaders. in order for the national economy to continue growing, all levels of education must become more effective in preparing men and women for entry into the world of work.

Statistical surveys of the labor force indicate that large numbers of unemployed men and women are in the fourteen to twenty-four age bracket. These are the young people who were not fully prepared for entry into today's technological world of work. Within this age group lie the human resources which, if properly trained, can fill jobs in skilled and technical levels where acute manpower shortages exist. Reduction of unemployment at this age level will impinge upon two fundamental national problems; (1) it will serve to increase the Gross National Product, a necessary step in economic progress; and (2) it will serve to reduce the problem of young adults, unemployed, with nothing to do, which Dr. Conant and others have referred to as "social dynamite".

The urgent need for salable skills, for both dropouts and graduates, is evident. The following observations confirm that need:

1. Dr. Williams B. Logan, a member of the President's Panel of Consultants for Vocational Education, stated that "...there are 4 to 6 million unemployed; at the same time there are 4 to 6 million job openings. The difference is skills." (11)

2. Projected statistics show that dropouts (as well as graduates who have not learned a skill) will have increasing difficulty in obtaining jobs. Manual and farm labor accounted for about 51 percent of the total labor force in 1950, 44 percent in 1960, and is projected to be about 39 percent in 1970. White collar occupations, which offer the least opportunity for dropouts, are making the greatest increase in relative proportion to the total labor force. In addition, there will be a net increase of 6.2 million young persons under 25 added to the nation's work force in the 1960's - compared with a net increase of 400,000 in the 1950's. (2)

3. The teenage unemployment rate for 1963 averaged 15.6 percent compared with 13.3 percent in 1962. (17)

4. More than six out of every ten MDTA (Manpower Development and Training Act) trainees in 1963 were high school graduates. (17)

The economic problem of unemployment among older adolescents and young adults in the fourteen to twenty-four age group has been one of increasing concern in this country. Much publicity and major concern has been directed toward the school dropout. The unemployed high school graduate has received much less attention. An October, 1964 survey of 1964 high school graduates and 1963-1964 dropouts shows that 18.7 percent of the graduates and 24.8 percent of the dropouts who were in the labor market were unemployed. In terms of actual numbers, however, 161,000 graduates were unemployed, while only 83,000 dropouts were unemployed. (35, p. 642)

It behooves educators to examine vocational training programs for both groups in their efforts to effectively combat the unemployment problems of young people.

The Vocational Education Programs

The high school vocational education program selected for use in this study was conducted at Central High School and Capitol Hill High School in Oklahoma City. The Manpower Development and Training Act program was conducted at Central High School and in shops located at Washington Elementary School in Oklahoma City.

The Manpower Youth Opportunity program, designed to rehabilitate school dropouts, is administered under provisions of the Manpower Development and Training Act of March 15, 1962 (Public Law 87-415). "Manpower" and "MDTA" are terms used synonymously in this thesis to refer to the Manpower Youth Opportunity Program in Oklahoma City.

A research team from the Research Foundation, Oklahoma State University, with support from the Ford Foundation, is making an extensive study of the 1964-1965 Manpower program in Oklahoma City. Specific results to be examined are measured in terms of participant growth or change in academic and vocational achievement, sociological and psychological factors, and in job success. The research team is directed by J. Paschal Twyman, Victor O. Hornbostel and John C. Egermeier, staff members of the College of Education at Oklahoma State University.

The Oklahoma City Manpower program was organized to provide three treatment groups. One group received training in a combination of vocational and academic courses. A second group was trained only in a vocational skill. The third group was enrolled in academic courses only. All three groups emphasized individualized instruction, independent study and individual movement from unit to unit. In addition, "large blocks-of-time" and "integrated materials" approaches allowed each student to proceed through the program according to his own

ability and desire.

Students who were enrolled in a vocational skill course attended class for five hours daily. Those enrolled in academic subjects were in class three hours daily, studying mathematics, science, social studies and communicative skills. Combination students enrolled in both vocational and academic subjects were in class eight hours daily.

This study includes only students who were enrolled in the vocational skill courses of auto mechanics, cosmetology, general office clerk, stenography or welding, regardless of their enrollment in academic subjects.

The high school vocational education program is designed to prepare students for jobs upon graduation from high school. Programs in auto mechanics, cosmetology and welding are terminal programs. Programs in business education may or may not be terminal programs.

The programs of auto mechanics and welding are three-year courses. In each of the three high school years the student meets his skill class for three consecutive periods daily, and is enrolled in other required and elective subjects for the remaining three periods daily. The program of cosmetology is a two-year course. The student, as a sophomore, enrolls in a general education program, and starts the vocational schedule in the junior year.

Business education is not in the vocational department in the school organization. Students enroll in regular one-hour classes in business education as electives - either in a general education or a college preparatory program. In order to differentiate between "general office clerk" and "stenographer", students who enrolled in bookkeeping, clerical practice and business machines were selected as general

office clerks. Students who enrolled in office practice and filing, shorthand and transcription were selected as stenographers. All, of course, were enrolled in typewriting.

A more complete description of the students in each program is presented in Chapter IV.

The Problem

The problem with which this study is concerned is the evaluation of vocational training in terms of achievement in school and on the job. No objective criterian known to the investigator has been developed with which one can evaluate a vocational program. The desired result of a program is, ultimately, socially acceptable behavior in the form of vocational and social success.

In order to achieve some evaluation, the investigator has selected students from two different vocational training programs for comparative purposes. The Manpower program was designed specifically to rehabilitate school dropouts. The high school program was designed to meet the needs of high school students who terminate formal education at the time of graduation. The acquisition of a salable skill by the student is an aim of both programs.

The two program groups were compared on selected variables which are thought to be factors of job success. Conclusions drawn from the study should indicate whether either of the programs is superior in establishing desired results. The evaluation is based on comparative success of the two programs rather than on subjective criteria.

CHAPTER II

THE THEORETICAL FRAMEWORK

Introduction

The purpose of this study is to compare two vocational education programs in the development of selected factors which are thought to be pertinent for helping youth to become stable members of society.

The intent of this chapter is to set the theoretical framework whereby valid comparisons may be made. There are obviously dichotomous factors which will affect results, yet are not controlled by the investigator. The dropouts included in this study are, as a group, older than the graduates. The dropouts are more likely to be married and in their own home rather than in the parental home. Other differences between the two groups may be noted, many of which result directly from, or correlate highly with the subject's present age and home status.

Review of Related Literature

One of the apparent dichotomies occurring in the study is the dropout versus the graduate. The etiology of the dropout has been extensively researched and a number of factors relating to the dropout have been defined. By inference, the graduate is a different creature.

The investigator questions the validity of the inference on the subjects in this study. The graduates from high school may be referred to as having been "potential" dropouts. The graduates were selected

from two schools serving the central Oklahoma City area. According to Levan (16, p. 73) this area had low elementary student intelligence, high elementary student mobility, low parental income, low parental educational attainment and high parental unemployment. The attrition rate in both schools is high. The selected subjects, as a group, have many of the characteristics of dropouts.

On the other hand, the dropouts in the study are program "finishers" and, in many cases, did receive their diplomas. On the surface, it appears that the major difference between the groups lies in the fact that one group experienced a break in schooling before completion while the other group remained in school continuously until completion.

The investigator knows of only one study which refers to the positive factors which might cause the potential dropout to remain in school. Bowman and Mathews (4), in an Illinois study, reported that student reasons for staying in school were to get a better job, get a diploma or further education, parental guidance, never had any other idea, and other reasons which were not specified in the report.

Reviews of the literature of dropouts have been made in two already completed research studies which resulted from the dropout rehabilitation project in Oklahoma City. Quinn (25) reviewed literature relating personal and social adjustment factors and dropouts. Roberts (26) reviewed the general field of dropout literature. In addition, Levan (16) in a study of the Oklahoma City dropout problem, also reviewed pertinent literature of the dropout.

An almost fantastic amount of dropout literature exists. Perhaps the most recent and most inclusive bibliography of the most pertinent research is Dropouts: Selected References (34), prepared by the United

States Department of Health, Education and Welfare. This bibliography lists over 200 citations, few of which are dated before 1960.

Earlier research on the dropout was primarily concerned with numbers and percentages of dropouts. Of concern in this study, however are the more recent correlation type studies of dropouts and such factors as intelligence, personality, socio-economic level and vocational success. The problem with most of these studies is one of lack of control over the many factors which may influence different students in different ways, and may also affect the same student in different ways at different times. General agreement, however, has been reached concerning a number of factors which may or may not operate together on a given individual.

An overview of the research literature discloses that dropouts, as a group, are likely to differ from graduates in the following ways:

1. Dropouts will score lower on intelligence tests than graduates. Some Authorities will not agree that dropouts are lower in intelligence, but most will agree they do not do as well on intelligence tests.
2. Dropouts will have lower reading abilities than graduates.
3. Dropouts will be more likely to repeat one or more grades before dropout than will graduates.
4. Dropouts will achieve lower grade point averages in school.
5. Dropouts will participate in less extra-curricular activities.
6. Dropouts will be more likely to express dislike for teachers or complain about teachers being unfair.
7. Dropouts will be in a lower socio-economic bracket.
8. Dropouts will more often express dissatisfaction with school.

9. Dropouts will have higher mobility as indicated by the number of schools attended.
10. Dropouts will exhibit poorer social and personal adjustment than graduates.
11. Dropouts will have more absenteeism from school.

Within a sample of dropouts, the following characteristics are generally noted:

1. There will be more males than females.
2. There will be more dropouts who have parents in low-skill occupations.
3. More of the dropouts will have come from broken homes.
4. More will have dropped from the tenth grade than from any other grade level.

In addition, there is evidence that:

1. Rural non-farm children are less likely to drop out than either rural farm children or urban children.
2. Children of a racial minority will be more likely to drop out than will white children.

The characteristics of the dropout listed in the preceding paragraphs would also be characteristics of the potential dropout. The fact that a student, who has one or more of these characteristics, did graduate does not negate his prior designation as a potential dropout. Admittedly, there must be differences between the dropout and the graduate who was a potential dropout, but these differences are not clearly defined in the literature.

A second dichotomy occurring in this study has to do with the length of the program. The Manpower program varies, according to skill

area, from twenty weeks in length to forty-eight weeks in length. The high school program over the three-year span is a 108-week program. In the area of cosmetology, which is a two-year program, the program is seventy-two weeks in length.

The length of a program is fixed by the State Board for Vocational Education, and could not be experimentally controlled. However, there may be some sound bases for reasoning that the length of the program does not seriously affect results.

A research paradigm developed by the Oklahoma State University research team which is studying the Manpower program suggests that the individual's interaction with his environment during the time between drop out and program entry will affect his behavior during training. This time period in the dropout's life is characterized by:

> (1) boredom from lack of responsibility and a low interest level, (2) repeated failure to attain job rewards because of lack of skills and lack of general education, (3) increased hostility against the values of intellectual pursuits, (4) a high level of anxiety, (5) sustained reinforcement of identity as a member of society's "out-group", coupled with increased recognition of the difference between "in-groups" and "out-groups". (29)

The dropout, at the time of program entry, may be positively motivated by the negative experiences of the past. Increased motivation by the dropout might serve to equate for the shorter length of program.

Another factor which might impinge on the differing length of the programs is "vocational readiness" or "vocational maturity". According to Super (31), Buehler has defined psychological life stages to include an "exploratory" stage which includes the period from about age fifteen to twenty-five, and an "establishment" stage which runs from about age twenty-five to forty-five. Super further defines the exploration stage to include: "developing and understanding the self, trying out the role

of budding adult, finding a mate, finding an occupation, finding one's place in the community." (31, p. 72) Since many of the dropouts in this study are married and are older than the graduates, it may be reasoned that they are further along in the exploratory stage of vocational maturity.

Miller and Form (18) have developed a sociological classification of life stages which includes an "Initial Work Period" and a "Trial Work Period". The initial period is "...a period of job impermanence beginning when the worker seeks his first job during his span of school enrollment and continuing until he has terminated his education." (18, p. 542) The trial period is defined as "...a period of job transition beginning when the worker seeks his first full-time work position and continuing until he has secured a work position in which he remains more or less permanently." (18, p. 542) From this classification, one can further substantiate the theory that the dropouts are further along in vocational maturity and can benefit from the shorter vocational program.

J. O. Crites (10) has developed an instrument, Vocational Development Inventory, which, hopefully, will correlate age with vocational maturity, and age with vocational readiness or the ability to prepare for a vocation.

In the present study, subjects in the two programs were compared on factors of academic and vocational achievement, personal and social traits, and initial job success. Literature relating to these factors is pertinent to the theory upon which research questions in the study are based.

In a study of dropouts and graduates in Iowa, dropouts had

significantly lower grade point averages and significantly lower standardized achievement test scores than did graduates. (36) An Illinois study reveals that dropouts were lower in rank in class standings than were graduates. (24) The dropout has a lower level of reading achievement than the graduate. (1, 3, 15, 21)

Rohrer (28) indicates that the dropout, in general, may be characterized as follows:

a. one who mistrusts others.

b. one who lacks emotional support from a significant adult figure, but rather, turns to peers to find someone with whom to relate.

c. one who lacks feeling of belonging and sporadically "acts out" in an attempt to gain satisfying relationships.

d. one who strikes out defensively at perceived sources of frustration - peer groups and authority figures who have become sources of conflict.

e. one who lacks self-reliance because of continued dependence on over-controlling maternal figures.

f. one who is in need of, and seeks inadequately, affection and emotional warmth.

Additionally, Rohrer states that the dropout fails to develop a healthy self-concept, is unable to deal realistically with problems, shows impulsive behavior, and seeks immediate gratification of needs.

One might assume that on a continuum of symptomatic behavioral characteristics, dropouts and graduates would tend to gravitate toward opposite ends. This assumption cannot be so readily accepted when one is concerned with dropouts who re-entered formal schooling and graduates

who were potential dropouts.

Roessel (27) compared dropouts and graduates on personality characteristics measured by the Minnesota Multiphasic Personality Inventory. His analysis revealed that the dropout tends to be lacking in self-confidence, have more compulsive behavior and unreasonable fears, suffer more from delusions of persecution, and have a greater tendency toward a split personality. The dropout tends to be more in search of sympathy, lower in morale, more psychologically immature, more sensitive, more rebellious, and more likely to ignore authority. According to Roessel's findings, the dropout has anti-social tendencies, undertakes many things with a quick loss of interest, and has more of a tendency toward over-productivity in thought and action.

Cook (8) found that home adjustment, measured by the Bell Adjustment Inventory was significantly lower for dropouts. The SRA Youth Inventory disclosed that personal adjustment toward school, home and family, and health were poorer for the dropouts.

One of the major issues of this study is whether dropouts who re-enter training retain the same general social and personal traits which predominate at the time of dropout.

The concern over school dropouts has increased in recent years. Recent data show exceedingly high unemployment rates among new high school dropouts, when compared with the national average of unemployment rates. Social attitudes toward the school dropout and the excessive unskilled labor supply, rather than the dropout's own inabilities, are major factors contributory to the problem. The high school diploma does not make a mental giant of its holder, yet, it becomes a "credential" for work. (20)

Miller (19) reported a statistical study which offers evidence that income rises with years of school completed. He further noted that the last year of high school or the last year of college yields a much larger economic return than other years of education. This phenomenon may reflect on the individual's ability to "stick to it" and complete schooling. It also supports the statement that the diploma or degree becomes a credential for work.

The economic return on the job is, of course, related to the occupational level of the job. A comparison of dropouts with high school graduates shows a higher tendency for dropouts to (a) work at lower level jobs, (b) work for others, and (c) be in the armed forces. (5) Even within similar kinds of work, however, earnings are closely related to education. (23, p. 91)

A 1962 survey of the major occupational levels relates the occupational level with education. Of the employed labor force, the median years of schooling completed as of March, 1962 was 12.5 years for managers and proprietors, clerical workers and sales personnel; 11.2 years for craftsmen and foremen; 11.1 years for semiskilled operatives; and 8.9 years for laborers. (37, p. 15)

Wolfbein (39) reports a series of Labor Department surveys which involved 12,000 high school graduates and 10,000 dropouts. These surveys disclose that dropouts and graduates did equally well in finding the first job. Seven out of ten boys and eight out of ten girls began working within a month after entering the labor market. Graduates generally got higher level jobs. Sixty percent of the female graduates were employed in white collar clerical jobs. Seventy-eight percent of the female dropouts were in sales and service jobs. A larger percentage

of the male dropouts took unskilled jobs, while a larger percentage of the male graduates were in sales. Graduates' salaries on the first job were also found to be higher than salaries of dropouts. In addition, follow-up of employment patterns disclosed that dropouts were unemployed more often and for greater lengths of time.

One of the factors which contributes to more unemployment for the dropouts is related to job satisfaction. The dropout tends to try out several jobs before he settles into one he likes. The practice of moving from job to job produces frequent periods of unemployment when the subject is "looking around". Super (32) indicates that this practice is characteristic of both the graduate and the dropout. In the first few years after leaving school, dropouts and graduates have about the same stability. After four or five years, dropouts are more unstable and make more occupational moves than do graduates. Graduates tend to work up to skilled levels of employment where they become stable while dropouts are more likely to remain at unskilled or semi-skilled levels. It seems evident that opportunities open to dropouts are less varied and less challenging.

Miller and Form (18) discuss several studies which confirm that the young adults have relatively high horizontal mobility. They also make a strong case for the hypothesis that little vertical mobility is to be expected once a subject is started on an occupational level - that the first job is the most important single predictor of job status. They further state: "The trial work period can now be described as a period of proportionately high occupational movement and residential mobility but with limited vertical mobility." (18, p. 573)

Kaufman (13) cites a number of studies which identify factors of

mobility. He lists age, home ownership, job opportunity, marital status, occupation, ethnic origin, sex, war, level of education, seniority and union membership as factors affecting mobility. He indicates further that it would be difficult to identify one as being most significant in a particular situation.

Identification and control of the maze of factors which have impact upon such variables as achievement and success is a major problem of behavioral research. Although a number of factors relating to this study have been identified in the review of literature, the investigator does not mean to imply that the factors included herein comprise an exhaustive list. The primary objective of the review was to formulate a basis for hypotheses - which would also be the basis for conclusions after data were analyzed. Inclusion of identifiable factors from the literature which could not be controlled in this study must necessarily temper the conclusions which the investigator makes.

Research Questions

The two samples which are compared in this study include: (1) the members of the Oklahoma City Manpower Development and Training Act Youth Opportunity Program who completed training in the school year 1964-1965, and (2) the members of regular vocational classes at Capitol Hill and Central High Schools who graduated in May, 1965.

Based on the objectives of vocational education, the investigator proposed the following research questions:

1. To what extent will the members of the two samples differ in terms of academic class achievement in reading, writing, social studies, mathematics and science?

2. To what extent will the members of the two samples differ in terms of vocational class achievement?
3. To what extent will the members of the two samples differ in terms of personal-social factors of interests, personality, anxiety, rural-urban orientation and social class value orientation?
4. To what extent will the members of the two samples differ in terms of initial job success factors of rate of pay, subject satisfaction, employer satisfaction and time involved in gaining employment?
5. To what extent do aptitude, vocational training class and omission of academic classes affect results in the above questions?

CHAPTER III

DESIGN AND METHODOLOGY

Introduction

The primary objective of this investigation was to evaluate the effectiveness of training in two different vocational educational programs. Differences attributable to methods, techniques, organization and administration of the programs were sought.

A secondary objective was to identify factors which show high correlation with job success.

This chapter consists of the procedures, scope and limitations of the study, and the analyses upon which conclusions are based.

Design

Results and conclusions derived from any study are only as valid as the design of that study. Campbell and Stanley (6, p. 235) discuss the rational on which the investigator has based this study:

> The true experiment differs from the correlational setting just because the process of randomization disrupts any lawful relationships between the character or antecedents of the students and their exposure to X. Where we have pretests and where clearcut determination of who were exposed and who were not is available, then designs. . . .may be convincing even without the randomization. But for a design lacking a pretest. . . .to occur naturally requires very special circumstances, which almost never happen. Even so, in keeping with our general emphasis upon the opportunistic exploitation of those settings which happen to provide interpretable data, one should keep his eyes open for them. Such settings will be those in which it seems plausible that exposure to X was lawless, arbitrary, uncorrelated with prior conditions.

Ideally these arbitrary exposure decisions will also be numerous and mutually independent. Furthermore, they should be buttressed by whatever additional evidence is available, no matter how weak.

The design of this study is neither truly experimental nor quasi-experimental, yet it has some characteristics of both types of design. The design can more properly be considered an ex post facto design. It encompasses two treatment groups which are compared only on a posttest basis. That interpretable data may be derived from the study is based on the assumption that the setting in which the two treatment groups are found is such that any subject in the study might conceivably have been a member of either group. The only real bias which could be introduced into the procedure of the study by the investigator was in the selection of the two public high schools from which the programs for high school graduates were studied. Selection of the Central and Capitol Hill High Schools was based on data from Levan's study of the Oklahoma City dropout problem. (16)

Two distinct populations are studied within the design; those young people who dropped out of high school before completion, and those young people who graduated from high school without having dropped out of school at any time during their high school years. Both populations are limited, in general, to the greater Oklahoma City area.

The sample from the dropout population included young adults who re-entered high school academic and/or vocational training in a Manpower Youth Opportunity program. The sample from the graduate population included subjects who completed vocational training programs in the traditional public school setting. The samples are fully described in Chapter IV.

Instrumentation and Data Collection

This study required the use of instruments which were selected by the research team which is studying the Manpower program. In cases where instruments were developed by the research team, some revisions were made by the investigator in order to alleviate problems which arose in administration of the instruments to the regular high school students. The following instruments were selected:

1. General Aptitude Test Battery, Form B-1002
2. Sequential Tests of Educational Progress, Form 3-B, Reading Writing, Social Studies, Mathematics, Science
3. California Test of Personality, Form AA, Secondary Level
4. Kuder Preference Record, Personal, Form A
5. The IPAT Anxiety Scale
6. Social Class Value Orientation Inventory
7. Rural-Urban Orientation Inventory
8. Brayfield-Rothe Job Satisfaction Blank
9. Mellenbruch Garage Mechanic Test
10. Every Pupil Scholarship Test in Typewriting I and II, 1964
11. Hiett Simplified Shorthand Test, Form B
12. Mellenbruch Office Skills Achievement Test, Form A
13. Purdue Trade Information Test in Welding

Instruments which were prepared by the research team include:

1. School Dropout Research Interview Schedule
2. Youth Opportunity Follow-up Survey
3. Employer Rating Survey
4. Cosmetology Test

The General Aptitude Test Battery yields nine aptitude scores:

general intelligence, verbal aptitude, numerical aptitude, spatial aptitude, form perception, clerical perception, motor coordination, finger dexterity and manual dexterity. The test was used to control for differences in ability between the two groups.

> This test battery of the United States Employment Service constitutes one of the best known of the factored aptitude test batteries. . . . Reliability, based on combined test-retest data published by the United States Department of Labor, is .80+ for intelligence, verbal aptitude, numerical aptitude, and spatial aptitude. Reliabilities are .70+ for clerical perception, form perception, motor coordination, and manual dexterity; and .60+ for finger dexterity.
>
> The outstanding characteristic of this multifactored aptitude test is that a person's scores can be compared with 36 occupational aptitude patterns. These patterns are believed to be pertinent to about 500 occupations. In nearly 250 of them, the patterns were empirically established; the others were included upon the basis of judgments made from job analysis data. (26, pp. 53-54)

The Sequential Tests of Educational Progress were administered for the purpose of measuring academic achievement, regardless of the particular academic classes in which a subject might be enrolled. Because of the length of the battery, the Listening Test was arbitrarily omitted from the battery and was not administered to the groups.

> This instrument includes tests in six major fields of school and college instruction. These fields are Reading, Writing, Listening, Social Studies, Mathematics, and Science. The tests in all these areas are basically power, rather than speed tests. All but the slowest students completed them in the time limits allowed.
>
> The norms for the tests are based on the performance of students from a large number of schools, carefully chosen to be representative of the geographic areas of the nation. The Kuder-Richardson Formula 20 was used to estimate all of the reliabilities and standard errors of measurement for the six S T E P tests. The median reliabilities are .915 for reading, .865 for writing, ...850 for science, .835 for mathematics, and .890 for social studies. (26, p. 53)

The California Test of Personality was selected for the measurement of "life adjustment' factors. A total adjustment score is derived by simple addition of scores for the two major sections of the test, "personal adjustment" and "social adjustment". The personal adjustment

section is based on feelings of personal security. It has six component parts: self-reliance, sense of personal worth, sense of personal freedom, feeling of belonging, withdrawing tendencies, and nervous symptoms. The social adjustment section is based on feelings of social security. Component parts are: social skills, anti-social tendencies, family relations, school relations, and community relations.

Quinn (25, pp. 49-53) discusses the reliability and validity of the California Test of Personality. Reliability coefficients for the several components range from .70 to .97; coefficient for the total adjustment is .96. As is the case with most instruments of this type, validity is defended in terms of success in use rather than on data of an empirical nature.

The Kuder Preference Record - Personal is composed of five scales which describe different types of personal and social activities. The scales are considered to be independent and non-additive. They are: A. Preference for being active in groups; B. Preference for familiar and stable situations; C. Preference for working with ideas; D. Preference for avoiding conflict; E. Preference for directing or influencing others.

> While the Vocational identifies an individual's preferences in ten broad occupational areas, the Personal helps determine the kind of situation in which he prefers to work. It indicates, for example, how much he likes to take part in group activities, what role he prefers in the group, how interested he is in exploring new situations, whether or not he likes to be self-assertive, or whether he prefers working with ideas or things. (14, p. 1)

Reliabilities of the five scales range from .76 to .89 computed by Kuder-Richardson formula. Validity data are incomplete, however there is some evidence that discriminating patterns may be found between occupational levels and within occupational groups.

The IPAT Anxiety Scale yields scores of covert or hidden anxiety and overt or symptomatic anxiety. In addition, five factors which group together as anxiety components are measured by the instrument. These factors include: defective integration, lack of self sentiment; ego weakness, lack of ego strength; suspiciousness or paranoid insecurity; built proneness; and frustrative tension or id pressure. A total composite anxiety score is also derived from the instrument. The authors have described it as:

> . . . . a brief, non-stressful, clinically-valid questionnaire for measuring anxiety. . . .The scale gives an accurate appraisal of free anxiety level, supplementing clinical diagnosis, and vacilitating all kinds of research or mass screening operations where very little diagnostic or assessment time can be spent with each examinee. (7, p. 5)

Correlations are reported for split-half, test-retest immediately, and test-retest delayed data. All reliabilities reported were .80+ or better. Numerous researches have been completed which confirm construct validity of the instrument. It is estimated by the authors at .85+ to .90+ for the total scale.

The Social Class Value Orientation Inventory and the Rural-Urban Orientation Inventory are experimental instruments. They were authored by Solomon Sutker, Professor of Sociology at Oklahoma State University. They are still in the process of validation under a contract from the Oklahoma State University Research Foundation.

The Social Class Value Orientation Inventory Yields a total score from responses to thirty-three pairs of value statements. The responses reflect either middle-class or lower-class orientation. The inventory was constructed on four dimensions, each yielding a sub-total score. The dimensions are: (1) time orientation planning,deferring gratification - training future time vs. present time; (2) control of destiny -

planning and effort vs. fatalism; (3) presentation of self - controlled and socially conscious vs. uncontrolled and unconcerned; and (4) social world - non-familistic vs. familistic.

The Rural-Urban Orientation Inventory yields a total score from responses to ten pairs of value or opinion statements. The instrument was constructed from three dimensions which yield three sub-total scores. The dimensions are: (1) individual autonomy over actions and time-use - less need vs. more need; (2) moral attributes in man's work or nature - neutrality vs. nature superior to man's work; and (3) distinctive city characteristics of social density, distance, heterogeneity, institutional variety and richness - acceptance vs. resistance or acceptance of rural counterparts.

The Mellenbruch Garage Mechanic Test was selected to measure achievement in auto mechanics. The test was developed and normed by administration of test items to practicing auto mechanics. Areas covered by the test include tune-up and related internal-combustion engine servicing principles, ignition, carburetion, clutch, transmission, differential and drive shaft, brakes, steering, and other miscellaneous areas. The test yields a single total score.

The Every Pupil Scholarship Test in Typewriting I and II is a typing performance test. It yields a single total score from four typing problems: (1) copying accuracy, (2) tabulation, vertical and horizontal centering, (3) business letter, and (4) rough draft letter. The test was prepared by Richard F. Reicherter for the Bureau of Educational Measurements, Kansas State Teachers College, Emporia, Kansas.

The Hiett Simplified Shorthand Test is a measure of achievement of students taught by the Gregg Simplified Shorthand Method. The author

bases validity on the attempt to include a sampling of essential items presented in the Gregg Simplified Manual. Coefficients of reliability were obtained from data on four small samples. All were above .80. The test yields a single score.

The Mellenbruch Office Skills Achievement Test is a clerical test which yields six part scores and a total score. The parts are: (1) business letter, (2) grammar, (3) checking, (4) filing, (5) arithmetic, and (6) written directions. Reliability studies reveal correlations between the two forms ranging from .76 to .88. Validity studies have been inconclusive. The instrument was selected for use in the present study on the basis of "face" validity. Of the instruments examined, all except this one were oriented toward the measurement of aptitude. On the surface, this test appears to be oriented toward measurement of achievement.

The Purdue Trade Information Test in Welding, according to the authors:

> . . . .is designed to aid industry and vocational schools in determining the amount of information in this field that is possessed by applicants who claim to have had training and/or experience in this trade. In vocational and trade schools, as well as in other formal training programs, the test serves as a terminal achievement examination. (33)

The odd-even reliability, computed on 59 cases was .91. Construct validity as well as one empirical validity study is satisfactory.

The cosmetology test was prepared by the investigator. Items were taken from the Cosmetology State Board Examiner's Handbook. (9) Two hundred multiple choice items were selected by random number from the total of 870 items in the handbook. Three general areas of theory were covered: (1) science of cosmetology, (2) practice and science of manicuring, and (3) practice of cosmetology. No reliability study of the

test was made. Validity is based on opinions of the two cosmetology instructors who taught in the programs, and the following statement from the handbook: "More than five years was devoted to the research, preparation and checking of each test item by leading state board members, beauty school owners and educators." (9, p. iii)

The Brayfield-Rothe Job Satisfaction Blank was selected to measure the subjects' satisfaction with their jobs. The test was administered only to subjects who were, at the time of contact, employed outside their own home. A reliability coefficient of .87 was obtained when the test was administered to 231 female office employees. Evidence of validity is based on "the nature of the items, the method of construction, and its differentiating power when applied to two groups which could reasonably be asumed to differ in job satisfaction." (5)

The School Dropout Research Interview Schedule was used to acquire both demographic and ecological information from the subjects. Interviews with Manpower students were tape-recorded. The schedule was revised by the investigator for use as a group interview with the high school subjects.

The Youth Opportunity Follow-up Survey and the Employer Rating Survey were used to acquire job information from the subjects and their employers.

The interview schedule and the survey instruments are reproduced in Appendix A.

The General Aptitude Test Battery was administered by staff of the Oklahoma State Employment Service to all subjects in both programs. The battery was administered to the Manpower students before they were admitted to the program in August, 1964. The battery was administered

to the high school graduates in May and June, 1965, after they had graduated from high school.

The Sequential Tests of Educational Progress, California Test of Personality, Kuder Preference Record, IPAT Anxiety Scale, Social Class Value Orientation Inventory, and Rural-Urban Orientation Inventory were administered as a battery to all subjects when they were near the completion of their training programs. The instruments were administered to subjects in both groups by members of the research team under the supervision of the investigator.

The skill tests, i.e., tests in mechanics, welding, cosmetology, typing, office skills, and shorthand were administered to the Manpower students by the teacher in each of the skill areas during the last week of training. The skill tests were administered to the graduates by the investigator at the same time other test instruments were administered near the end of their training program.

The School Dropout Research Interview Schedule was administered by members of the research team to the Manpower students during the months of October and November, 1964. The revised group interview was administered to the graduates by the investigator in May, 1965.

The Youth Opportunity Follow-up Survey was completed as near the end of the six-month period following completion of training as was feasible. Manpower subjects were surveyed by personal interviews made by high school counselors in Oklahoma City. In a few cases, the survey was completed by mail. The high school graduates were surveyed primarily by mail. In a few cases, the survey was completed by personal interview made by the investigator.

The Employer Rating Survey was completed entirely by mail as soon

as feasible after employers were identified through the Youth Opportunity Follow-up Survey. No efforts were made to complete the Employer Rating beyond the original mail-out and one follow-up letter. The survey was completed on March 15, 1966. Although the survey was incomplete at that time, no further attempt was made by the investigator to continue the survey.

Data Analysis

Analysis of the data was completed in three major procedural operations. The first analyses were made, using interview data, to find out if the two samples had similar backgrounds. The analyses made use of the chi-square test for two independent samples. The results of these analyses are set forth in Chapter IV as supportive evidence that the subjects within the two samples could conceivably have been members of either group.

The second group of analyses were made, using the battery of posttests to compare the effects of the two programs on academic and vocational achievement, personality, personal interests, anxiety, and social class-urban orientation. A multiple regression analysis of covariance test was the statistical tool used for these analyses. The statistic enabled the investigator to control for differences in intelligence and aptitudes between the two sample groups while comparing differences exhibited on the posttest instrument results. With the exception of the vocational achievement comparisons, the nine scores derived from the General Aptitude Test Battery (GATB) were controlled on all analyses. The GATB G score (Intelligence) was the only covariable used in the analysis of vocational achievement because of the

small number of subjects in each specific skill area. Most of the vocational achievement tests were not performance tests, but rather, paper-and-pencil tests of theory. Therefore, of the nine available GATB scores, the intelligence score was assumed to have the most effect on the results of the vocational tests.

The third group of analyses were concerned with comparisons of the two sample groups in relation to the follow-up surveys. A number of different nonparametric statistics were used in these analyses. Data such as "rate of pay" and job satisfaction" which could readily be ranked were treated by use of the Mann-Whitney U statistic. To compare the number of weeks before the subjects in the two samples became employed, the chi-square median test was employed. The employer rating items were compared between the samples by use of the chi-square 2 X 2 contingency table. Because of the small number in each skill group, the Fisher exact probability statistic was used in the comparison of employer ratings for subjects in specific skill areas. All the above mentioned nonparametric are described by Siegel. (30)

In all analyses in which it seemed appropriate, the investigator controlled for such factors as sex and the specific Manpower program, i.e., Manpower students who received vocational training only and Manpower students who received both vocational and academic training.

All statistical results are reported in terms of significance levels or exact probabilities -- either in the body of the thesis or in the appendices. This method of reporting allows the reader to set his own significance level for rejection of the null hypothesis tested. In order to eliminate any investigator bias, however, the .05 level of significance was selected at the outset of the study as the level which

must be attained before the investigator would reject a null hypothesis. The conclusions made in this study are based on the .05 significance level.

CHAPTER IV

CHARACTERISTICS OF THE SAMPLES

The Manpower Sample

Subjects were selected for the Manpower sample to meet three criteria: (1) they must have been in training in one of the five vocational training areas -- auto mechanics, cosmetology, general office clerk, stenography, and welding; (2) they must have completed testing on all instruments used to make the first and second phases of analysis; and (3) they must have completed the training program.

There were other general criteria over which the investigator had no control. These were selection criteria which were used by the State Employment Security Commission counselors to admit individuals into the program. They included: (1) the subject must be between the ages of 19 and 22, (2) the subject must have been out of school at least two years, (3) the subject must have dropped out of school after the tenth grade, and (4) the subject must score at or above the normed "cut-off score" (a score used for predicting success) on the three General Aptitude Test Battery scores which apply to the particular vocational skill area. Because of selection difficulties, strict adherence was made to none of the four criteria. However, they were standards of selection closely approximated by the sample. Table I presents a tabular breakdown of subjects who were selected for the Manpower sample.

TABLE I

SUBJECTS IN THE STUDY

Skill Training Area	Manpower Subjects			High School Subjects
	Vocational Training	Academic and Vocational Training	Total Manpower Subjects	Total High School Subjects
Auto Mechanics	6	3	9	17
Cosmetology	7	15	22	19
General Office Clerk	5	19	24	10
Stenographer	7	13	20	13
Welder, Combination	12	5	17	6
Total	37	55	92	65

The High School Sample

Subjects were selected for the high school sample to meet three criteria: (1) they must have been in training in one of the five previously named vocational training areas, (2) they must have completed testing on all instruments used in the first and second phases of the analysis, and (3) they must have graduated from high school in May, 1965.

Selection was limited to subjects who were in high school at Capitol Hill or Central in Oklahoma City. Selection of students from those specific schools had several bases. The two high schools serve the central Oklahoma City area. According to Levan, "The central city area forming an east-west axis had low elementary student intelligence, high elementary student mobility, low parental income, low parental

educational attainment, and high parental unemployment." (8, p. 73); all of which would indicate it is a probable area of excessive school attrition. The two high schools were among the highest in dropout rates in Oklahoma City. Douglass High School also serves a portion of the central area. It was not included in the selection because the dropout rate was below the average for Oklahoma City secondary schools, and because it was primarily a non-white school which would have created racial differences between the two samples. Finally, Capitol Hill and Central had students enrolled in vocational skill areas which would duplicate five of the skill subjects offered by the Manpower program.

All seniors from Central High School who were enrolled in auto mechanics, cosmetology or business education were included in the original selection. All seniors at Capitol Hill who were enrolled in auto mechanics or welding were also included in the selection. A random sample of twenty business education seniors from Capitol Hill was selected to complete the original selection. From the total original selection, subjects who did not meet the three previously listed criteria were eliminated. A tabulation of subjects in the final high school sample is listed in Table I.

Background Comparisons of the Samples

A number of statistical tests of interview data were made to test the hypothesis that the two samples were not significantly different in the broad area of personal and background characteristics.

Many of the characteristics which were significantly different between the two samples can be related to maturation. A chi-square analysis of data in Tables II through XII indicates differences between

the two samples. Manpower students more frequently were: (1) older, (2) married, (3) living away from their parental home, (4) living in apartments or duplexes, with fewer bedrooms, (5) living in homes which were rented or which were not paid for, (6) residing with fewer numbers of people in the household, (7) owners of fewer home appliances, and (8) owners of a car or cars. The above factors are related to the different maturation levels of the two groups. They represent real differences that cannot be satisfactorily controlled in this study.

TABLE II

CHI-SQUARE ANALYSIS OF SUBJECT AGES

Sample	Years of Age 17	18	19	20	21	
Manpower	4	17	29	30	12	$X^2 = 91.81$
High School	29	33	3	0	0	$p < .001$

TABLE III

CHI-SQUARE ANALYSIS OF SUBJECTS' RESIDENCES

Sample	Living With Parent	Spouse	Other Relative	Friend or Alone	
Manpower	26	43	7	15	$X^2 = 61.57$
High School	59	3	3	0	$p < .001$

TABLE IV

CHI-SQUARE ANALYSIS OF SUBJECTS' HOME TYPES

Sample	House	Apartment	Other	
Manpower	51	26	14	$X^2 = 15.95$
High School	56	6	3	$p < .001$

TABLE V

CHI-SQUARE ANALYSIS OF NUMBER OF BEDROOMS IN HOME

Sample	1	2	3 or More	
Manpower	35	30	22	$X^2 = 24.24$
High School	4	28	33	$p < .001$

TABLE VI

CHI-SQUARE ANALYSIS OF HOME OWNERSHIP

Sample	Renting	Buying (or owned)	
Manpower	53	26	$X^2 = 13.13$
High School	23	42	$p < .001$

TABLE VII

CHI-SQUARE ANALYSIS OF COST OF HOUSING PER MONTH

Sample	No Payment	Under $55	Over $55	
Manpower	1	23	26	$X^2 = 18.28$
High School	20	16	22	$p < .001$

TABLE VIII

CHI-SQUARE ANALYSIS OF NUMBER RESIDING WITH SUBJECT

Sample	2 or Less	3 or 4	5 or More	
Manpower	53	27	9	$X^2 = 17.60$
High School	17	32	16	$p < .001$

TABLE IX

CHI-SQUARE ANALYSIS OF APPLIANCE IN HOME

Sample	No Luxury Items	Some Luxury Items	
Manpower	74	15	$X^2 = 36.81$
High School	22	43	$p < .001$

TABLE X

CHI-SQUARE ANALYSIS OF CARS OWNED BY SUBJECTS

Sample	0	1	2 or More	
Manpower	32	49	9	$X^2 = 12.11$
High School	41	22	2	$p < .01$

TABLE XI

CHI-SQUARE ANALYSIS OF CARS IN HOME NOT OWNED BY SUBJECT

Sample	0	1	2	3 or More	
Manpower	13	49	19	9	$X^2 = 14.70$
High School	4	23	18	20	$p < .01$

TABLE XII

CHI-SQUARE ANALYSIS OF MARITAL STATUS OF SUBJECTS

Sample	Single	Married	Separated	
Manpower	24	45	22	$X^2 = 63.17$
High School	59	4	2	$p < .001$

An attempt was made to analyze any personal characteristics of the two groups on which data was obtained -- and which could be related, no matter how remotely, to the subjects' aspiration or success.

There were no significant differences in comparisons on the factors of sex and race.

There were no significant differences between the two groups in relation to the occupation, income or education of parents. Data concerning where the parents were born and/or raised disclosed no difference in the proportion of mothers who were raised in rural, small town or urban areas. Data from Table XIII indicates there was a significant difference in the fathers' early lives. Fathers of the Manpower subjects were more likely to have been born and/or raised in rural areas, while fathers of high school subjects were more likely to be from small towns.

TABLE XIII

CHI-SQUARE ANALYSIS OF FATHERS BIRTHPLACE AND EARLY BACKGROUND

Sample	Rural	Small Town	Urban	
Manpower	63	12	6	$X^2 = 6.78$
High School	37	20	3	$p < .05$

Subjects were asked if they were working outside their own home. Data in Table XIV indicates that comparatively more subjects from the high school sample were working. No attempt was made to differentiate between full-time or part-time jobs. It is safe to assume that the high school students who were working had only part-time jobs. Those

Manpower students who completed classes at noon each day may have held either part-time or full-time jobs.

TABLE XIV

CHI-SQUARE ANALYSIS OF WORK STATUS OF SUBJECTS

Sample	Working	Not Working	
Manpower	11	81	$X^2 = 15.16$
High School	25	40	$p < .001$

There were no significant differences between the groups in relation to the number of older male siblings, older female siblings, younger male siblings, or younger female siblings. A further analysis was made to see if subjects might be differentially influenced by older siblings. Comparisons were made on the number of older brothers and sisters who were in the home, who completed a high school education, or who were in middle or high level jobs. No differences were found on education or job level. Data in Tables XV and XVI indicate that comparatively more of the high school subjects were living in homes with older siblings. These differences can be attributed to the fact that

TABLE XV

CHI-SQUARE ANALYSIS OF OLDER MALE SIBLINGS LIVING IN HOME

Sample	One or More	None	
Manpower	8	84	$X^2 = 5.20$
High School	15	50	$p < .05$

more of the high school subjects were living in their parental home. However, possible influence by older siblings must be recognized.

TABLE XVI

CHI-SQUARE ANALYSIS OF OLDER FEMALE SIBLINGS LIVING IN HOME

Sample	One or More	None	
Manpower	7	85	$X^2 = 5.23$
High School	14	51	$p < .05$

An attempt was made to discover relationships outside the immediate family, and to whom the subject might turn in time of trouble. There were no significant differences in factors of relatives living nearby, relatives living in Oklahoma City, the subject's perception of how "close knit" the family was, or who the subject would go to with his troubles. There was a significant difference in the reason for the selection of a person in whom to confide. The analysis is presented in Table XVII.

TABLE XVII

CHI-SQUARE ANALYSIS OF REASONS FOR SELECTING CONFIDANT

Sample	Easy to Communicate	They Understand	I Trust Them They Help	Other	
Manpower	22	13	25	6	$X^2 = 11.28$
High School	7	12	16	27	$p < .02$

Responses in the last category of the table were: "I've always gone to them," "We're real close," and (by one respondent) "religious convictions." One might speculate that the real difference between the groups is a semantic problem rather than one of choice.

Subjects were asked about church attendance, who they went with, and the church denomination -- when they were children and at the time of the interview. There were no differences with the exception of church attendance at the time of the interviews. A comparison based on those who attend regularly and those who don't indicated no significant difference. A further comparison of those who attend church some versus those who do not attend was significant as indicated in Table XVIII.

TABLE XVIII

CHI-SQUARE ANALYSIS OF CHURCH ATTENDANCE OF SUBJECTS NOW

Sample	Some Attendance	No Attendance	
Manpower	55	37	$X^2 = 10.05$
High School	55	10	$p < .01$

Comparisons of prior school experiences indicated several significant differences between the two samples. The Manpower subjects had more school district changes in their elementary and junior high years, and attended more high schools. Comparitively more of the Manpower subjects liked the elementary or junior high level of school best. Manpower students were more likely to have "ditched" or missed school purposely in high school. On the other hand, no significant differences

were noted in the number of extra-curricular activities in which the subjects participated, additional activities desired, and the reason for limiting participation; none were indicated in the reasons they liked a particular school level best; and none were noted in their degree of popularity at the last school. Tables XIX, XX, XXI and XXII list the data relating to significant differences in school experiences.

TABLE XIX

CHI-SQUARE ANALYSIS OF SCHOOL DISTRICTS ATTENDED THROUGH GRADE NINE

Sample	1	2	3 or More	
Manpower	33	21	38	$X^2 = 7.07$
High School	36	14	15	$p < .05$

TABLE XX

CHI-SQUARE ANALYSIS OF HIGH SCHOOLS ATTENDED

Sample	1	2	3 or More	
Manpower	49	25	8	$X^2 = 6.59$
High School	52	10	3	$p < .05$

TABLE XXI

CHI-SQUARE ANALYSIS OF LEVEL OF SCHOOL LIKED BEST

Sample	Elementary	Junior High	Senior High	
Manpower	23	23	33	$X^2 = 18.37$
High School	6	9	50	$p < .001$

TABLE XXII

CHI-SQUARE ANALYSIS OF ABSENTEEISM, LAST SCHOOL

Sample	Rarely "Ditched"	Often "Ditched	
Manpower	48	44	$X^2 = 4.73$
High School	46	19	$p < .05$

The high school subjects had comparatively more close friends than did Manpower subjects, as indicated in Table XXIII. However, there was no difference in the dropout rates of close friends, or in parents who

TABLE XXIII.

CHI-SQUARE ANALYSIS OF NUMBER OF LONG-TIME CLOSE FRIENDS

Sample	None	1 or 2	3 or More	
Manpower	7	36	48	$X^2 = 17.06$
High School	4	7	54	$p < .001$

approved or disapproved of the subject's friends.

The two groups were compared in relation to their principal environment during childhood. The analysis in Table XXIV indicates that Manpower subjects were significantly more often from a rural or mixed environment and less often from a small town or urban environment.

TABLE XXIV

CHI-SQUARE ANALYSIS OF SUBJECTS' PRINCIPAL CHILDHOOD ENVIRONMENT

Sample	Rural	Small Town	Urban	Mixed	
Manpower	11	5	50	24	$X^2 = 31.44$
High School	1	11	53	0	$p < .001$

The subjects were asked whom they most admired or who influenced them most when they were at the primary school age. Then they were asked who had the most influence on them now. Responses to both of the questions were significantly different between the two samples. The greatest differences, as shown in Tables XXV and XXVI apparently are in relation to mothers and non-relatives. The high school subjects in

TABLE XXV

CHI-SQUARE ANALYSIS OF MOST SIGNIFICANT OTHER IN CHILDHOOD

Sample	Father	Mother	Sibling	Other Relative	Other Person	
Manpower	17	26	11	17	9	$X^2 = 10.19$
High School	13	8	11	14	16	$p < .05$

response to both questions more frequently selected other persons, (usually peers). Mothers were selected more frequently by Manpower subjects in response to the first question, and by high school subjects in response to the second.

TABLE XXVI

CHI-SQUARE ANALYSIS OF MOST SIGNIFICANT OTHER NOW

Sample	Father	Mother	Spouse or "Steady"	Other Relative	Other Person	
Manpower	5	16	25	13	14	$X^2 = 10.13$
High School	7	18	17	2	19	$p < .05$

In relation to future plans, Manpower students more often thought they would work in training-related jobs. Data in Table XXVII indicates also that more high school students planned to go on to college. The "other" category includes those who planned to go to military service, planned not to work in a training-related job, or had no plans.

TABLE XXVII

CHI-SQUARE ANALYSIS OF FUTURE PLANS

Sample	Further Education	Obtain Work Related to Training	Other	
Manpower	8	76	8	$X^2 = 11.84$
High School	17	38	10	$p < .01$

Students were asked what they thought the attitudes of their parents were toward their grades in elementary, junior, and senior high school. There were no significant differences relating to their grades in elementary or junior high school. However, differences were noted in parent attitudes regarding high school grades. Data in Tables XXVIII and XXIX indicate the Manpower subjects more often thought their parents disapproved of their grades in high school.

TABLE XXVIII

CHI-SQUARE ANALYSIS OF FATHERS' ATTITUDES ABOUT HIGH SCHOOL GRADES

Sample	Satisfied	Dissatisfied	
Manpower	29	47	$X^2 = 13.24$
High School	42	17	$p < .01$

TABLE XXIX

CHI-SQUARE ANALYSIS OF MOTHERS' ATTITUDES ABOUT HIGH SCHOOL GRADES

Sample	Satisfied	Dissatisfied	
Manpower	35	47	$X^2 = 14.48$
High School	47	15	$p < .001$

Students were also asked how they thought parents and teachers would rate them on intelligence. Responses were not significantly different concerning elementary teachers or parents when the subject was in elementary school. Neither were they different concerning fathers when the subject was in high school. There were significant differences

in responses of the two samples in relation to mothers' and teachers' ratings of the subjects' intelligence when they were in high school. Tables XXX and XXXI indicate these differences.

TABLE XXX

CHI-SQUARE ANALYSIS OF MOTHERS' RATINGS OF INTELLIGENCE IN HIGH SCHOOL

Sample	Above Average	Below Average	
Manpower	49	39	$X^2 = 4.28$
High School	47	17	$p < .05$

TABLE XXXI

CHI-SQUARE ANALYSIS OF HIGH SCHOOL TEACHERS' RATINGS OF INTELLIGENCE

Sample	Above Average	Below Average	
Manpower	50	38	$X^2 = 3.99$
High School	48	17	$p < .05$

The subjects were also asked to rate themselves, and their self-ratings were not significantly different.

There were no significant differences in responses between the groups in relation to how fair they thought teachers were to them in elementary school and in high school. Neither were differences noted in relation to the subjects' interest in the skill training program. Most of the subjects in both samples thought their classmates were interested in the training program. However, comparatively more of the

Manpower students thought their classmates would work in a training-related occupation. Table XXXII lists the significant data.

TABLE XXXII

CHI-SQUARE ANALYSIS OF NUMBER OF CLASSMATES SUBJECTS PREDICT WILL WORK IN TRAINING-RELATED OCCUPATIONS

Sample	Most of Them	About Half	A Few of Them	
Manpower	52	23	14	$X^2 = 21.40$
High School	18	19	28	$p < .001$

Differences were also noted in the attitudes subjects thought their parents held concerning occupational plans. More of the parents of high school subjects were in the category of not having commented about the subjects' plans or else not knowing about them. Of those who had expressed themselves to the subjects, the parents of high school subjects were not as often satisfied with the plans. Data in Tables XXXIII and XXXIV list responses relating to attitudes of fathers and mothers toward the subjects' occupational plans.

TABLE XXXIII

CHI-SQUARE ANALYSIS OF FATHERS' ATTITUDES TOWARD OCCUPATIONAL PLANS

Sample	Satisfied	Dissatisfied	Indeterminate	
Manpower	52	8	12	$X^2 = 8.90$
High School	27	12	19	$p < .02$

TABLE XXXIV

CHI-SQUARE ANALYSIS OF MOTHERS' ATTITUDES TOWARD OCCUPATIONAL PLANS

Sample	Satisfied	Dissatisfied	Indeterminate	
Manpower	68	8	10	$X^2 = 6.47$
High School	38	13	12	$p < .05$

Summary of Comparisons

Significant difference relating to the Manpower students' establishment of their own homes was the major confounding factor in the study. There was no way to control for age, parental influence, marital status, and the several other maturational factors which proved to be differences between the two samples.

Other unexplained differences included the childhood background of fathers; present church attendance practices; mobility factors shown by the number of schools attended, school absenteeism and level liked best, close friends, principal environment, significant others, and future plans.

In addition, the subjects in the two samples held different perceptions of how their parents and teachers felt toward them in relation to their school grades, intelligence and occupational plans.

There are a greater number of factors which are often related to school attrition in which the two samples were not significantly different. Most notable are such factors as participation in school activities, popularity in school, socio-economic backgrounds, and education of older siblings and parents. Data concerning analysis of these and

other non-significant factors is tabled in Appendix B.

The investigator believes that a strong case is presented in defense of the design by relating the two samples. Upon that relationship is based the hypotheses which were tested and results reported in chapter V.

CHAPTER V

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

Findings of the present study are reported below in three sections. The first, analysis of the end-of-training instrument results, includes analysis of covariance comparisons of the samples on the Sequential Tests of Educational Progress, Rural-Urban Orientation Inventory, Social Class Value Orientation Inventory, Kuder Personal Preference Record, California Test of Personality, IPAT Anxiety Scale, and the skill instrument peculiar to a particular vocational training area. The second, analysis of follow-up instrument results and interview data, includes nonparametric comparisons based on results of the Brayfield-Rothe job Satisfaction Blank, Youth Opportunity Follow-up Survey, and the Employer Rating Scale. The third, significant covariables, is a report of the General Aptitude Test Battery scores which were sufficiently well-correlated with dependent variable scores as to have significant impact, in an anlaysis of covariance, on the adjusted mean score of the dependent variable.

The results reported in the third section are not directly related to the research questions for which answers were sought by means of the analyses. These results are simply an interesting "by-product" of the analysis of covariance.

Analysis of End-of-Training Instrument Results

Instruments which were administered in common to all subjects yielded forty-two sub-total or total instrument scores. An analysis of covariance comparison of the two samples was completed for each mean score, using as covariables, the nine aptitude scores derived from the General Aptitude Test Battery. In addition, the Manpower sample was divided into two sub-groups where one group consisted of scores for those subjects who received a combination of vocational and academic training, and the other group consisted of scores for subjects who received vocational training only. The high school sample was then compared with each sub-group.

Table XXXV indicates results of the comparisons of the High School sample with the Manpower sample on the Sequential Tests of Educational Progress. When the comparison included the total Manpower sample, only the Mathematics difference between means was significant at the .05 level of confidence, however, the Manpower adjusted mean was higher on all five tests.

A comparison of the High School sample with the Manpower combination sub-sample discloses the combination subject's adjusted mean score was significantly higher on Reading, Writing, Mathematics and Science. The Social Studies mean score was also higher, but not significantly so.

The comparison of the vocational only sub-sample with the High School sample indicated virtually no difference - with the exception of Writing, in which case the higher mean score by the vocational group did approach significance at the .05 level.

The results of analysis of score comparisons on the Rural-Urban

TABLE XXXV

SUMMARY OF ANALYSIS OF COVARIANCE OF SEQUENTIAL TESTS OF EDUCATIONAL PROGRESS

Test	Sample	Adjusted $\bar{X}$	df	F	Probability
READING	High School	45.7348			
	Manpower	47.6656	1,146	1.56	> .20
	High School	47.1878			
	Combination	50.9416	1,109	6.05	<.02
	High School	44.9360			
	Vocational	44.6529	1,91	.019	> .50
WRITING	High School	33.7916			
	Manpower	36.4842	1,146	3.80	> .05
	High School	35.1615			
	Combination	38.5909	1,109	5.47	<.025
	High School	32.3514			
	Vocational	35.7610	1,91	3.43	> .05
SOCIAL STUDIES	High School	42.3956			
	Manpower	43.3183	1,146	.35	> .50
	High School	43.5841			
	Combination	45.9643	1,109	2.09	> .10
	High School	41.4700			
	Vocational	41.3636	1,91	.002	>.50
MATHEMATICS	High School	25.0556			
	Manpower	27.3520	1,146	4.04	<.05
	High School	26.1363			
	Combination	29.2934	1,109	5.96	<.02
	High School	24.7854			
	Vocational	25.7824	1,91	.43	>.50
SCIENCE	High School	31.1188			
	Manpower	32.8617	1,146	1.75	>.10
	High School	31.7658			
	Combination	34.7313	1,109	4.08	<.05
	High School	30.5020			
	Vocational	31.5506	1,91	.31	> .50

Orientation Inventory are indicated in Table XXXVI. No significant

TABLE XXXVI

SUMMARY OF ANALYSIS OF COVARIANCE OF THE RURAL-URBAN ORIENTATION INVENTORY

Test Score	Sample	df	F	Probability
Individual Autonomy over Actions and Time-Use	High School Manpower	1,146	.02	> .50
	High School Combination	1,109	.97	> .30
	High School Vocational	1,91	.08	> .50
Moral Attributes in Man's Work or Nature	High School Manpower	1,146	.48	> .40
	High School Combination	1,109	1.12	> .30
	High School Vocational	1,91	.03	> .50
Distinctive City Characteristics	High School Manpower	1,146	1.41	> .20
	High School Combination	1,109	2.35	> .10
	High School Vocational	1,91	.23	> .50
Total Rural-Urban Orientation	High School Manpower	1,146	3.10	> .05
	High School Combination	1,109	2.03	> .10
	High School Vocational	1,91	1.99	> .10

differences were observed. The High School sample had a higher adjusted mean score (indicating urban orientation) on the total than did the total Manpower sample. The difference approached significance at the .05 level.

The results of analyses on the Social Class Value Orientation Inventory are listed in Table XXXVII. Comparison of the High School and Combination Manpower samples on the Sub-total II scores resulted in a highly significant difference between adjusted means in favor of the Combination sample. The individual scores achieved on this part of the Inventory reflect the subject's orientation toward self-control of his destiny. The higher mean score achieved by the Combination sample indicates a relatively higher middle-class orientation toward the rewards of planning and effort as against a lower-class orientation toward fatalism.

None of the other comparisons on the Social Class Value Orientation Inventory resulted in any differences, significant at the .05 level of confidence, between groups although the difference between High School and Vocational samples on the total score approached significance in favor of the High School sample.

No significant differences between adjusted means were disclosed in the analyses on the Kuder Preference Record, Personal. Data in Table XXXVIII indicates that two comparisons approached significance. When the High School sample was compared with the Vocational sample on Preference for Working With Ideas, the adjusted mean score achieved by the Vocational sample was higher, significant at the .10 level of confidence. In contrast, the High School sample achieved a higher mean score, significant at .10, than did the Combination sample on Preference for Directing or Influencing Others.

Table XXXIX indicates results of the analyses on the California Test of Personality. The comparisons between the total Manpower sample and the High School sample on the personal adjustment section resulted

TABLE XXXVII

SUMMARY OF ANALYSIS OF COVARIANCE OF THE SOCIAL CLASS VALUE ORIENTATION INVENTORY

Test Score	Sample	Adjusted $\bar{X}$	df	F	Probability
Time Orientation Planning	High School Manpower		1,146	1.95	> .10
	High School Combination		1,109	.73	> .30
	High School Vocational		1,91	2.21	> .10
Control of Destiny	High School Manpower	6.6592 7.0238	1,146	2.93	> .05
	High School Combination	6.6955 7.3052	1,109	10.15	<.005
	High School Vocational	6.6068 6.6357	1,91	.009	> .50
Presentation of Self	High School Manpower		1,146	.29	> .50
	High School Combination		1,109	2.02	> .10
	High School Vocational		1,91	.15	> .50
Social World	High School Manpower		1,146	2.67	> .10
	High School Combination		1,109	.89	> .30
	High School Vocational		1,91	2.59	> .10
Total Score	High School Manpower	28.0112 26.8508	1,146	1.18	> .20
	High School Combination	28.3001 27.9511	1,109	.008	> .50
	High School Vocational	28.0617 24.8109	1,91	3.00	> .05

TABLE XXXVIII

SUMMARY OF ANALYSIS OF COVARIANCE OF THE KUDER PREFERENCE RECORD, PERSONAL

Record Score	Sample	Adjusted $\bar{X}$	df	F	Probability
Activity in Groups	High School Manpower		1,146	.07	> .50
	High School Combination		1,109	.07	> .50
	High School Vocational		1,91	.06	> .50
Stable and Familiar Situations	High School Manpower		1,146	1.19	> .20
	High School Combination		1,109	.12	> .50
	High School Vocational		1,91	.76	> .25
Working With Ideas	High School Manpower	33.0093 33.1782	1,146	.02	> .50
	High School Combination	32.8929 32.7448	1,109	.01	> .50
	High School Vocational	32.0524 35.2052	1,91	2.93	> .05
Avoiding Conflict	High School Manpower		1,146	1.07	> .30
	High School Combination		1,109	.90	> .30
	High School Vocational		1,91	2.45	> .10
Directing or Influencing Others	High School Manpower	32.5672 30.1428	1,146	2.08	> .10
	High School Combination	31.8185 28.5782	1,109	3.10	> .05
	High School Vocational	33.1456 31.1226	1,91	1.00	> .25

TABLE XXXIX

SUMMARY OF ANALYSIS OF COVARIANCE OF THE CALIFORNIA TEST OF PERSONALITY

Test Score	Sample	Adjusted $\bar{X}$	df	F	Probability
Self-Reliance	High School Manpower		1,146	2.12	> .10
	High School Combination		1,109	2.68	> .10
	High School Vocational		1,91	1.28	> .25
Sense of Personal Worth	High School Manpower		1,146	.31	> .50
	High School Combination		1,109	1.01	> .30
	High School Vocational		1,91	.12	> .50
Sense of Personal Freedom	High School Manpower	11.1616 11.8641	1,146	2.31	> .10
	High School Combination	11.1180 12.2242	1,109	5.02	< .05
	High School Vocational	11.1879 11.5618	1,91	.33	> .50
Feeling of Belonging	High School Manpower	11.9355 12.5671	1,146	1.97	> .10
	High School Combination	11.9967 12.8221	1,109	2.85	> .05
	High School Vocational	11.6942 12.6179	1,91	2.42	> .10
Withdrawing Tendencies	High School Manpower		1,146	.63	> .40
	High School Combination		1,109	.98	> .30
	High School Vocational		1,91	.44	> .25

TABLE XXXIX (Continued)

Test Score	Sample	Adjusted $\overline{X}$	df	F	Probability
Nervous Symptoms	High School Manpower		1,146	.10	> .50
	High School Combination		1,109	.29	> .50
	High School Vocational		1,91	.06	> .50
Personal Adjustment Sub-Total	High School	64.8981			
	Manpower	67.6807	1,146	1.89	> .10
	High School	65.1126			
	Combination	69.0669	1,109	3.33	> .05
	High School	64.3808			
	Vocational	66.9526	1,91	.95	> .25
Social Standards	High School	13.4396			
	Manpower	13.7112	1,146	.66	> .40
	High School	13.5369			
	Combination	14.1650	1,109	3.59	> .05
	High School	13.2785			
	Vocational	13.3486	1,91	.02	> .50
Social Skills	High School Manpower		1,146	1.36	> .20
	High School Combination		1,109	1.99	> .10
	High School Vocational		1,91	1.30	> .25
Anti-Social Tendencies	High School	10.1748			
	Manpower	11.6156	1,146	7.72	< .01
	High School	10.3813			
	Combination	11.8768	1,109	7.37	< .01
	High School	9.9722			
	Vocational	11.8056	1,91	6.66	< .02
Family Relations	High School	9.9859			
	Manpower	11.0969	1,146	2.93	> .05
	High School	10.0673			
	Combination	11.2659	1,109	2.54	> .10
	High School	9.7789			
	Vocational	11.4148	1,91	3.87	> .05

TABLE XXXIX (Continued)

Test Score	Sample	Adjusted $\bar{X}$	df	F	Probability
School Relations	High School Manpower		1,146	.97	> .30
	High School Combination		1,109	.81	> .30
	High School Vocational		1,91	1.42	> .20
Community Relations	High School	9.5227			
	Manpower	10.5111	1,146	3.82	> .05
	High School	9.6397			
	Combination	10.8255	1,109	4.47	< .05
	High School	9.3824			
	Vocational	10.3282	1,91	1.81	> .10
Social Adjustment Sub-Total	High School	64.0525			
	Manpower	68.6694	1,146	5.14	< .05
	High School	64.8623			
	Combination	70.3809	1,109	6.58	< .02
	High School	63.1131			
	Vocational	68.5851	1,91	3.95	< .05
Total Adjustment	High School	128.9849			
	Manpower	136.3585	1,146	3.78	> .05
	High School	130.0171			
	Combination	139.4525	1,109	5.62	< .02
	High School	127.5202			
	Vocational	135.5726	1,91	2.58	> .10

in no differences between adjusted means which approached significance at the .05 level of confidence. Similar results were obtained in comparison of the Vocational sub-sample with the High School sample.

In the comparisons between the Combination sub-sample and the High School sample, difference between adjusted means on the Sense of Personal Freedom sub-score was significant at the .05 level in favor of the Combination group. The differences on Feeling of Belonging and Total

Personal Adjustment also approached significance.

The social adjustment section analyses produced additional significant differences between samples. In comparison on the Anti-Social Tendencies sub-score, all three comparisons indicated the Manpower sample scored significantly higher. The Combination group also had a significantly higher adjusted mean on the Community Relations sub-section. The difference approached significance in the total Manpower-High School comparison. For the total Social Adjustment section, the Manpower sample scored significantly higher in all three comparisons.

The Combination group also had a higher adjusted mean which approached significance on Social Standards; and the total Manpower- and Vocational-High School comparisons on Family Relations indicated the same trend, the differences approaching significance in favor of the Manpower sample.

The Total Adjustment score on the California Test of Personality is the simple summation of the scores for the two adjustment sections. Results of the comparison, High School-Combination, indicate significance at the .02 level in favor of the Combination group. The comparison of the total samples resulted in a difference between the two samples which approached significance at the .05 level, while the High School-Vocational comparison yielded a difference not quite significant at the .10 level.

Scores derived from the IPAT Anxiety Scale correlate positively with the subjects' anxiety--high scores indicating high anxiety. The analyses of the scores reported in Table XL were not made to indicate that one sample might be significantly higher (inferring "better") than the other. The intent here is to report differences which will be

TABLE XL

SUMMARY OF ANALYSIS OF COVARIANCE OF THE IPAT ANXIETY SCALE

Test Score	Sample	Adjusted $\bar{X}$	df	F	Probability
Lack of Self-Sentiment	High School Manpower		1,146	1.25	> .20
	High School Combination		1,109	1.36	> .20
	High School Vocational		1,91	.51	> .40
Lack of Ego Strength	High School Manpower		1,146	.41	> .50
	High School Combination		1,109	.45	> .50
	High School Vocational		1,91	.19	> .50
Paranoid Insecurity	High School Manpower		1,146	.07	> .50
	High School Combination		1,109	.17	> .50
	High School Vocational		1,91	.17	> .50
Guilt Proneness	High School Manpower		1,146	1.10	> .20
	High School Combination		1,109	1.49	> .20
	High School Vocational		1,91	.34	> .50
Frustrative Tension	High School Manpower	9.3208 8.1320	1,146	3.77	> .05
	High School Combination	9.3191 8.0952	1,109	3.51	> .05
	High School Vocational	9.4557 7.6590	1,91	4.13	< .05

TABLE XL (Continued)

Test Score	Sample	Adjusted $\bar{X}$	df	F	Probability
Covert Anxiety	High School	16.9929			
	Manpower	14.9942	1,146	5.18	$< .025$
	High School	16.9810			
	Combination	14.4766	1,109	7.13	$< .01$
	High School	17.1655			
	Vocational	15.0065	1,91	2.98	$> .05$
Overt Anxiety	High School				
	Manpower		1,146	.43	$> .50$
	High School				
	Combination		1,109	.23	$> .50$
	High School				
	Vocational		1,91	.51	$> .40$
Total Anxiety	High School				
	Manpower		1,146	2.37	$> .10$
	High School				
	Combination		1,109	2.56	$> .10$
	High School				
	Vocational		1,91	1.71	$> .10$

discussed in Chapter VI.

Five factors or anxiety components are scored in the IPAT Anxiety Scale. Of the five, only mean scores on Frustrative Tension were significantly different. The High School-Vocational comparison disclosed significance at the .05 level of confidence, and the High School-Manpower and High School-Combination comparisons approached significance.

Results of the Covert Anxiety section were reversed to the above findings. The High School-Manpower difference between adjusted means was significant at .025 level; the High School-Combination difference was significant at .10 level; and the High School-Vocational difference merely approached significance at the .05 level.

Comparison of the total scores on the IPAT Anxiety Scale revealed no significant differences between adjusted means. That a trend might be disclosed is an argument more fittingly discussed in Chapter VI.

Instruments were administered to subjects in each skill training area to measure achievement in the particular skill. Analyses of these instrument results were made, by skill area, in a procedure similar to that used with the previously reported instruments. Mean achievement in a given skill area was treated by analysis of covariance to compare subjects from each of the samples. The General Aptitude Test Battery score on intelligence was the covariable used to control for differences in general intelligence between the samples. Comparisons by skill area were also completed in the same manner between subjects from the High School sample and subjects from each sub-group in the Manpower Sample.

Results of all the skill achievement comparisons are listed in Table XLI. These results indicate that there were no significant differences in mean achievement on the auto mechanics, typing or clerical (office skills) tests. Significant differences were disclosed in the skill areas of cosmetology, shorthand and welding.

Comparisons of the cosmetology instrument results indicate that the vocational sub-group of the Manpower sample, when compared with the High School sample, achieved a greater mean score, significant at the .05 level. Neither of the other comparisons resulted in significant difference. The interesting observation is that the High School adjusted mean was higher than the combination sub-group mean. One can assume that the vocational group (reversing previous trends) did make greater achievement than the combination group.

TABLE XLI

SUMMARY OF ANALYSIS OF COVARIANCE OF SKILL ACHIEVEMENT TESTS

Skill Test	Sample	Adjusted $\bar{X}$	df	F	Probability
Auto Mechanics	High School	25.0657			
	Manpower	24.8408	1,21	.01	> .50
Cosmetology	High School	133.6168			
	Manpower	138.7400	1,38	1.32	> .25
	High School	133.9912			
	Combination	127.6622	1,24	1.17	> .25
	High School	133.9921			
	Vocational	146.0442	1,30	7.33	< .05
Office Clerk Typing	High School	64.2499			
	Manpower	69.7709	1,31	.85	> .25
Clerical	High School	68.9081			
	Manpower	68.1216	1,31	.04	> .50
Stenography Typing	High School	73.4275			
	Manpower	70.7467	1,28	.28	> .50
Clerical	High School	66.9598			
	Manpower	70.9734	1,28	.94	> .25
Shorthand	High School	101.3660			
	Manpower	95.4864	1,29	3.01	> .10
	High School	102.1640			
	Combination	94.4889	1,23	4.55	< .05
	High School	100.9366			
	Vocational	97.4032	1,17	.66	> .25
Welding	High School	22.7925			
	Manpower	32.2497	1,20	9.28	< .01
	High School	23.6186			
	Combination	36.0577	1,8	11.24	< .025
	High School	22.3264			
	Vocational	30.9201	1,15	7.69	< .025

Analysis of the shorthand results indicates greater achievement on the part of the subjects from the High School sample. The only mean difference which attained significance at the .05 level was between the High School sample and the Manpower Combination sub-group.

Comparison of the High School-Manpower subjects in welding achievement indicated difference between means significant at the .01 level in favor of the Manpower sample. Each sub-group of the Manpower sample also had greater mean achievement, significant at the .025 level, than did the High School sample.

Analysis of Follow-up Instrument Results and Interview Data

Six factors were considered in the assessment of job success: (1) the number of weeks between completion of training and beginning of the first job; (2) rates of pay six months after completion of training; (3) satisfaction with jobs; (4) employer ratings of training adequacy; (5) employer ratings of general attitude; and (6) employer ratings of job performance.

Data relating to each factor were tested for differences between samples in eighteen comparisons. The High School sample was compared with the total Manpower sample, then with the combination sub-group and the vocational sub-group. The same comparisons were then completed for each of the five skill training areas. Each test for differences was made by use of the nonparametric statistic which could make fullest use of the data available.

Test of the factor, number of weeks between completion of training and beginning of the first job, was made by use of the median test. To perform the median test, the median number of weeks was determined

for the combined group on each comparison. Data were then dichot on that median. Scores which fell at the median were included wi those which were above the median. The dichotomized data were placed in a 2 X 2 table, and analyzed by use of either the $\underline{X}^2$ test corrected for continuity or the exact probability test according to the total N and the N in each cell.

Table XLII indicates the results of the test for differences in the number of weeks following completion of training required in order to obtain a job. No significant differences between samples were disclosed from the analyses. Only in the comparison of the High School cosmetology sample with the Manpower cosmetology sample was there a difference which approached significance at the .05 level. In that particular comparison, the indication is that the high school sample, as a group, gained jobs in less time after completion of training than did the Manpower sample.

The second factor, rate of pay six months after completion of training, was analyzed by use of the Mann-Whitney U test. Subjects in the two samples which formed each comparison were ranked together according to the last reported hourly rate of pay in the six month follow-up period. Subjects who were not employed during the period were eliminated from the samples in the analysis.

Results of the several comparisons on rate of pay are reported in Table XLIII. Only in comparing subjects in the skill classes of welding were significant differences observed. Manpower welders received higher hourly wages in all three comparisons.

The third factor, satisfaction with the job, was also analyzed by use of the Mann-Whitney U technique. Scores obtained from the

TABLE XLII

MEDIAN TEST OF NUMBER OF WEEKS BETWEEN COMPLETION OF TRAINING AND BEGINNING OF FIRST JOB

Sample	Number Below Median	Number At or Above Median	X^2	Probability
Total				
High School	28	33		
Manpower	36	35	.14	> .70
High School	31	30		
Combination	23	24	.00	> .99
High School	28	33		
Vocational	14	10	.63	> .30
Auto Mechanics				
High School	8	11		
Manpower	3	2	--*	=.30
High School	10	6		
Combination	1	1	--	=.51
High School	8	8		
Vocational	2	1	--	=.35
Cosmetology				
High School	11	5		
Manpower	5	11	3.13	> .05
High School	10	6		
Combination	3	8	1.98	> .10
High School	8	8		
Vocational	2	3	--	=.36
Office Clerk				
High School	4	5		
Manpower	11	11	--	=.30
High School	4	5		
Combination	10	8	--	=.27
High School	4	5		
Vocational	2	2	--	=.44
Stenography				
High School	5	7		
Manpower	10	8	.32	> .50
High School	5	7		
Combination	7	6	.04	> .80
High School	5	7		
Vocational	3	2	--	=.33

TABLE XLII (Continued)

Sample	Number Below Median	Number At or Above Median	X^2	Probability
Welding				
High School	1	4		
Manpower	7	3	--	=.09
High School	2	3		
Combination	2	1	--	=.43
High School	1	4		
Vocational	5	2	--	=.11

*Fisher's exact probability test was used when expected frequency was below 5.

Brayfield-Rothe Job Satisfaction Blank were used in the analyses. Only those subjects who were employed at the time of interview were administered the instrument. Other subjects were eliminated from the analyses.

The results of the comparisons on job satisfaction, listed in Table XLIII, disclosed no significant differences between samples.

The last three factors were based on data received from employers of the subjects. No employers of Manpower auto mechanics responded to the survey, therefore, no comparisons on those factors could be achieved in that skill area. A few employers did not rate the subjects' prior training in cases where the subject was not employed in a training-related job. Other data derived from the Employer Rating Survey were used where applicable, but subjects were eliminated from comparison on prior training where data were not available. Analysis was completed on all three factors by use of the X^2 or exact probability tests.

The employers were asked how adequately subjects were trained for their jobs prior to employment. Employers were asked to mark a rating scale of very adequate, just adequate, slightly inadequate and very

TABLE XLIII

MANN-WHITNEY U TEST OF SIGNIFICANCE OF DIFFERENCE OF HOURLY RATE OF PAY SIX MONTHS AFTER COMPLETION OF TRAINING

Sample	N	Sum of Ranks	U	Probability
Total				
High School	50	2413.5		
Manpower	51	2737.5	1411.5	=.36
High School	50	1973.5		
Combination	32	1429.5	698.5	=.34
High School	50	1715.0		
Vocational	19	700.0	440.0	=.64
Auto Mechanics				
High School	15	159.5		
Manpower	4	30.5	20.5	> .10
High School	15	144.0		
Combination	2	9.0	6.0	> .10
High School	15	135.5		
Vocational	2	17.5	12.5	> .10
Cosmetology				
High School	14	155.0		
Manpower	7	76.0	48.0	> .10
High School	14	120.0		
Combination	3	33.0	15.0	> .10
High School	14	140.0		
Vocational	4	31.0	21.0	> .10
Office Clerk				
High School	6	61.0		
Manpower	19	264.0	40.0	> .10
High School	6	57.0		
Combination	16	206.0	36.0	> .10
High School	6	25.0		
Vocational	3	20.0	4.0	=.13
Stenographer				
High School	10	116.0		
Manpower	11	115.0	49.0	> .10
High School	10	97.0		
Combination	8	74.0	38.0	> .10
High School	10	74.0		
Vocational	3	17.0	11.0	> .10

TABLE XLIII (Continued)

Sample	N	Sum of Ranks	U	Probability
Welder				
High School	5	22.0		
Manpower	10	98.0	7.0	>.05
High School	5	16.0		
Combination	3	20.0	1.0	=.036
High School	5	21.0		
Vocational	7	57.0	6.0	=.037

inadequate. Because of the small number of responses, the data were dichotomized into categories of adequate and inadequate. Data derived from the procedure were placed in a 2 X 2 table for tests of differences.

Results of the tests for differences of the rating of training by employers are summarized in Table XLV. The difference between High School and Manpower welders was significant at the .05 level. When the High School welders sample was compared to the vocational sub-group of Manpower welders, the difference approached significance (p =.08). In both instances, the differences were in favor of Manpower subjects.

Employers were asked to rate, on a continuum ranging from very satisfied to very dissatisfied, the subjects in relation to their general attitude. Again the responses were dichotomized into categories of satisfied and dissatisfied. Results were treated as in the preceding analysis. As indicated in Table XLVI, no significant differences were disclosed.

Data were obtained on the employers' satisfaction with the job performance of the subjects. Analysis procedure was the same as described for the preceding two factors. Table XLVII lists the results which indicate no significant difference between samples in any comparison.

TABLE XLIV

MANN-WHITNEY U TEST OF SIGNIFICANCE ON THE BRAYFIELD-ROTHE JOB SATISFACTION BLANK

Sample	N	Sum of Ranks	U	Probability
Total				
High School	38	1515.5		
Manpower	39	1487.5	707.5	=.73
High School	38	1159.5		
Combination	22	670.5	417.5	=.99
High School	38	1097.0		
Vocational	17	443.0	356.0	=.55
Auto Mechanics				
High School	11	82.5		
Manpower	4	37.5	16.5	> .10
High School	11	77.5		
Combination	2	13.5	10.5	> .10
High School	11	71.0		
Vocational	2	20.0	5.0	> .10
Cosmetology				
High School	11	103.5		
Manpower	5	32.5	17.5	> .10
High School	11	75.0		
Combination	1	3.0	2.0	> .10
High School	11	94.5		
Vocational	4	25.5	15.5	> .10
Office Clerk				
High School	4	33.0		
Manpower	12	103.0	23.0	> .10
High School	4	29.0		
Combination	10	76.0	19.0	> .10
High School	4	14.0		
Vocational	2	7.0	4.0	=.60
Stenography				
High School	9	85.0		
Manpower	9	86.0	40.0	> .10
High School	9	78.0		
Combination	6	42.0	21.0	> .10
High School	9	52.0		
Vocational	3	26.0	7.0	> .10

TABLE XLIV (Continued)

Sample	N	Sum of Ranks	U	Probability
Welder				
High School	3	18.5		
Manpower	9	59.5	12.5	> .10
High School	3	9.0		
Combination	3	12.0	3.0	=.35
High School	3	15.5		
Vocational	6	29.5	8.5	=.50

TABLE XLV

CHI-SQUARE ANALYSIS OF EMPLOYERS' RATINGS OF TRAINING OF SUBJECTS PRIOR TO JOB ENTRY

Sample	Adequate	Inadequate	X^2	Probability
Total				
High School	18	7		
Manpower	24	8	.002	> .95
High School	18	7		
Combination	19	6	.000	> .99
High School	18	7		
Vocational	5	2	--	=.54
Auto Mechanics*				
Cosmetology**				
High School	3	0		
Manpower	1	1	--	=.40
Office Clerk				
High School	2	0		
Manpower	11	5	--	=.51
High School	2	0		
Combination	11	4	--	=.57
High School	2	0		
Vocational	0	1	--	=.66
Stenography				
High School	6	0		
Manpower	5	2	--	=.27
High School	6	0		
Combination	5	1	--	=.50
High School	6	0		
Vocational	0	1	--	=.14
Welder				
High School	2	3		
Manpower	7	0	--	=.045
High School	2	3		
Combination	2	0	--	=.29
High School	2	3		
Vocational	5	0	--	=.08

* No Manpower respondents in Auto Mechanics.
**No Manpower Vocational respondents in Cosmetology.

TABLE XLVI

CHI-SQUARE ANALYSIS OF EMPLOYERS' RATINGS OF GENERAL ATTITUDE OF SUBJECTS

Sample	Satisfied	Dissatisfied	X^2	Probability
Total				
High School	27	3		
Manpower	30	4	.03	> .80
High School	27	3		
Combination	24	3	.09	> .70
High School	27	3		
Vocational	6	1	--	=.43
Auto Mechanic*				
Cosmetology				
High School	4	0		
Manpower	2	1	--	=.43
High School	4	0		
Combination	1	1	--	=.33
High School	4	0		
Vocational	1	0	--	=1.00
Office Clerk				
High School	2	0		
Manpower	16	1	--	=.89
High School	2	0		
Combination	15	1	--	=.88
High School	2	0		
Vocational	1	0	--	=1.00
Stenography				
High School	5	1		
Manpower	6	1	--	=.54
High School	5	1		
Combination	5	1	--	=.55
High School	5	1		
Vocational	1	0	--	=.57

TABLE XLVI (Continued)

Sample	Satisfied	Dissatisfied	X^2	Probability
Welder				
High School	3	2		
Manpower	6	1	--	=.32
High School	3	2		
Combination	2	0	--	=.48
High School	3	2		
Vocational	4	1	--	=.42

* No Manpower respondents in Auto Mechanics.

TABLE XLVII

CHI-SQUARE ANALYSIS OF EMPLOYERS' RATINGS OF JOB PERFORMANCE OF SUBJECTS

Sample	Satisfied	Dissatisfied	X^2	Probability
Total				
High School	28	2		
Manpower	26	8	2.28	> .10
High School	28	2		
Combination	21	6	1.70	> .10
High School	28	2		
Vocational	5	2	--	=.14
Auto Mechanics*				
Cosmetology				
High School	4	0		
Manpower	2	1	--	=.43
High School	4	0		
Combination	1	1	--	=.33
High School	4	0		
Vocational	1	0	--	=1.00
Office Clerk				
High School	2	0		
Manpower	12	5	--	=.53
High School	2	0		
Combination	12	4	--	=.59
High School	2	0		
Vocational	0	1	--	=.66
Stenography				
High School	5	1		
Manpower	6	1	--	=.54
High School	5	1		
Combination	5	1	--	=.55
High School	5	1		
Vocational	1	0	--	=.57

TABLE XLVII (Continued)

Sample	Satisfied	Dissatisfied	X^2	Probability
Welder				
High School	4	1		
Manpower	6	1	--	=.53
High School	4	1		
Combination	2	0	--	=.71
High School	4	1		
Vocational	4	1	--	=.56

* No Manpower respondents in Auto Mechanics.

Significant Covariables

The analysis of covariance test for significant difference was used to analyze data derived from the instruments which were administered in common to all subjects. The nine aptitude scores derived from the General Aptitude Test Battery were used in the test of each dependent variable as covariables to control for differences in aptitudes between the two samples. The test performs a multiple regression technique which calculates the reduction in the sums of squares due to each independent variable after adjusting for all other independent variables. The output of the computer program which was used in the covariance test includes the F value for the adjusted sum of squares for each independent variable and the multiple correlation coefficient.

Tables XLVIII, XLIX and L list those independent variables which yielded adjusted sums of squares significantly different (at the .05 level) from zero. The significant variables are listed under the heading, "Concomitant Variables", because they are shown to be correlated with and have impact on the particular dependent variable with which they are listed.

It may be noted that verbal, numerical and other mental aptitudes are concomitant with the STEP achievement tests. Such results might well be expected.

It is more interesting to note the regularity with which the physical aptitudes of motor coordination, manual dexterity and finger dexterity are concomitant with scores in the California Test of Personality. Such concomitancy suggests that, for subjects in this study, physical attributes have much more to do with one's personal and social

adjustment than do mental abilities. Further study of these relationships is worthy of consideration.

TABLE XLVIII

CONCOMITANT VARIABLES AND MULTIPLE CORRELATION COEFFICIENTS IN THE ANALYSIS OF COVARIANCE TEST OF DIFFERENCE BETWEEN THE HIGH SCHOOL SAMPLE AND THE MANPOWER SAMPLE

Dependent Variable	Concomitant Variable	F	Multiple R^2
Sequential Test of Educational Progress			
Reading	Verbal Aptitude	19.06	
	Numerical Aptitude	7.31	
	Manual Dexterity	4.07	.53
Writing	Verbal Aptitude	13.76	
	Numerical Aptitude	7.71	
	Clerical Perception	6.03	.60
Social Studies	Verbal Aptitude	14.01	
	Numerical Aptitude	4.37	.53
Mathematics	Numerical Aptitude	8.18	
	Spatial Aptitude	4.71	
	Form Perception	5.43	.58
Science	Verbal Aptitude	7.92	.42
Kuder Preference Record			
Working With Ideas	Verbal Aptitude	6.02	.12
Avoiding Conflict	Clerical Perception	4.69	
	Motor Coordination	4.46	.20
Directing or Influencing Others	Clerical Perception	4.58	.13
California Test of Personality			
Social Standards	Motor Coordination	5.15	.19
Anti-Social Tendencies	Finger Dexterity	5.29	
	Manual Dexterity	5.20	.10
Social Adjustment	Manual Dexterity	4.00	.23

TABLE XLIX

CONCOMITANT VARIABLES AND MULTIPLE CORRELATION COEFFICIENTS IN THE ANALYSIS OF COVARIANCE TESTS OF DIFFERENCE BETWEEN THE HIGH SCHOOL SAMPLE AND THE MANPOWER COMBINATION SUB-SAMPLE

Dependent Variable	Concomitant Variable	F	Multiple R^2
Sequential Tests of Educational Progress			
Reading	Verbal Aptitude	9.36	
	Numerical Aptitude	5.63	.54
Writing	Verbal Aptitude	4.34	
	Numerical Aptitude	5.06	
	Clerical Perception	6.48	.61
Social Studies	Verbal Aptitude	7.37	
	Numerical Aptitude	4.49	.57
Mathematics	Numerical Aptitude	5.66	
	Spatial Aptitude	6.02	
	Form Perception	4.56	.60
Kuder Preference Record			
Avoiding Conflict	Clerical Perception	8.07	.26
California Test of Personality			
Self-Reliance	Manual Dexterity	4.15	.15
Personal Freedom	Manual Dexterity	5.10	.18
Withdrawing Tendencies	Spatial Aptitude	5.55	
	Manual Dexterity	4.46	.19
Personal Adjustment	Manual Dexterity	4.56	.22
Anti-Social Tendencies	Finger Dexterity	7.63	
	Manual Dexterity	7.42	.30
School Relations	Motor Coordination	4.77	
	Manual Dexterity	5.33	.23
Community Relations	Manual Dexterity	4.47	.17
Social Adjustment	Finger Dexterity	5.78	
	Manual Dexterity	7.22	.29
Total Adjustment	Finger Dexterity	4.11	
	Manual Dexterity	6.73	.27
IPAT Anxiety Scale			
Self Sentiment	Motor Coordination	4.13	.08

TABLE L

CONCOMITANT VARIABLES AND MULTIPLE CORRELATION COEFFICIENTS IN THE ANALYSIS OF COVARIANCE TESTS OF DIFFERENCE BETWEEN THE HIGH SCHOOL SAMPLE AND THE MANPOWER VOCATIONAL SUB-SAMPLE

Dependent Variable	Concomitant Variable	F	Multiple R^2
Sequential Tests of Educational Progress			
Reading	Verbal Aptitude	16.72	
	Numerical Aptitude	5.48	
	Manual Dexterity	4.23	.61
Writing	Verbal Aptitude	17.96	
	Numerical Aptitude	11.84	
	Form Perception	5.04	
	Manual Dexterity	4.19	.66
Social Studies	Verbal Aptitude	8.19	.54
Mathematics	Numerical Aptitude	6.81	.61
Science	Verbal Aptitude	6.88	.40
Kuder Preference Record			
Familiar Situations	General Aptitude	4.31	
	Numerical Aptitude	6.00	
	Spatial Aptitude	4.25	.12
Working With Ideas	General Aptitude	7.42	
	Verbal Aptitude	10.65	
	Motor Coordination	6.20	.24
Avoiding Conflict	General Aptitude	5.30	
	Verbal Aptitude	5.35	
	Numerical Aptitude	5.07	
	Motor Coordination	8.86	.29
Directing Others	Numerical Aptitude	6.43	
	Motor Coordination	6.22	.23
California Test of Personality			
Self-Reliance	Verbal Aptitude	4.28	.12
Social Standards	Motor Coordination	4.29	.26
Social Skills	Verbal Aptitude	4.44	.22
Anti-Social Tendencies	Numerical Aptitude	6.23	.24
Family Relations	Motor Coordination	6.79	.18
School Relations	Verbal Aptitude	4.31	.27
Social Adjustment	Verbal Aptitude	4.22	
	Motor Coordination	5.70	.27
Total Adjustment	Motor Coordination	3.99	.23

Summary of Analysis Results

Analysis findings are reported in three sections; end-of-training instrument results, follow-up instrument and interview results, and significant covariables disclosed from the analysis of covariance tests. The .05 level of probability was the significance standard in all analyses.

Comparisons between the High School sample and the Manpower sample on the end-of-training instruments disclosed significant differences in favor of the Manpower sample on Mathematics, Anti-Social Tendencies, Social Adjustment, Covert Anxiety and, in the skill areas, the welding test.

Comparisons between the High School sample and the Manpower combination sub-sample revealed significant differences in favor of the combination group on Reading Writing, Mathematics, Science, Control of Destiny, Sense of Personal Freedom, Anti-Social Tendencies, Community Relations, Social Adjustment, Total Adjustment and Covert Anxiety.

Comparison by skill area in these samples resulted in significant differences in shorthand in favor of the High School subjects and in welding in favor of the combination group.

Comparisons between the High School sample and the Manpower vocational sub-sample resulted in significant differences in favor of the vocational group on Anti-Social Tendencies, Social Adjustment, Frustrative Tension and the cosmetology and welding skill achievement tests.

Results of comparisons on the follow-up data indicated significant differences only between welder samples. In comparing the samples on hourly rate of pay, the Manpower sample had significantly higher rate of pay in all three comparisons and the employers of the total

Manpower sample more often rated as adequate, the training of subjects prior to job entry.

Significant covariables revealed through the multiple regression technique were noteworthy in that motor coordination, manual dexterity and finger dexterity were often concomitant with scores in the California Test of Personality.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

Review of the Purpose and Design of the Study

The primary objective of this study was to assess the impact of two vocational training programs upon students in the programs on factors of academic and vocational achievement, personality characteristics and job success. The ex post facto design encompassed two treatment groups which were compared on a posttest basis.

Subjects selected for the study included ninety-two members of the Oklahoma City Manpower Development and Training Act (MDTA) Youth Opportunity Program who completed training during the school year 1964-1965, and sixty-five members of regular vocational classes at Capitol Hill and Central High Schools in Oklahoma City who graduated in May, 1965.

Instruments utilized in collecting data apropos of the research questions were: General Aptitude Test Battery; Reading, Writing, Social Studies, Mathematics and Science tests from the Sequential Tests of Educational Progress achievement battery; vocational achievement instruments; Kuder Preference Record, Personal; IPAT Anxiety Scale; California Test of Personality; Social Class Value Orientation Inventory; Rural-Urban Orientation Inventory; Brayfield-Rothe Job Satisfaction Blank; Youth Opportunity Follow-up Survey; and Employer Rating Survey.

The two samples represented distinct populations -- one, a

population of young people who dropped out of high school before completion; the other, a population of young people who graduated from high school without having dropped out of school at any time during their high school years. Chapter IV was devoted to a comparison of the two samples on personal background data to show their relationship to the greater population of culturally disadvantaged young people.

Limitations

A number of factors related to the study cast limitations on the conclusions that may be drawn from the findings. Those factors are discussed at this point so that the reader may be cognizant of the necessity for conservative conclusions.

The most serious limitation relates to the age difference between the two samples. Biasing variables over which no control could be exercised include maturation level and the many variables related to maturation level. Examples of the seriousness of this bias are the High School sample subjects who were too young (under eighteen years of age) to be employable in their training area at the time of graduation.

A second limitation relates to the biasing effects of having different teachers for each sample. No means of control over teacher quality could be built into the design.

A third limitation has to do with the design of the study and the assumptions one must accept if one is to accept the conclusions. For an ex post facto design to be valid to the reader, he must accept the assumption that the investigator did not select samples or make use of data that would intentionally bias results. In the present study where two populations are involved, one must accept the assumption that the

unknown factors which caused subjects to be in one or the other of the populations were not, during the investigation, concomitant with the dependent variables.

Conclusions

Answers to five research questions were sought in this study. This section states each research question and conclusions based on the findings.

I. Research Question

To what extent will the members of the two samples differ in terms of academic class achievement in reading, writing, social studies, mathematics and science?

Conclusions

Although there was statistically significant difference between the samples only in the measure of mathematics achievement, the total Manpower sample was consistant in obtaining a higher mean score on each test. In view of the previously reported limitations, the investigator concluded conservatively that only the vocationally-related mathematics taught in the Manpower program was more effective than was the traditional-oriented mathematics taught in the high school program. Because the Manpower sample included two different experimental groups with differential treatments, comparison of the High School sample with each Manpower treatment group was possible. As a result of these comparisons, it was concluded that the Manpower combination group, (the group which received both academic and skill training), with significantly higher means on all but the Social Studies test, had the

most effective program in terms of academic achievement.

II. Research Question

To what extent will the members of the two samples differ in terms of vocational class achievement?

Conclusions

Two circumstances, one leading to the other, caused the investigator to conclude that no differences could be detected between the samples in terms of vocational class achievement. The first circumstance was that skill tests could not be made additive across skill areas. The second was that comparisons between samples were necessarily made by skill area, and bias due to quality of teachers could enter on a one-to-one basis. The samples differ significantly on the welding test, with all three comparisons favoring the Manpower sample. The High School sample was significantly higher than the combination group on the shorthand test and also attained higher means (not significant) in the other comparisons. Such conflicting results may be explained in terms of teacher quality bias. The same bias does not explain the situation whereby the vocational group in cosmetology attained a significantly higher mean -- but the combination group was lower -- than the High School sample. The same teacher taught all Manpower students in the same class, therefore, the difference noted here is likely due to sampling error, design error, or an intervening variable.

III. Research Question

To what extent will the members of the two samples differ in terms of personal-social factors of interests, personality, anxiety, rural-urban orientation and social class value orientation?

Conclusions

Relating the entire question and the results of the statistical comparisons between total samples, one must conclude that there is relatively little difference in the effectiveness of the two programs. Only three of the thirty-seven tests for difference between the High School sample and the total Manpower sample were significant. Those three were Anti-Social Tendencies, Social Adjustment and Covert Anxiety. The same conclusion emerged when the Manpower vocational treatment group was compared separately with the High School sample. Again, there were three significant differences -- Anti-Social Tendencies, Social Adjustment and Frustrative Tension. The comparison between the High School sample and the Manpower combination treatment group gave more substance for a conclusion of difference between the groups. Not only were there more significant differences (seven), but the probability level of .01 was exceeded on three of the tests, and the .02 level was reached on two of the tests. Those seven differences and the probability level exceed were: (1) Control of Destiny - .005, (2) Sense of Personal Freedom - .05, (3) Anti-Social Tendencies - .01, (4) Community Relations - .05, (5) Social Adjustment - .02, (6) Total Adjustment - .02, and (7) Covert Anxiety - .01. With such evidence, it was reasonable to conclude that the combination program, correlating skill and academic training in a non-graded, student-centered setting, was more effective for the improvement of personal-social characteristics of the subjects.

IV. Research Question

To what extent will the members of the two samples differ in terms

of initial job success factors of rate of pay, subject satisfaction, employer satisfaction and time involved in gaining employment.

Conclusions

A summary of results of the six factors reveals that high school cosmetologists required less time to obtain a job than did Manpower cosmetologists, Manpower welders received higher pay than did high school welders, and employers of Manpower welders were more satisfied with prior training. No other differences were obtained, either by total samples or by skill area groups. The conclusions was that the two samples did not differ in terms of initial job success.

V. Research Question

To what extent do aptitude, vocational training class and omission of academic classes affect results in the above questions?

Conclusions

Concomitant variables in the analysis of covariance indicate, as expected, that mental aptitudes have significant effect on academic achievement. There is also evidence of a significant relationship between personality factors and physical aptitudes.

No evidence was obtained and no hypotheses were tested upon which conclusions could be formulated about the effect of types of vocational training on the results in preceding questions.

Differences, often significant, were consistantly in favor of the Manpower combination sub-sample. Statistical tests were not made between the two Manpower sub-samples. Differences, although not often significant, were also consistantly in favor of the Manpower

vocational sub-sample. The conclusion was that omission of academic training, per se, did not affect the results relating to the first four questions. There is evidence to support a conclusion that the type of academic training, i.e., training-related versus traditional academic training may have affected results.

Recommendations

A number of questions remain unanswered, and a number of questions can be raised as a result of this study.

One may question how effective the skill training is in preparing subjects for training-related employment. The investigator was aware that only one of the five High School sample welders interviewed after training was employed in a training-related job.

The follow-up surveys elicited data which indicated that high school subjects were refused jobs because they were too young, Manpower subjects were refused jobs because they did not receive a high school diploma, and males from both samples were refused jobs because they had not met military service obligations. One may question how these factors affect a young adult's future occupational plans.

The concomitancy of physical aptitudes with personal and social adjustment characteristics of the kinds of people included in this study leads one to question the nature of the relation and what educators as a group, and guidance personnel in particular, should learn about this area.

The investigator would recommend that these and other problems raised but unanswered by this study should be considered with respect to future research.

There is enough evidence from this study to recommend that future training or retraining programs should include academic as well as skill training.

It is recommended that curriculum study be made to improve the vocational-related academic subjects.

Finally, it is recognized that teacher-training institutions are working in the area of vocational-related academic subjects to prepare teachers with a vocational orientation for teaching such subjects. It is recommended that more research be devoted to this problem and that teacher-training institutions develop more empirical evidence on which to base curricula offerings in vocational-related academic subjects.

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APPENDIX A

DATA COLLECTION INSTRUMENTS

STRUCTURED GROUP INTERVIEW

On the first line, list your name and age.
On the second line, give your address and phone number.
In any case where the blank doesn't apply (for example, if you have no phone), write "none" or "NA", meaning "not applicable".
On the third line, X the proper blanks for sex and race. Please use X's rather than check marks throughout the interview.

Questions will now be asked according to the numbered lines on your response sheets. If I go too fast, please give some indication so that I may know to slow down.

1. Do you work part time? X yes or no.
2. If you work, what kind of job do you have?
3. About how much do you make, either by hour, week or month? About how many hours do you work each week?
4. Do you own a car or cars? If so, list them by year and make, e.g., '56 Ford.
5. List cars owned by others who live with you - again by year and make.
6. With whom do you live? List, by relation, all who are living with you, e.g., parents, 2 brothers, 1 sister - or father, stepmother, sister, and uncle.
7. Describe the place you live, e.g., 6 room, 3 bedroom house - or 3 room apartment, etc. Give your opinion of it, e.g., new, nice, roomy, dump, etc.
8. X whether your folks own or rent, and give approximate house payment per month. If you don't know cost, or if house is paid out, indicate this.
9. X your present marital status.
10. X the appliances you have in your home and add other major appliances in the home if any are not included in the list.
11. Have you lived with both of your natural (real) parents through most of your school years? X yes or no.
12. If not, with whom did you live most of the time?

Questions from here on concerning father or mother will be directed toward parent or substitute parent with whom you lived most of the time. If you have lived mostly with only one parent, e.g., your mother, write "NA" in response to questions about the other parent. Are there any general questions about this before we procede?

13. Where was your father born, and where did he spend his childhood? If you don't know the name of the town or area, please X rural or city as applicable.
14. Where was your mother born, and where did she spend her childhood?
15. How much education did your father get?
16. How much education did your mother get?
17. What is your father's occupation now?
18. About how much does it pay?

19. What is your mother's occupation?
20. About how much does it pay?
21. Do your parents seem concerned with money problems and talk about lack of money?
22. List your brothers and sisters, including sex, age, occupation, location and education, but do not list their names.
23. Do you have relatives living within 3 or 4 blocks of you, but not living with you. If so, list them by placing the number to indicate how many, e.g., if you have 2 aunts who live close by, place a number 2 after "aunt".
24. Do the same for other relatives living in the Oklahoma City area. If there are too many to count easily, just write "many" at the end of the line.
25. Would you consider your family "close knit"? By that I mean, do you get together for Sunday dinner, birthdays, etc. very often? Do you feel close to your family?
26. If you had a very serious problem you wanted advice on, who would you talk to? Check one, or number by preference, e.g., 1 = first choice, etc.
27. Why would you select the first choice above?
28. Did you attend church as a child?
29. What denomination, and with whom did you go?
30. Do you attend church now?
31. What denomination and with whom do you go?
32. List schools you have attended in each grade. Use ditto marks if you desire.
33. Check high school activities, clubs, etc. you are in. Add any not on the list.
34. What other activities would you have liked, and why have you not participated in them?
35. Which have you enjoyed most, elementary, junior or senior high school?
36. Why?
37. Do you ditch school? Remember, this is confidential. X the appropriate answer and if you do ditch, what do you do when you ditch?
38. Why have you stayed in school?
39. Are you one of the most popular students in school?
40. What do you think it takes to be popular and liked by the most popular students? If you don't like the suggested answers, give your own answer.
41. What do you think it takes to be popular with the teachers?
42. How many close friends have you who have been close since 7th or 8th grade?
43. Have any of them dropped out of school? Give number, e.g., none, 2, etc. What were their reasons for dropping?
44. If any have returned to school, give number.
45. If any (who have dropped) have been successful or gotten into trouble, briefly tell about them.
46. What is your father's attitude toward your friends?
47. What is your mother's attitude?
48. Have you dropped close friends because your opinion of them has changed?

49. If yes, what were your reasons for dropping them?
50. Have you ever lived on a farm or visited a farm?
51. What would you like about living on a farm?
52. What would you dislike about it?
53. As you think back about your childhood, whom did you most admire?
54. At the present time, whom do you most admire?
55. Have you ever dropped out of school?
56. What is your principal pastime? What do you do with your free time?
57. What are your plans for the future? (Vocational plans)
58. If you plan to work after graduation, what salary do you hope to make per week three months after graduation?
59. What salary would you hope to be making two years from now?
60. Some people say that our society can be divided into three groups or classes; upper class, middle class, and working class. To which of the groups do you think you belong?
61. Why, or what do you think puts you in that class?
62. In all your schooling, how many grades have you had to repeat?
63. Where have you lived mostly while growing up?

This concludes the first part of the interview. As you know, we will want to follow your progress after you graduate. In order to insure our contacts with you, we would like to have the name, address and telephone number of three relatives or friends who are likely to know where you are living at all times. List them at the bottom of page four.

Pages five and six are self explanatory. You may answer them at your own rate of speed. They conclude the interview, and you may hand in your materials when you have completed them.

INSTRUCTIONS: In the blanks after each of the following questions, write in the number of the answer that seems most correct in your case.

Answers for the first set of questions below

1. Surprised that I did as well as I did.
2. Satisfied with the way I did.
3. A little disappointed in how I did.
4. Very disappointed in how I did.
5. Never let me know how he (or she) felt.

_____Which line do you think best describes how your father felt about the grades you made during the first three or four grades in elementary school?

_____How did he seem to feel about your grades when you were in the 6th, 7th, and 8th grades?

_____How does he seem to feel about your high school grades?

_____How did your mother feel about your grades during your first three or four years in elementary school?

_____How about when you were in the 6th, 7th, and 8th grades?

_____How about in high school?

Answers for the second set of questions

1. Much above average.
2. A little above average.
3. A little below average
4. Quite a bit below average.
5. Stupid.
6. Never let me know how he (or she) felt.

_____Which line do you feel best describes how smart or intelligent your father thought you were in grade school?

_____How about in high school?

_____Which best describes how your mother seemed to feel regarding you while you were in grade school?

_____How about in high school?

_____How do you think your teachers felt about you when you were in grade school?

_____How do you think your high school teachers would rate you?

_____How would you rate yourself?

Answers for third set of questions

1. Treated me as well as they did anyone.
2. Treated me about as well as they did anyone.
3. Seemed to have favorites - not including me.
4. Were often unfair to me.
5. Were almost always unfair to me.

_____This question refers to how fair you felt that your teachers were to you when you were in grade school. Which line best tells how fair you felt they were?

_____How fair do you feel your high school teachers have been?

Answers for fourth set of questions

1. Thinks I could do better for myself.
2. Thinks it is a good deal, and that I am doing the right thing.
3. Thinks I am shooting too high, and that I won't be able to make a go of it.
4. Hasn't said much about it.
5. Doesn't know about it.

_____Which line best describes how your father feels about your present occupational plans?

_____How does your mother feel about your occupational plans?

Answers to fifth set of questions

1. Very interested in the program...glad they enrolled.
2. Fairly interested, but not enthusiastic.
3. Just barely satisfied.
4. Disappointed or dissatisfied.

_____How do you think the majority of your classmates feel about the vocational course they are taking?

_____How do you feel about it?

Answers to the sixth question

1. All of them.
2. Most of them.
3. About half of them
4. A few of them.
5. None of them.

_____About how many of the students in your vocational course do you think will work for a year or more in the vocation they are learning?

PERSONAL DATA SUMMARY

Name _____ Age _____
First Middle Last

Address _____ Phone _____

Sex: Male___ Female___ Race: Indian___ Negro___ White___ Other___

1. Yes___ No___
2. _____
3. _____per hour _____per week _____per month
4. _____
5. _____
6. _____
7. House___ Duplex___ Apartment___ Brick___ Wood___ ___bedrooms
8. Own___ Rent___ _____per month
9. Single___ Married___ Separated___ Divorced___
10. Refrigerator___ Cook stove___ Deep freeze___ Dishwasher___
Disposal___ Washing machine___ Dryer___ Air conditioner___
Window cooler___ Radio___ TV___ Stereo___ Vacuum sweeper___
Sewing machine___ Other_____
11. Yes___ No___
12. _____
13. Rural___ Town or city___ Where_____
14. Rural___ Town or city___ Where_____
15. 8th grade or less__ 9th__ 10th__ 11th__ 12th__ college__
16. 8th grade or less__ 9th__ 10th__ 11th__ 12th__ college__
17. _____
18. _____per week _____per month _____per hour
19. _____
20. _____per week _____per month _____per hour

21. Often___ Occasionally___ Seldom___ Never___

22.

Sex	Age	Occupation	City (if not here)	Education

23. Parent__ Brother__ Sister__ Grandparent__ Aunt,Uncle,Cousin__

24. Parent__ Brother__ Sister__ Grandparent__ Aunt,Uncle,Cousin__

25. Yes___ No___

26. Mother___ Father___ Brother___ Sister___ Grandparent___
Clergyman___ Friend (your age)___ Friend (older)___
"Steady"___ Husband or wife___ No one___ Other_____

27. _____

28. Regularly___ Often___ Occasionally___ Seldom___ Never___

29. _____ _____

30. Regularly___ Often___ Occasionally___ Seldom___ Never___

31. _____ _____

32.

Grade	School	City (if not Oklahoma City)
K		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

33. Sports___ Music___ Subject club___ Service clubs___ Honors___
Class offices___ Other_____

34. _____ _____

35. Elementary___ Junior high___ High school___

36. _____

37. Often___ Occasionally___ Seldom___ Never___ _____

38. Parents insisted___ Wanted education___ Wanted diploma___
Friends were here___ It never occurred to me to quit___
Other_____

39. Yes___ No___

40. Personality___ Intelligence___ Participation___ Car___ Money___
Clothes___ "Be yourself"___ Good follower___ Other_____

41. Get work done___ Behave___ "Apple polish"___ Participate in
class___ Have influential parents___ Other_____

42. _____

43. _____ _____

44. _____

45. _____

46. Approves___ Approves most___ Disapproves___ Disapproves most___
Neutral___

47. Approves___ Approves most___ Disapproves___ Disapproves most___
Neutral___

48. Yes___ No___

49. Too wild___ No longer in school___ Interests changed___
Other_____

50. Yes___ No___

51. Quiet___ Like to grow things___ Like animals___ More room___
Other_____

52. Nothing to do___ No conveniences___ Too far from doctor,
groceries, etc.___ Hard work___ Other_____

53. Mother___ Father___ Older brother or sister___ Grandparent___
Some other relative___ Playmate___ Famous person___
Other_____

54. Mother___ Father___ Brother or Sister___ Other relative___ "Steady"___ Older friend___ Friend (your age)___ Favorite teacher___ Other_____

55. Yes___ No___

56. Movies___ Dates___ Drive-ins___ TV___ Bowling___ Other sports___ Dancing___ Riding around___ Other_____

57. College___ Work in job related to my vocational study___ Marriage___ Work in _____vocation Other plans_____

58. $15-$30___ $31-$45___ $46-$60___ $61-$75___ $76-$90___ $91-$105___ $106-$120___ Over $120___

59. $15-$30___ $31-$45___ $46-$60___ $61-$75___ $76-$90___ $91-$105___ $106-$120___ Over $120___

60. Upper___ Middle___ Working___

61. _____

62. None___ 1___ 2___

63. Rural___ Small town___ Small city___ Large city___

Please list name, address and telephone number of three people who are likely to know where you are living at all times. This information is necessary so that we may follow your progress after you graduate, particularly for those of you who may leave home to go to college, join the service or get work in another city.

1. _____ _____
Name Phone

_____
Address

2. _____ _____
Name Phone

_____
Address

3. _____ _____
Name Phone

_____
Address

Code No._____

YOUTH OPPORTUNITY FOLLOW-UP SURVEY

Sponsored by Oklahoma State University and the Ford Foundation

---

This survey contains general questions about yourself and your plans. Please answer the question as clearly and honestly as you can. Your individual answers will be kept confidential.

GENERAL INSTRUCTIONS: Please read each item carefully. Answer all items that apply to you, and skip those that do not apply.

I. GENERAL INFORMATION:

A. For each place you have lived during the last six months, would you tell us the following:

Your Address	Dates You Lived There	Relationship of Those Who Live or Lived With You
_____	_____ to now	_____
_____	_____ to _____	_____
_____	_____ to _____	_____
_____	_____ to _____	_____

B. Where you are living now, are you renting_____, buying_____, or just staying with someone_____? (Please check one.)

C. What is your present marital status? _____

D. Has this changed during the last six months? No_____ Yes_____. If yes, in what way?

_____

E. If married, what is your husband or wife's occupation now? _____

For whom does he or she work (if employed)? _____

_____

F. Your Present Occupational Status:

Circle **ALL** statements that apply in the list below. Then give any additional explanation that might be necessary.

Men	Women
1. Student	1. Student
2. Military (Active Duty)	2. Housewife
3. Employed, full time	3. Employed, full time
4. Employed, part time	4. Employed, part time
5. Not employed, not actively seeking work	5. Maternity leave, plan to return or continue working
6. Not employed, actively seeking work	6. Not employed, not actively seeking work
7. Disabled (Please explain)	7. Not employed, actively seeking work
8. Other (Please explain)	8. Other (Please explain)

Explanation: _____

_____

_____

G. Regardless of what you are doing, how do you feel about the life you are now living? (Circle best answer below.)

1. I really like it.
2. My likes just balance my dislikes.
3. I don't like it, but I will have to put up with it.
4. I hate it.

H. Will you tell why you circled the one you did.

_____

_____

_____

_____

I. If not employed, what are the main sources of your income or support? _____

_____

II. JOB INFORMATION: If employed **AT ALL** outside the home **now**, would you answer the following:

A. Name of company or employer: _____

B. Date you first started on this job or with this employer: _____

C. What do you **actually do** on this job now? _____

_____

D. How does this differ from what you did when you **first started** on this job? _____

_____

E. How many hours did you work on this job last week? _____ How many hours do you usually work? _____

F. Would you estimate your **total take home pay** for last week? _____

G. How does this pay compare with what you got when you **first started** on this job? _____

_____

H. What sort of training, if any, have you been given by this employer? _____

_____

_____

III. JOB SATISFACTION:

A. If employed at all outside the home now, we would like for you to tell us how you **feel** about your present job. (Circle best answer at right of page.) →

1. I really like my job.
2. My likes just balance my dislikes.
3. I don't like it, but I will have to put up with it.
4. I hate it.

B. What things do you like MOST about your job? _____

_____

C. What things do you like LEAST about your job? _____

_____

D. If you had it to do over, would you try to get this type of job again? _____

_____

E. Do you expect to continue with your present job? Yes_____ No_____ Undecided_____.
If not, why? _____
About when do you plan to change? _____
What will you do then? _____
_____

F. On the whole do you feel your present line of work offers opportunity for you to do the things you can do best?
Yes_____ No_____ Why or why not? _____
_____
_____

G. **WOULD YOU NOW COMPLETE THE SEPARATE FORM WITH THE WORDS JOB OPINIONS AT THE TOP.**

IV. OTHER JOBS HELD DURING THE LAST SIX MONTHS:

A. How many different jobs have you had during the last six months that you do **not** hold now? _____

B. **PLEASE DESCRIBE EACH OF THESE JOBS ON THE BACK OF EXTRA SHEET ENCLOSED.**

V. PERSONAL INFORMATION:

A. Regarding your spare time, what do you do with your time when there is nothing you **have** to do? _____
_____
_____
_____

B. Would you list any groups that you belong to or take part in like clubs, unions, church or religious groups.
_____
_____

C. Do you ever read in your spare time? Yes_____ No_____

1. What type of magazines, books, etc. (if any)? _____
_____

2. Do you read the newspaper? Yes_____ No_____ If yes, please check **about how often** you read the parts of the newspaper listed below.

	1. Daily	2. Weekly	3. Monthly	4. Never
a. Front page news	_____	_____	_____	_____
b. Sports page	_____	_____	_____	_____
c. Editorials	_____	_____	_____	_____
d. Comics	_____	_____	_____	_____

D. During the last six months, have you been studying any kind of special courses, home study courses or correspondence courses? Yes_____ No_____ If yes, please describe.
_____
_____
_____

E. Have you been going to any kind of school during the last 6 months? Yes_____ No_____

If yes, what kind? _____

Could you tell me why you are doing this or how you plan to use what you learn?

_____

_____

_____

VI. FOR PERSONS WHO WERE IN MANPOWER TRAINING CLASSES

A. Looking back at the Manpower program in general, in what ways did it help you most?

_____

_____

_____

_____

B. In what way could it have helped you more? (What do you wish you had gotten that you did not?)

_____

_____

_____

VII. Future Plans FOR ALL PERSONS

A. What would you really like to be doing two years from now? _____

_____

_____

_____

B. Do you expect to be doing what you would really like two years from now? Why or why not? _____

_____

_____

_____

VIII. Information for next follow-up FOR ALL PERSONS

A. We are very interested in keeping in touch with you and will check with you again in about six months. To help us in contacting you then, would you please answer these questions:

1. Where will you most likely be living six months from now? _____

_____

2. Would you tell us the names and addresses of two people who will always know where you are living.

Name	Address	Phone Number
_____	_____	_____
_____	_____	_____

OKLAHOMA STATE UNIVERSITY • STILLWATER

Research Foundation
FRontier 2-6211, Ext. 271

74075

An Oklahoma State University research team, sponsored by the Ford Foundation, is studying the effects of training on job success. We are asking your assistance in gathering vital information which will be used in formulating future training programs for the young people of America.

According to our record, _____, a participant in this study, has been or is now your employee. You can make a most valuable contribution by filling in the information below and returning it in the self-addressed envelope. Of course, it will be held in strictest confidence.

Sincerely,

John C. Egermeier
Associate Project Director

INSTRUCTIONS: Please check the most appropriate response to each question.

1. How adequately was the employee trained for this job before being employed by you?

___Very Adequate ___Just Adequate ___Slightly Inadequate
___Very Inadequate

2. How satisfied are or were you with the employee on the job in respect to the following:

	Very Satisfied	Just Satisfied	Slightly Dissatisfied	Very Dissatisfied
a. General attitude	____	____	____	____
b. Job performance	____	____	____	____

3. Dates of employment: Started_____ Now (or ended)_____ (Approximate)

4. Rate of pay: Started_____ Now (or ended)_____per (hr)(wk)(mo). (Approximate)

APPENDIX B

CHI-SQUARE ANALYSES OF BACKGROUND FACTORS WHICH WERE NOT SIGNIFICANTLY DIFFERENT BETWEEN SAMPLES

TABLE LI

CHI-SQUARE ANALYSIS OF BACKGROUND FACTORS WHICH WERE NOT SIGNIFICANTLY DIFFERENT BETWEEN SAMPLES

Factor and Sample	Cell Classification			Result
SEX OF SUBJECTS	Male	Female		
Manpower	26	66		$x^2 = .59$
High School	23	42		$p > .30$
RACE OF SUBJECTS	White	Non-white		
Manpower	70	22		$x^2 = .38$
High School	53	12		$p > .50$
EXPRESSED QUALITY OF HOMES	Fair or Poor	Good or Better		
Manpower	28	37		$x^2 = .31$
High School	30	34		$p > .50$
NEWEST CAR OWNED BY SUBJECT	1961-65	1955-60	1954 or Older	
Manpower	11	36	12	$x^2 = 4.48$
High School	1	14	9	$p > .10$
NEWEST CAR OWNED BY OTHERS IN HOME	1961-65	1960 or Older		
Manpower	10	18		$x^2 = 1.01$
High School	28	28		$p > .30$
OCCUPATIONS OF FATHERS	Professional	White Collar	Blue Collar	
Manpower	10	16	43	$x^2 = .82$
High School	8	9	37	$p > .50$
OCCUPATIONS OF MOTHERS	White Collar	Blue Collar	Housewife	
Manpower	21	19	39	$x^2 = .04$
High School	17	14	30	$p > .98$

TABLE LI (Continued)

Factor and Sample	Cell Classification			Result
INCOME OF FATHERS, PER WEEK	Under $90	$90-$120	Over $120	
Manpower	18	23	18	$X^2 = .36$
High School	13	17	10	$p > .80$
INCOME OF MOTHERS, PER WEEK	Under $90	$90-$120	Over $120	
Manpower	16	15	9	$X^2 = 1.89$
High School	13	7	10	$p > .30$
MOTHERS' BIRTHPLACE AND BACKGROUND	Rural	Small Town	Urban	
Manpower	54	25	7	$X^2 = .19$
High School	38	20	6	$p > .90$
EDUCATION OF FATHERS	8th Grade or Less	Some High School	High School Graduate	Some College	
Manpower	42	9	12	14	$X^2 = 3.02$
High School	39	8	10	5	$p > .30$
EDUCATION OF MOTHERS	8th Grade or Less	Some High School	High School Graduate	Some College	
Manpower	25	26	19	8	$X^2 = 3.88$
High School	14	30	12	9	$p > .20$
PARENTS' ECONOMIC CONCERN, TIME OF DROPOUT	Little Concern	Much Concern		
Manpower	54	30		$X^2 = .21$
High School	45	20		$p > .50$
YOUNGER MALE SIBLINGS	None	One	Two or More	
Manpower	45	25	21	$X^2 = 3.77$
High School	42	11	12	$p > .10$

TABLE LI (Continued)

Factor and Sample	Cell Classification			Result
OLDER MALE SIBLINGS	None	One	Two or More	
Manpower	47	26	19	$X^2 = 2.68$
High School	34	12	19	$p > .20$
YOUNGER FEMALE SIBLINGS	None	One	Two or More	
Manpower	44	22	25	$X^2 = 2.82$
High School	39	15	11	$p > .20$
OLDER FEMALE SIBLINGS	None	One	Two or More	
Manpower	52	23	17	$X^2 = .08$
High School	38	15	12	$p > .95$
EDUCATION, OLDER MALE SIBLINGS	Completed High School		Dropped Out	
Manpower	25		19	$X^2 = 1.42$
High School	26		10	$p > .20$
EDUCATION, OLDER FEMALE SIBLINGS	Completed High School		Dropped Out	
Manpower	26		17	$X^2 = .09$
High School	20		10	$p > .80$
JOB LEVEL, OLDER MALE SIBLINGS	Middle Level Jobs		Lower Level Jobs	
Manpower	26		22	$X^2 = .05$
High School	19		16	$p > .50$
JOB LEVEL, OLDER FEMALE SIBLINGS	Middle Level Jobs		Lower Level Jobs	
Manpower	10		30	$X^2 = .14$
High School	9		19	$p > .70$
RELATIVES LIVING NEARBY	None	One Family	More Than One Family	
Manpower	58	22	9	$X^2 = 1.61$
High School	45	11	9	$p > .30$

TABLE LI (Continued)

Factor and Sample	Cell Classification				Result
RELATIVES LIVING IN OKLAHOMA CITY AREA	None	One Family	Two Families	More Than Two Families	
Manpower	13	12	15	52	$X^2 = .62$
High School	10	6	10	39	$p > .80$
SUBJECTS' OPINIONS, FAMILY TIES		Close	Not Close		
Manpower		56	30		$X^2 = .12$
High School		43	20		$p > .70$
SUBJECT'S CONSULTANT IN TIME OF TROUBLE	Parent	Spouse or "Steady"	Other Relative	Other Person	No One
Manpower	33	17	14	20	7	$X^2 = 1.77$
High School	27	13	9	14	2	$p > .70$
CHURCH ATTENDANCE WHEN YOUNG		Regular	Not Regular		
Manpower		68	24		$X^2 = 2.17$
High School		40	25		$p > .10$
CHURCH ATTENDANCE NOW		Regular	Not Regular		
Manpower		27	65		$X^2 = .00$
High School		18	47		$p > .95$
ATTENDED CHURCH WITH, WHEN YOUNG	Family		Other Relatives	Other Persons or No One	
Manpower	54		14	12	$X^2 = 4.30$
High School	32		19	7	$p > .10$
ATTENDS CHURCH WITH, NOW	Relative		Other Person	No One	
Manpower	33		4	4	$X^2 = 5.22$
High School	30		8	13	$p > .05$

TABLE LI (Continued)

Factor and Sample	Cell Classification			Result
CHURCH DENOMINATION WHEN YOUNG	Baptist	Pentecostal Holiness or Assembly of God	Other	
Manpower	45	12	30	$X^2 = 2.28$
High School	37	10	14	$p > .30$
CHURCH DENOMINATION NOW	Baptist	Pentecostal Holiness or Assembly of God	Other	
Manpower	28	7	19	$X^2 = .99$
High School	29	9	14	$p > .50$
PARTICIPATION IN ACTIVITIES, LAST SCHOOL	None	Minor Activities	Major Activities	
Manpower	42	15	32	$X^2 = 4.62$
High School	20	18	25	$p > .05$
PREFERENCES FOR ADDITIONAL ACTIVITIES	None	Athletics	Other	
Manpower	57	14	19	$X^2 = .14$
High School	41	9	15	$p > .90$
REASON SUBJECT DID NOT PARTICIPATE IN ADDITIONAL ACTIVITIES	Economic	"Too Busy"	Other	
Manpower	8	20	19	$X^2 = 4.51$
High School	3	13	9	$p > .10$
REASON SUBJECT PREFERRED GIVEN SCHOOL LEVEL	Social	Personal	Curriculum	
Manpower	18	19	14	$X^2 = 2.67$
High School	27	22	9	$p > .20$
SUBJECTS' POPULARITY, LAST SCHOOL	One of Most Popular	Not One of Most Popular		
Manpower	11	61		$X^2 = .66$
High School	6	59		$p > .30$

TABLE LI (Continued)

Factor and Sample	Cell Classification				Result
CLOSE HIGH SCHOOL FRIENDS WHO BECAME DROPOUTS	None	One or More			
Manpower	26	50			$X^2 = 1.97$
High School	29	32			$p > .10$
FATHER'S ATTITUDE TOWARD CLOSE FRIENDS	Approved	Disapproved			
Manpower	59	6			$X^2 = .29$
High School	35	6			$p > .50$
MOTHER'S ATTITUDE TOWARD CLOSS FRIENDS	Approved	Disapproved			
Manpower	66	9			$X^2 = .88$
High School	51	3			$p > .30$
SUBJECTS' RURAL EXPERIENCE	None	Some			
Manpower	76	12			$X^2 = 1.14$
High School	51	14			$p > .20$
ATTITUDE TOWARD RURAL LIFE	Like	Dislike	Neutral		
Manpower	40	15	18		$X^2 = .81$
High School	33	10	19		$p > .50$
EXPECTED WEEKLY EARNINGS AFTER GRADUATION	$60 or Less	$61-75	$76-90	Over $90	
Manpower	13	24	17	10	$X^2 = 1.46$
High School	16	17	18	10	$p > .50$
EXPECTED EARNINGS IN TWO YEARS	$90 or Less	$91-105	Over $105		
Manpower	16	16	19		$X^2 = 4.31$
High School	15	12	35		$p > .10$

TABLE LI (Continued)

Factor and Sample	Cell Classification		Result
SELF CONCEPT OF SOCIAL CLASS	Middle or Upper Class	Lower or Working Class	
Manpower	67	18	$X^2 = 1.58$
High School	43	20	$p > .20$
FATHER'S ATTITUDE ABOUT SUBJECT'S GRADES IN ELEMENTARY SCHOOL	Satisfied	Dissatisfied	
Manpower	55	29	$X^2 = .17$
High School	44	18	$p > .50$
FATHER'S ATTITUDE ABOUT JUNIOR HIGH GRADES	Satisfied	Dissatisfied	
Manpower	48	34	$X^2 = .31$
High School	40	22	$p > .50$
MOTHER'S ATTITUDE ABOUT ELEMENTARY GRADES	Satisfied	Dissatisfied	
Manpower	68	22	$X^2 = 2.68$
High School	56	8	$p > .10$
MOTHER'S ATTITUDE ABOUT JUNIOR HIGH GRADES	Satisfied	Dissatisfied	
Manpower	63	27	$X^2 = .19$
High School	47	16	$p > .50$
FATHER'S RATING OF INTELLIGENCE AT ELEMENTARY SCHOOL AGE	Above Average	Below Average	
Manpower	54	30	$X^2 = .04$
High School	38	24	$p > .80$
FATHER'S RATING OF INTELLIGENCE AT HIGH SCHOOL AGE	Above Average	Below Average	
Manpower	46	35	$X^2 = .47$
High School	39	22	$p > .30$

TABLE LI (Continued)

Factor and Sample	Cell Classification		Result
MOTHER'S RATING OF INTELLIGENCE AT ELEMENTARY SCHOOL AGE	Above Average	Below Average	
Manpower	63	27	$X^2 = .51$
High School	49	15	$p > .30$
TEACHER'S RATING OF INTELLIGENCE AT ELEMENTARY SCHOOL AGE	Above Average	Below Average	
Manpower	62	27	$X^2 = .01$
High School	44	21	$p > .90$
SELF RATING OF INTELLIGENCE	Above Average	Below Average	
Manpower	61	28	$X^2 = .01$
High School	46	19	$p > .90$
SUBJECTS' CONCEPT OF TEACHERS' FAIRNESS, ELEMENTARY SCHOOL	Fair	Unfair	
Manpower	82	8	$X^2 = .01$
High School	58	7	$p > .90$
SUBJECTS' CONCEPT OF TEACHERS FAIRNESS, HIGH SCHOOL	Fair	Unfair	
Manpower	78	12	$X^2 = .02$
High School	56	9	$p > .80$
INTEREST IN SKILL TRAINING PROGRAM	Enthusiastic	Unenthusiastic	
Manpower	55	34	$X^2 = 2.49$
High School	31	34	$p > .10$

VITA

William Donald Frazier

Candidate for the Degree of

Doctor of Education

Thesis: A COMPARATIVE STUDY OF SOME EFFECTS OF VOCATIONAL EDUCATION ON CULTURALLY DISADVANTAGED YOUTH

Major Field: Educational Administration

Biographical

Personal Data: Born near Perry, Oklahoma, September 20, 1924, the son of William H. and Ada L. Frazier.

Education: Graduated from Perry High School in 1942; received the Bachelor of Music Education degree from Phillips University with a major in instrumental music in May, 1950; received the Master of Educational Administration degree from Phillips University in May, 1953; completed the requirements for the Doctor of Education degree in July, 1966.

Professional experience: Employed in Oklahoma public schools as band director at Enid from 1948 to 1951; at Cleo Springs from 1951 to 1952; as elementary principal at Orienta from 1952 to 1953; as elementary principal and music teacher at Butler from 1953 to 1955; as junior high principal and music teacher at Hinton from 1955 to 1962. Employed at Oklahoma State University as graduate teaching and research assistant from 1962 to 1966; as assistant professor and research specialist for the Vocational Research Coordinating Unit in 1966. Served from 1943 to 1946 in U. S. Army.

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