THE ASSOCIATION BETWEEN VARYING DEGREES OF VOCATIONAL TRADE AND INDUSTRIAL AND/OR TECHNICAL EDUCATION AND THE SUBSEQUENT EARLY CAREER PATTERNS OF HIGH SCHOOL GRADUATES

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Submitted to the Faculty of the Graduate College
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in partial fulfillment of the requirements
for the Degree of
DOCTOR OF EDUCATION
May, 1972

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ACKNOWLEDGMENTS

The writer wishes to express his indebtedness and appreciation to Dr. Robert Price, chairman of his Advisory Committee, for his encouragement and assistance during the writing of the study and for the many kindnesses extended beyond the realm of duties as adviser.

Sincere gratitude is expressed to the other members of the writer's advisory committee: Drs. William Stevenson, Lloyd Wiggins, Donald Phillips, and James Key for their encouragement, assistance and contributions to the writer of this study. Gratitude is expressed to Drs. William Frazier and Paul Braden for their advice and assistance with respect to statistical concepts used in the study.

Special recognition is expressed to the writer's parents, Lloyd and Audie, to his three sons, Tim, Donn and Bill, and daughters-in-law, Sondra, Carol and Sharon. The study is dedicated to his wife, Isabel, without whose love and encouragement he could never have completed it.

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CHAPTER I

NATURE OF THE PROBLEM

Introduction

Almost 200 years ago Ben Franklin told his fellow Americans that a man with a trade had an estate. Today, many educational leaders are stating that a man without a trade hardly has a chance. Merely the possession of warm young bodies and strong young backs no longer constitutes adequate resources for competition where automation and computerization have taken over most of the repetitive work formerly done by people without special skills and knowledge. The concept -- that increased need for trade and industrial and technical education is critical in today's society -- is not restricted to any one segment of the population.

While considerable data are now available pertaining to the level of education needed by our population, some very pertinent questions about the relationship of the nature and extent of education received and subsequent early career patterns remain unanswered. A study of occupational trends and educational requirements, based on information supplied by the Bureau of Labor Statistics, the U.S. Office of Education, and the University of Michigan Center for the Study of Higher Education, show that in 1930, 58 percent of the nation's occupations required grade school training or less; 32 percent required a high school education, and 10 percent, a college degree.

A recent U.S. Office of Education survey provided the following 1970 estimates for educational requisites; six percent of the occupations will require a grade school education; 26 percent, high school or vocational school training; 50 percent, post-secondary education; and 18 percent, a baccalaureate degree or higher (6).

It is evident that problems of providing equal and adequate opportunities for the culturally deprived will require additional resources e.g., school personnel and services. If we could measure the cost of this resource allocation against the actual cost of delinquency, crime, and unproductivity, it would be a bargain in terms of dollars. If we measure the cost in terms of unfulfilled human desires, under-developed capabilities, and unexplored potential for improving the quality of democratic living -- any amount of money needed to do the job might be well worth the expenditure (20).

Statement of the Problem

Although leaders who influence resource allocation in many areas of human resource development have some evidence to support expanded efforts in vocational-technical education, insufficient data are available on possible associations occurring between such training and the benefits derived by participants in these programs and the association and possible effects of these programs on early career development. Therefore, the study was planned to attack the problem of securing sufficient data on which the association between training and early career patterns could be more firmly established.

Purpose of the Study

This research effort was primarily concerned with identifying early career patterns of selected 1967 Oklahoma public high school graduates. Specifically, the major task of the study was that of investigating possible association between varying degrees of trade and industrial and/or technical education completed and subsequent early career patterns of the following groups:

Group A: Students having completed four or more semesters of trade and industrial and/or technical education were designated as vocational.

Group B: Students having completed one to three semesters of trade and industrial and/or technical education were designated as some-vocational.

Group C: Students having completed no vocational education of any kind were designated as non-vocational.

The above groups were subsequently surveyed in two follow-up efforts to obtain data in the following areas: (1) Number employed, (2) Amount of wages per hour secured. (3) Number taking the first job offered, (4) Number entering the military service, (5) Number enrolled in school or advanced training, and (6) Number of college credit hours received in the four years following graduation. This was done in order to discover and identify selected aspects of early career patterns.

Data were secured from the 1967 graduates of Oklahoma public high schools in October of 1967 and again in January of 1971 to determine possible association between training and early career patterns, and varying degrees of vocational, trade and industrial and/or technical education received in high school. (See Chapter III for detailed methodology).

Research Questions

Based upon literuature reviewed, and a thorough study of current and developing needs for knowledge about career patterns, four research questions were formulated for consideration and study:

1. What is the employment status of graduates four months and four years after graduation?
2. What is the difference in hourly wage rates of graduates four months and four years after graduation?
3. What is the military status of graduates four months and four years after graduation?
4. What is the educational status of graduates four months and four years after graduation?

These four areas appear to be consistent with most of the studies reviewed; specifically, the present study was concerned with investigating possible associations between varying degrees of trade and industrial and/or technical education completed and subsequent early career patterns.

The specific purpose of the study can well be expressed as an effort resulting in acceptance or rejection of the following null hypotheses:

HO_1 : There is no significant difference among the groups in terms of employment status (other than military service) four months following graduation.

HO_2 : There is no significant difference among the groups in terms of employment status (other than military service) four years following graduation.

HO_3 : There is no significant difference among the groups in terms of being employed or not employed (other than military service) four months following graduation.

HO_4 : There is no significant difference among the groups in terms of having been employed or not having been employed (other than military service) in the four years following graduation.

HO_5 : There is no significant difference among the groups in terms of taking the first job offered and not taking the first job offered four months following graduation.

HO_6 : There is no significant difference among the groups in terms of hourly wage of employed subjects four months following graudation.

HO_7 : There is no significant difference among the groups in terms of hourly wage of employed subjects four years following graduation.

HO_8 : There is no significant difference among the groups in terms of entering the military service and not entering the military service, four months following graduation.

HO_9 : There is no significant difference among the groups in relation to military status four years following graduation.

HO_{10}: There is no significant difference among the groups in terms of having served in the military service and not having served in the military service, four years following graduation.

HO_{11}: There is no significant difference among the groups in terms of having enrolled or not having enrolled for advanced schooling four months following graduation.

HO_{12}: There is no significant difference among the groups in terms of having had advanced schooling or not having had advanced schooling, during the four years following graduation.

HO_{13}: There is no significant difference among the groups in the extent of advanced training completed four years following graduation.

HO_{14}: There is no significant difference among the groups in the number of college credit hours completed by those subjects who enrolled in college, as determined four years following graduation.

The four research questions presented previously and the corresponding hypotheses which relate to each are grouped in an attempt to provide for clarity of expression:

1. What is the employment status of graduates four months and four years after graduation? (HO_1, HO_2, HO_3, HO_4, and HO_5.)

2. What is the difference in hourly wage rates of graduates four months and four years after graduation? (HO_6 and HO_7.)
3. What is the military status of graduates four months and four years after graduation? (HO_8, HO_9, and HO_{10}.)

Significance of the Study

It was hoped that this study would reveal an association between the amount of vocational trade and industrial and/or technical training the individual took while in high school and the type of employment and wages the individual secured after graduation.

Many high school graduates are confronted with military service, which has been over-looked by some advisers of students concerned with career development. It was hoped that the study would reveal a need for more attention to the effects of military service on development of early career patterns.

An opinion often expressed by many administrators and counselors concerning vocational-technical and career education in high school is that it encourages the student not to pursue further education and, therefore, seems to limit or terminate his formal education. It was anticipated that the study would reveal that vocational training in high school does not function as a deterrent to post-secondary education. It was further anticipated that the study would reveal the kind of training most often received by students after leaving high school, whether it was in the form of post-secondary vocational training, junior college or higher education.

It was further anticipated that the study could be of importance

to those engaged in general education, as well as to those engaged in vocational education.

Definition of Terms

1. Types of Groups:

   Group A, Vocational: Refers to students who have completed four or more semesters of trade and industrial and/or technical education.

   Group B, Some-Vocational: Refers to students who have completed one to three semesters of trade and industrial and/or technical education.

   Group C, Non-Vocational: Refers to students who have had no vocational education of any kind.

2. Subjects: Refers to selected 1967 graduates of Oklahoma public high schools.

3. Vocational Training: When used in this study refers to subjects who have had vocational trade and industrial and/or technical education.

4. Career Patterns: When used in this study refers to selected aspects of career development that can be isolated at some point in time such as: employment status, hourly wage, military status, or educational status. Career patterns are developed through a sequence of positions, jobs or occupations occupied by a person. These statuses may extend from pre-vocational to post-vocational and any aspect of life that may account for or influence the selection of a job or position plays a part in determining a career pattern. There are a number of pathways the individual may take in developing his/her career pattern.

Procedure

The study was begun in 1967 as one of the many projects conducted by the Vocational Research Coordinating Unit of Oklahoma. The study throughout the four years was conducted in cooperation with this agency. Secured information, findings, results, and recommendations will be readily made available to the State Department of Vocational and Tech-

nical Education.

Every public high school in the State of Oklahoma was sent questionnaires with the request that each senior student graduating in 1967, fill out and return a questionnaire. Returns totalled about 96 percent of those mailed. These questionnaires were taken to Oklahoma City and run through a scanner at the Computer Center; information was then transferred to computer cards for future use. From the total of 34,000 responses placed on computer cards three groups were established according to the amount of vocational trade and industrial and/or technical training the graduates had received while in high school. These groups designated A, B, and C, have been described previously.

There were 200 subjects randomly selected from each of the three groups. The first questionnaire was mailed to the 600 selected graduates in October of 1967 and the second questionnaire was mailed in January of 1971.

The second follow-up questionnaire was directed toward a renewed emphasis with a longitudinal comparative study of groups, comprising the same population as administered four years earlier. Comparing the same subjects in the areas of employment, hourly wage, military status and educational status, made it possible to determine if significant differences occurred among the groups, either four months or four years following graduation.

Limitations of the Study

It is readily recognized that many of the problems facing high school graduates are in the area of: (1) employment, (2) wages, (3) military service, and (4) advanced training. One may increase the mag-

nitude of any one or all of these problems through emphasis of certain aspects of our society, (e.g., sex, race, or socio-economic status). It was a decision of the investigator that in this study these three aspects of our society not be considered separately. The major thrust was to obtain an over-all realistic picture of possible association between varying degress of vocational trade and industrial and/or technical education and the effects it might have on the early career patterns of high school graduates. Therefore, sex, race, and socio-economic status were not considered in this study, although their importance in many other studies is acknowledged.

In this study the term "career pattern" was limited to those selected aspects or combination of aspects of career development that were capable of isolation with regard to nature and extent at a given point in time. Basically this was done in order to facilitate development of null hppotheses that could be statistically tested and subsequent conclusions be specifically descriptive of career patterns.

CHAPTER II

REVIEW OF SELECTED LITERATURE

Introduction

The major problem with which the study was concerned relates to insufficient data available regarding the association between training and early career patterns. In order to organize this review of literature in such a way as to identify the most salient research questions related to the above problem, it was decided to divide the chapter into the following sections: (1) The World of Work, (2) Education and Aspirations, (3) Career Development, (4) Placement and Follow-up, and (5) Summary.

The World of Work

Almost simultaneously four trends have come into being and are shaping the future of America. There is an increase in unemployment among youth. There are fewer vocations they can enter without skill and technical training. Knowledge is growing geometrically, and the cost of welfare for the nation's unemployed has reached a level that is difficult to maintain (11).

During the 1950's the number of young workers entering the labor force each year was relatively stable. In 1959 there were only a half-million more in the labor force than in 1950 (26). During the decade of the 1960's there was an increase of about six million young workers

seeking to enter the labor force (12).

During the decade of the 60's national interest in young workers began a definite and accelerated change, as the labor market experiences of younger persons were elevated to the nature and level of a social problem. The problem was, and continues to be, recognized as unemployment. Teenagers have always been more susceptible to unemployment than adults. During the latter portion of this period the already high teenage unemployment rate began to rise rapidly relative to that of other age groups (12).

In 1967, persons aged 16-19 accounted for 8.5 percent of the labor force, but for 28 percent of the unemployment. On the basis of all the available evidence, higher teenage unemployment must be attributed to substantial increases in the supply of teenage labor and to the very important changes in demands for skill training. Between 1953 and 1957, the population aged 16-19 increased by 700,000; between 1957 and 1960, by 1.4 million; between 1960 and 1964, by 2 million; and between 1964 and 1966, by 1.4 million with the increase slackening in 1967 (12). Unemployment is one of the many problems that high school graduates face.

In 1963 the unskilled workers made up five percent of the work force, but almost 15 percent of all the unemployed were in this group. Unemployment was over twice as high among the young non-white workers as it was among the young white workers. These were the two groups in which there were the largest percentages of unskilled workers (3).

The emergence of a youth unemployment problem in this country is but one phenomenon indicating the impact of new technology, an impact which Chase promises will be impersonal, nonideological, relentless and,

possibly, overwhelming (3). Fully a fifth of the out-of-school youth under 21 were unemployed, (in 1963) and the youth unemployment rate, already higher than it was during the depression, reaches higher levels month after month. Those who do find work end up in low-skill, low-pay jobs, offering neither security nor little advancement, jobs frustratingly below their occupational potential. Industry has little place for the worker without a skill (13).

The high incidence of delinquency and crime among jobless youth is well documented; less widely appreciated is the tremendous reservoir of idleness, frustration, resentment, and defeat that lies within their burgeoning numbers. Lacking jobs, "their badge of belonging," reports the President's Committee on Youth Employment, these young men and women represent tomorrow's cast-offs and chronic dependents, those who will live in poverty of body and mind, and who will bring up their children in their own image (23). Without an occupational status, Brookover and Nasew remind us, "the individual has few other statuses which are capable of offering him a respected position in the community" (2).

When an untrained and unskilled young man is able to find a job, typically he enters the labor market at a very low level. If he is a high school graduate or has attended college for a while, he may then become a clerk in a store or a route salesman. These are deadend jobs and he knows it. He becomes frustrated; lack of initiative for him has become a personal defeat. Chances are he will soon quit his job and seek another. Job turnovers among people under 22 is far higher than among older workers and is more happenstance than planned (6).

With so much competition from young people who have higher levels of education, the boy or girl who does not get good preparation for work

will find the going more difficult in the years ahead. Employers will be more likely to hire workers who have at least a high school diploma. Furthermore, present experience shows that the less education and training a worker has the less chance he has for a steady job, because unemployment falls heaviest on the worker who has the least education (8).

Technology, as it destroys jobs, also creates jobs; for example, while elevator operators are losing their jobs to automatic elevators, new jobs are created in the design, building, sale, installation and servicing of the new equipment. The newly created jobs are not likely to be filled by the displaced workers unless they have the educational potential and training opportunities to meet the job requirements. This would require retraining on a post-secondary level which should be made available to all who need and want such training or retraining (26).

One group of workers, women, should not be overlooked in our employment picture. The decade of the 1960's has witnessed important changes in the status of women in our society, changes which have been reflected in the labor force. The trend toward increased employment of women is evident (14). Most women work sometime during their lives, whether they marry or not. Only yesterday, historically speaking, when a girl married she left work amid envious farewells of her office or shop mates. Today a girl who announces she is being married is asked by her supervisor, "Are you taking a trip, or will you be back Monday?" (14).

Although the fight for equal pay for women can be recognized as having made great strides, the parallel battle for equal opportunity has hardly begun. Madeleine Francis argues that women do not have the opportunity to train for jobs outside their traditional areas of employment and that the trends do not indicate any general improvement of the situation (18).

Education and Aspirations

Between 1939 and 1959, young people from all income groups increased their aspirations at a rather uniform rate to attend college. Between 1960 and 1966, a new trend started manifesting itself. Aspirations of the poor to acquire a college degree began to catch up with those of the rich. Twice as high a proportion of high school seniors from the lowest income quartile hoped to attend college in 1966 as did in 1959. The proportion of high school seniors from families in the second income quartile (families whose income is below the median) who expected to enroll in college rose from 40 percent in 1959 to 52 percent in 1966. The desire to attend college grew more modestly in the upper two income quartiles. From 52 percent to 65 percent of seniors in the third quartile, and from 68 percent to 74 percent of those in the highest quartile in 1966 (8).

There were 230,000 more freshmen who enrolled in college full-time in the fall of 1968 than would have been expected if the trend of 1956-1965 had been followed.

The increasing rate of post-secondary and college attendance by students from poorer families became apparent soon after the enactment of the Higher Education Act of 1956. During the academic year that began in 1966, some 900,000 students received financial assistance under one or more of the Federal Aid Programs administered by the U.S. Office of Education. During 1968-69, the number of young people aided by Office of Education Programs alone was in excess of of 1.5 million students. The Veteran's Administration contributed 323 million dollars to student finances in the academic year 1968-69 and expected to increase this aid to 425 million dollars in the academic year of 1969-1970 (8).

According to Venn in 1963, fully 15 percent of the high school graduates who did not go to college were unemployed, and a high percentage of those who did have jobs were underemployed. Fifty to 60 percent of the people in this group must eventually find employment as middle-level manpower in the technical, semi-professional and skilled occupations for which a one or two year college level program of semi-professional, technical or vocational education would provide the ideal preparation (26).

Two changes of note in the labor force in the 70's will be the age and education of the worker. The growth in the labor force is really a story of young men and women between 16-34 who will account for about two-thirds of the net increase. Thus, in the 1970's the number of young workers will have more education on the average than new entrants to the labor force in previous years (17).

Career Development

Super (22) believes that a career is the sequence of occupations, jobs, and positions occupied during the course of a person's working life. Careers actually extend beyond either end of the working life to include pre-vocational and post-vocational positions such as those of students preparing for work and of retired men playing substitute-work roles. A study of the exploratory years was done as a part of the career pattern study (Super, et al., 1957).

Career prediction seeks to take into account the influence of occupations, jobs, and positions which a given person is likely to occupy. The career model of developmental vocational counseling was one in which the individual was conceived as moving along one of a number of possible

pathways through the educational system and on into and through the work system. His starting point was his father's socioeconomic status, he climbed up the educational ladder at a speed fixed both by his psychological and social characteristics and by the resources provided by his family environment. He entered the world of work at some point which was determined in part by the rung on the educational ladder which he had reached at the time of leaving education for work. He progressed through an entry job into other jobs, which may or may not have been related to each other in constituting a career field in the sense of continuous, progressive achievement. Career prediction should be the essence of vocational counseling when more is involved than a decision about a specific job, but counselors have little in the way of data and instruments to help make such predictions (22).

Vocational education has a dual purpose: to provide the people it serves with an education and to train skilled workers for the labor force. The two purposes both relate directly to the individual's career development. The major effort in vocational education is conducted within public education systems. Its place within the system has never been clearly defined. Administrative regulations tie it to education's standards and practices, but practical considerations force it to look to industry for its curriculum and teachers. Even though professional and vocational education may share many similar objectives and methods, one is accepted as education and the other is not (27).

At the dedication ceremonies for the new vocational-technical department of a Maryland high school on April 27, 1967, President Lyndon B. Johnson (1) said:

> As we dedicate this great new center for vocational education, we also celebrate another step toward another national goal;

> and that goal is that every young American shall obtain as much education as he wants . . . as much training as he can absorb and can use . . . as we approach the next century, every citizen who hopes to play a productive role in American society must have occupational training of a sort . . . whether he wants to be a brain surgeon or an airplane repairman, or an x-ray technician or an astronaut . . . there is nothing more important to freedom in the world, to the dignity of man, than education.

Only through the development of new programs can we expand the offerings needed to meet the challenge of change. There can only be change when enough research has been done to assure us that a change is needed. Because of this the Federal Government has begun to expand its research findings. This has led to an expanded effort in providing new and exemplary programs (27).

The year 1968 saw a new role for private industry as a partner with the Government in the struggle to reach full employment. Through the JOBS program (Job Opportunities in the Business Sector), the National Alliance for Businessmen were aiming to provide 500,000 jobs for the hardcore poor by 1971 (25).

Because of the passage of Public Law 90-576, the number of persons with special needs, served by vocational education, in 1968 increased almost nine times over the 1965 level. In 1968, 220,000 of these persons, or three percent of all those served by vocational education, were enrolled in special programs or were being served in regular programs. Those with special needs included individuals who were handicapped as well as those who were disadvantaged; those whose development was retarded by their physical, emotional, or mental handicaps; and those whose environment has raised barriers to their economic and social progress (27).

Vocational programs reach persons in schools for the deaf and

blind, homes for unwed mothers, camps for migrant workers, public schools of the inner city, isolated settlements of Indians, homes of the rural poor, reformatories, prisons and state mental hospitals (27).

Perhaps it is of note that during the Johnson administration more vocational education legislation was passed and more money appropriated than during any previous administration to that date. This has set the pattern which vocational educators are delighted to see continuing under the Nixon administration. According to recently appointed Commissioner of Education, Sidney P. Marland, Jr.:

> First, we are planning major improvements in the vocational education program of the Office of Education. This program, as you know, involves the expenditure of nearly $500,000,000 annually and our intention is to make the administrative and programmatic changes that will enable the states to use this money to make their vocational educational efforts more relevant to the needs of the young people who will spend their lives in careers in business and industry. We intend to give the states new leadership and technical support to enable them to move present programs away from disproportionate enrollments in low-demand occupations to those where national shortages exist and where future national needs will be high (16).

In the 1970's trade and industrial and technical education will be faced with two major problems. One will be to increase its offerings to meet the needs of the secondary students who are to prepare for new and emerging careers designed for our technological society. The second is to offer many new programs for post secondary youth and adults who need training or retraining to develop the skills and knowledge needed to make them employable in the fields of their choosing.

Flexibility becomes a factor in the schools' response to the world of work within higher education; subjects might be taught for one week or ten weeks, one year or three years, day or evening, in courses not necessarily taught by a person with three published articles to students who may or may not be working for degree credit. Education must become

more modular (less dependent on specific academic time and status) and man must go through life with the educational umbilical cord uncut (28).

Vocational and technical education must always keep its attention on the longer term regional and national employment situation, help graduates find entry into the world of work and be prepared to re-educate them into the work world as technology makes it necessary (11).

The American public school system with the assistance of the Federal Government has for years given special support to school programs designed to prepare youth for specific areas of employment. Following the advent of Sputnik, strong emphasis was given to increasing the number and quality of highly trained scientists and engineers. The goal was to help the nation's "academically talented youth" climb to the highest rungs of the educational ladder. Graduate education and research were the objects of attention and affection. Since 1963, however, the scene has shifted to other objects. Society has discovered pockets of poverty and islands of neglect both among its people and its educational system. Attention now focuses upon the great majority of its citizens who climb only to the lower rungs of the ladder, who occupy the great majority of positions in the occupational world, and who finally form the bedrock of American society.

It is important, therefore, that educational planners and school administrators inform themselves upon such questions as:

(a) What happens to the young men and women who try to find work instead of continuing school beyond graduation?

(b) Are there important differences between the job-finding experiences of graduates of vocational education programs and the experiences of students who graduate without such

preparation?

(c) Does the school program, teaching staff, and counseling service assist youth who go to work as effectively as it assists youth who go to college (5)?

Such questions as these have given rise to many studies designed to answer them.

Placement and Follow-Up Studies Related to Research Questions

Placement and follow-up studies reviewed provided clarity and gave impetus to further development and refinement of the four research questions to which this study was directed. The following section reports specifically the findings of these studies in relation to these questions:

1. What is the employment status of graduates soon after graduation and again a number of years later?

   Eninger (5) conducted a national study of T and I graduates over a nine year period. His findings in employment status follows; (1) comprehensive school vocational graduates took slightly longer to get jobs than vocational school graduates while academic course graduates required, on the average, one month longer to find their first full-time jobs than vocational course graduates and, (2) there was no significant difference in mean number of jobs held among the groups.

   Eninger's New York state study (4) revealed that; (1) the mean time required to get the first full-time

job was slightly higher for vocational graduates than for comprehensive school graduates and, (2) there was no significant difference among the groups in regard to full-time jobs held.

Little's (15) state study conducted in Wisconsin revealed; (1) significant differences between the two groups of respondents prevented generalization of many of the findings; however, employment and income of graduates was generally good and, for the most part, graduates found that training and work were related and that their educational experiences were useful in getting, holding, or changing jobs and, (2) usually one-third of the graduates were in part-time jobs.

Stevenson's state study in Oklahoma (21) reported; (1) with the exception of graduates from the Health Division, the percent of graduates who were available for placement (those who entered the labor market) was less than half of the total number of graduates; (2) the percent of the graduates who were available for placement increased sharply within the one-year period between the first follow-up and the second follow-up; (3) the percent of graduates who were classified as "employed related" was greater than the percent of dropouts who had obtained a marketable skill and were classified as "employed related."; (4) the percentage of graduates classified as "unemployed" was below the percentages normally associated with this age group; (5) of those employed, 70 percent were classi-

fied as "employed related"; (6) more than 50 percent of the graduates did not attempt to use their training to find permanent employment; (7) completion of a vocational program increased a person's chance for employment and, (8) vocational training decreases the chances of being unemployed.

Investigators conducting Georgia's state study (10) indicated finding that about one-third of the 1966 graduates entered full-time employment directly from high school.

Twyman (24) and co-workers, conducting a study in Oklahoma City among dropouts, discovered (1) there was no significant difference among groups in job success; (2) there was a significant difference among groups in the number entering the labor market, with the vocational group having more entering than did other groups; and (3) findings suggested that vocational training prepared participants to find employment more readily and to hold employment.

Shaw's (19) study indicated (1) full-time jobs out-number part-time jobs 30 to 1; (2) a much higher proportion of vocational high school graduates obtained jobs than did non-vocational; and (3) the unemployment rate for vocational graduates was lower than that of the academic graduates.

Researchers in Baltimore County, Maryland, (7) reported that approximately 38 percent of all the graduates were employed.

2. What is the difference in hourly rate of pay of graduates soon after graduation and again a number of years later?

Eninger (5) in a national study found (1) vocational school graduates had slightly higher starting hourly rates than did the comprehensive school vocational graduates and (2) none of the initial earnings mean differences attained significance at the five percent or better level of confidence.

Eninger's New York state (4) study revealed the following: (1) vocational school graduates began their first job with slightly higher hourly earnings than the other graduates and (2) there was no significant difference in hourly rate of pay on either survey.

Little's (15) statewide study in Wisconsin revealed that their incomes, both starting and at the time of the second survey, on the average, were somewhat below the state average income in manufacturing industries. However, the average increase was 33 percent over the period studied.

The Georgia Educational Improvement Council's (10) state study revealed that four out of every five graduates received earnings higher than the Georgia and National per capita income index for 1966.

Investigators in Baltimore County, Maryland (7) discovered that almost two-thirds of the graduates were earning $50 to $100 per week.

3. What is the military status of graduates soon after graduation and again a number of years later?

Eninger (5) in a national study did not include military status as such but referred to it from time to time as it related to other aspects of career development.

Eninger's New York (4) study revealed: (1) the most frequent reported source of post-high school education was military service schools; (2) there was no significant difference in military service among groups on the first and second survey.

Little's (15) state study in Wisconsin revealed that while persons in the armed services are not normally considered in the labor force these service experiences were significant factors in the working histories of the males. Of the males, 11.7 percent had or were having experiences in the armed services, which makes the discussion of employment experiences of male groups more complex because it affects the reported rate of pay, the relationship of job to training, and the extent of the labor market exposure.

The Georgia Educational Improvement Council's (1) study found the following: (1) The high school graduate, after training, has the required abilities, but lacks experience and some employers prefer not to hire males who have not completed their military obligations. (2) More than 84 percent of the graduates who entered the armed services plan to take advantage of their educational benefits immediately following their discharge.

Shaw's study (19) revealed: (1) of the male graduates,

3.6 percent volunteered for service; (2) 20 percent entered the services; and (3) the ratio of vocational high school graduates to academic graduates entering the armed services was about five to one.

Researchers in Baltimore County, Maryland (7), reported that military obligations often prevented continuation of education.

4. What is the educational status of graduates soon after graduation and again a number of years later?

Eninger's national study (5) found: (1) the six most frequently mentioned types of formal post-high school educations were military specialist schools, four-year college, correspondence courses, two-year colleges, public trade-technical schools, and private trade schools; (2) about 41 percent of the vocational graduates claimed some type of formal post-high school education, while a much greater percentage of academic graduates reported college-level education than did vocational graduates; (3) there were no substantial differences between the graduates of vocational and comprehensive schools in terms of percentages who reported attending the different types of post-high school education; (4) the mean class hours of college education accumulated by the graduates indicated that college credits were being carried up to eleven years after graduation; (5) the difference in mean-accumulated class hours of college education among the groups was not significant; and (6) when education of the whole person was defined in

terms of conversational interests, leisure activities, and affiliation with community organizations, there was no evidence that suggests vocational graduates have been less wholly educated than academic graduates.

Eninger's New York study (4) revealed (1) about 16 percent of the vocational graduates reported some kind of college education although for the majority, high school was the last formal education; (2) there was no significant difference among groups in accumulation of class hours of college education; and (3) there was no evidence that suggests vocational graduates have been less wholly educated than academic graduates.

Gaddis (9) conducting a state-wide study in Utah reports (1) post-secondary students tend to go to work in the occupational areas in which they were trained and (2) a disproportionate number of students (both vocational and non-vocational) are entering baccalaureate programs their first year after leaving high school.

Stevenson's (21) state study in Oklahoma concluded (1) the percent of graduates who were continuing school decreased sharply between follow-ups and (2) many vocational or technical graduates enter advanced schools but dropped out within one year.

A state-wide study in Georgia (10) found that (1) more males (58.20 percent) than females (52.04 percent) continue their education beyond high school; (2) the graduates preferred four-year public institutions; (3) more than

three out of five attended a senior college; (4) one of every six attended an area vocational-technical school; (5) the educational levels of attainment are increasing over past generations; (6) a re-evaluation of subject matter is needed as many students rated subject areas as being of little use; and (7) more must be done to provide post-secondary educational opportunities.

A study conducted in Oklahoma City under the direction of Twyman (24) found that there was no significant difference in academic achievement between groups pursuing academic study and those provided vocational training. Students in both groups were dropouts given special training and incentives.

Shaw's (19) study found (1) three-fourths of the graduates indicated they were attending school full-time; (2) part-time attendance was 11.5 percent; (3) full-time students were more likely to enroll for a bachelor's degree than part-time students; (4) the vocational graduate was much more likely to go to trade school, technical institute, or junior college than the academic graduate; and (5) of academic graduates, 72.8 percent went to a four-year college.

An investigation by researchers in Baltimore County, Maryland, (7) reported (1) of the total graduates 53 percent were attending school full-time; (2) of the graduates who indicated they were attending school, over 56 percent attended four-year colleges and 24.9 percent attended

community or junior colleges; and (3) approximately one out of three graduates who were not attending school full-time expressed an interest in continuing their education on a full-time basis.

Summary

There is an increase in unemployment among youth, and there are fewer vocations they can enter without skill and technical training. During the dedade of the '60's there was an increase of about 6 million young workers seeking to enter the labor force. When the untrained and unskilled youth is able to find a job, typically he enters the labor market at a very low level. Job turnovers among people under 22 is far higher than among older workers and is more happenstance than planned. The less education and training a worker has, the less chance he has for a steady job because unemployment falls heaviest on the worker who has the least education.

Most women work sometime during their lives, whether they marry or not. The trend toward increased employment of women is evident. Although the fight for equal pay for women can be recognized as having made possible great improvements, the parallel battle for equal opportunity has hardly begun.

The aspirations of young people from all income groups are changing rapidly. Between 1960 and 1966, the aspirations of the poor to attain a college degree began to catch up with those of the rich. There were 230,000 more freshmen who enrolled in college full-time in the fall of 1968 than would have been expected if the trend of 1956-65 had been followed. During 1968-69, the number of young people aided by Office

of Education Programs alone was in excess of 1.5 million students.

Two of the big changes in the labor force in the 70's will be the age and education of the worker. Although the number of all workers and job seekers will increase about 25 percent from 1968 to 1980, the growth in the labor force is really a story of young men and women between 16-34 who will account for about two-thirds of the net increase. Thus, in the 1970's the number of young workers will have more education on the average than new entrants to the labor force in previous years.

Rapid expansion in research and development, unusually rapid increases in the application of technological improvements, increased size and complexity of business organization, widespread growth of record-keeping among all types of enterprises, have caused our youth to seek employment in occupations for which one to three years of education beyond high school are necessary and proper.

As increased attention is being focused upon the career development of individuals, efforts are more specifically being directed toward statistical analyses of vocational aspects of early career patterns with promises of important methodological discoveries and practical outcomes. Underlying much of this effort is the realization that an estimated 5.2 million jobs will open up in rapidly developing areas of technical science and engineering during this decade, almost all requiring services and performances of people with highly developed skills and extensive related knowledge.

The literature reviewed appears to indicate a growing recognition that more vocational education in high school is needed to help insure that graduates will have a better opportunity to secure a more favorable position in the world of work and to be better able to adjust to the

society in which they live.

The follow-up studies reviewed indicated the present status of youth entering the labor market. In relation to the research questions posed in this study the investigator cites the following findings: Several national, state and local studies indicate full-time jobs out-numbered part-time jobs; a higher proportion of vocational high school graduates tended to begin the first job with slightly higher hourly rate of pay; often there was no significant difference between vocational and academic majors in percentage of graduates in military service either immediately after graduation or sometime later; there was no significant difference between vocational and non-vocational students in eventual accumulation of class hours of college and/or other types of post-high school education. However, of those enrolling in baccalaureate programs, a significant proportion of vocational students tended to drop out within one year.

CHAPTER III

DESIGN AND METHODOLOGY

The intended function of this chapter was to (1) review the purpose of the study, (2) describe the research design of the study, (3) describe the method by which the population was determined, (4) state the method by which the data were collected and analyzed and (5) list the hypotheses to be tested.

Purpose of the Study

The purpose of this research was to complete a longitudinal, comparative study of groups in an attempt to determine any possible association which might exist between varying degrees of vocational trade and industrial and/or technical education completed, and the educational and career patterns subsequently followed by high school graduates in Oklahoma.

Overall Design of the Study

The investigator became interested in this study when he was a graduate assistant in the Vocational Research Coordinating Unit at Oklahoma State University in 1967. A state-wide survey was made of all high school seniors who would graduate in the spring of 1967. The state-wide study had the full support of the State Department of Education, the State Department of Vocational Education, Secondary Superintendents,

Secondary Principals, and Guidance Counselors.

A descriptive research design was used for the study because it was a longitudinal study and did not have an independent or control group in the study.

Population of the Study

Out of approximately 34,000 questionnaires returned by seniors who participated in the state-wide survey, there were 29,798 usable returns. From the 34 general questions in the survey the investigator selected number 19, which dealt with how much vocational trade and industrial and/or technical education the student had taken while in high school.

Three groups were selected from the population according to the amount of vocational trade and industrial and/or technical education they had taken while in high school. The groups were defined as follows:

Group A: Those who had four semesters or more of vocational trade and industrial and/or technical education while in high school were designated vocational.

Group B: Those who had one to three semesters of vocational trade and industrial and/or technical education while in high school were designated semi-vocational.

Group C: Those who had no vocational training of any kind while in high school were designated non-vocational.

Each subject was given a number and categorized in one of the three groups remaining. The computer was used to select, at random, 200 students from each group to make up the sample. Thereafter, in the study, when the term sample was used it was used in reference to the randomly selected 600 graduates of Oklahoma public high schools in the year 1967.

Method of Data Collection

In October of 1967 questionnaires were mailed to each of these persons with a cover letter (samples of each are in the Appendix A) including self-addressed envelopes. Follow-up letters were sent after three weeks, and again after six weeks, to those who did not respond the first time. The total returns on the first questionnaire resulted in a sample totaling 320.

In January, 1971, a revised questionnaire was sent to obtain comparable information from the previous respondents to determine what had happened to them four years after graduation.

Follow-up letters were sent in three weeks and again in six weeks, to those not responding. The total sample used for comparison on the first and second questionnaires totaled 170, the number who responded to both the first and second questionnaires.

Data Analysis

A chi-square (x^2) statistical analysis was deemed most appropriate to use in this research design. Chi-square can be used with data which are nominal in nature and is useful when parametric assumptions cannot be made. Chi-square was the technique used to test the difference among groups in three categories and was applied to data gathered four months after graduation and again to data secured from the same subjects four years after graduation.

In making the chi-square tests it was recognized that although chi-square can be used to analyze data which is classified into non-ordered categories, it can also be used with numerical data and in as many categories as needed to test the hypotheses.

Hypotheses to be Tested

HO_1 : There is no significant difference among the groups in terms of employment status (other than military service) four months following graduation.

HO_2 : There is no significant difference among the groups in terms of employment status (other than military service) four years following graduation.

HO_3 : There is no significant difference among the groups in terms of being employed or not employed (other than military service) four months following graduation.

HO_4 : There is no significant difference among the groups in terms of having been employed or not having been employed (other than military service) in the four years following graduation.

HO_5 : There is no significant difference among the groups in terms of taking the first job offered and not taking the first job offered four months following graduation.

HO_6 : There is no significant difference among the groups in terms of hourly wage of employed subjects four months following graduation.

HO_7 : There is no significant difference among the groups in terms of hourly wage of employed subjects four years following graduation.

HO_8 : There is no significant difference among the groups in terms of entering the military service and not entering the military service, four months following graduation.

HO_9 : There is no significant difference among the groups in relation to military status four years following graduation.

HO_{10}: There is no significant difference among the groups in terms of having served in the military service and not having served in

the military service, four years following graduation.

HO_{11}: There is no significant difference among the groups in terms of having enrolled or not having enrolled for advance schooling four months following graduation.

HO_{12}: There is no significant difference among the groups in terms of having had advanced schooling or not having had advanced schooling, during the four years following graduation.

HO_{13}: There is no significant difference among the groups in the extent of advanced training completed four years following graduation.

HO_{14}: There is no significant difference among the groups in the number of college credit hours completed by those subjects who enrolled in college, as determined four years following graduation.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

A primary concern of the study was identification of selected aspects of early career patterns of selected 1967 Oklahoma public high school graduates.

Subjects were surveyed twice in an effort to determine possible association between varying degrees of trade and industrial and/or technical education completed, to career patterns which might be identified as developing over a subsequent four-year period.

The first survey was conducted four months following graduation and was used in the testing of six null hypotheses. The second survey was conducted four years following graduation and was used to test the ramining eight null hypotheses.

The study was designed to determine if significant differences do exist among these three groups. It is hoped that from these data any existing association between training and early careers can be firmly established.

Analyses presented were based on usable responses secured from each of the two questionnaires submitted. It should be noted that data presented in each table indicate varying numbers of responses in each cell; therefore, a percent for each cell was also given in order to make each group response equal in value for each cell in each table.

All statistical results were reported in terms of significance

levels or exact probabilities. This method of reporting allows the reader to set his own significance level for rejection of null hypotheses tested. The .05 level of significance was selected as the level which must be attained before the investigator would reject a null hypothesis. Therefore, conclusions made in this study were based on the .05 significance level.

Results of Statistical Analysis of Data Pertaining to Hypotheses

Results of statistical analysis are presented in this chapter. Each hypothesis is repeated and the result of the chi-square analysis follows it.

Responses, as tabulated, were listed under the column "Response". There are three columns listed: Group A, Group B, and Group C. They are defined as follows: (1) Group A, subjects who have been designated as vocationally trained because they have received four or more semesters of vocational trade and industrial and/or technical education while in high school; (2) Group B, subjects who have been designated as having some vocational training because they had from one to three semesters of vocational trade and industrial and/or technical education while in high school and, (3) Group C, subjects who have been designated as non-vocational because they had no vocational training of any kind while in high school.

Each table reveals the sum of chi-square (x^2), stating whether P is significant or not significant at the .05 level and gives the level at which P is significant. This information will be found at the end of each table including the notation as to acceptance or rejection of the

null hypothes.

Data shown in Table I compare the employment status of the three groups to determine if there is a difference among the groups in the number employed, full-time, part-time, or not employed. Chi-square treatment revealed that there was a significant difference at the .01 level among groups four months following graduation. There was a difference between those having vocational training and those not having vocational training in the category of full-time employment. Recorded differences show that Group A had 22.2 percent; Group B 28.6 percent; and Group C, only 8.2 percent employed full time. Another area of difference was in the number not employed, where it was recorded that Group A had 46.6 percent; Group B, 22.4 percent; while Group C had 51 percent. However, four years later there was no significant difference discovered among these same groups when comparing employment figures. However, a variation was to be observed in full-time employment: Group A, having 51.3 percent; Group B, having 66.6 percent; Group C, listing only 35.9 percent. Interestingly, Group C had almost twice as many employed part-time as did either Group A or Group B. The differences were not sufficient to make a significant difference among the groups.

Data presented in Table I were used to determine if null hypotheses one and two should be accepted or rejected. Null hypothesis one was rejected, and it was concluded in this study that there was a significant difference among the groups. Null hypothesis two was accepted, and it was therefore, concluded that in this study there was not a significant difference among the groups.

Data in Table II related to employment, also. However, it was concerned with only two aspects -- that of employed and not-employed (other

TABLE I

EMPLOYMENT STATUS OTHER THAN MILITARY SERVICE FOUR MONTHS FOLLOWING GRADUATION AND AGAIN FOUR YEARS LATER

	Group A Vocational				Group B Some-Vocational				Group C Non-Vocational				Total			
	4 Months		4 Years		4 Months		4 Years		4 Months		4 Years		4 Months		4 Years	
Response:	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Yes, Full Time	10	22.2	20	51.3	14	28.6	30	66.6	4	8.2	14	35.9	28	19.6	64	52.0
Yes, Part Time	14	31.1	9	23.0	24	49.0	9	20.0	20	40.8	16	41.0	58	40.8	34	28.0
No, Not Employed	21	46.6	10	25.6	11	22.4	6	13.3	25	51.0	9	23.0	57	39.6	25	20.0
Total	45		39		49		45		49		39		143		123	
Military Service	11		17		11		15		5		15		27		47	
Grand Total	56		56		60		60		54		54		170		170	

Four months following graduation $x^2 = 13.206$ $P < .05$ $P < .01$ (HO_1 REJECTED)

Four years following graduation $x^2 = 7.260$ $P > .05$ $P < .10$ (HO_2 ACCEPTED)

TABLE II

EMPLOYED OR NOT EMPLOYED OTHER THAN MILITARY SERVICE
FOUR MONTHS FOLLOWING GRADUATION
AND AGAIN FOUR YEARS LATER

	Group A Vocational				Group B Some-Vocational				Group C Non-Vocational				Total			
	4 Months		4 Years		4 Months		4 Years		4 Months		4 Years		4 Months		4 Years	
Response:	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Yes (Employed)	24	53.3	29	74.4	38	77.5	39	86.6	24	49.0	30	77.0	86	60.0	98	80.0
No (Not Employed)	21	46.6	10	25.6	11	22.5	6	13.4	25	51.0	9	23.0	57	40.0	25	20.0
TOTAL	45		39		49		45		49		39		143		123	
Military Service	11		17		11		15		5		15		27		47	
GRAND TOTAL	56		56		60		60		54		54		170		170	

Four months following graduation: $x^2 = 9.668$ $P < .05$ $P < .01$ (HO_3 REJECTED)

For years following graduation: $x^2 = 2.178$ $P > .05$ $P < .30$ (HO_4 ACCEPTED)

than military service). There was a significant difference among the groups four months following graduation. When the same groups were again surveyed four years later, these differences tended to level out.

Data presented in Table II were used as a basis for acceptance or rejection of null hypotheses three and four. Null hypothesis three was rejected while null hypothesis four was accepted. Results cited in both Tables I and II confirm that the three groups responded in like manner with regard to employment; therefore, the null hypotheses concerning employment behavior at the four-month levels were rejected. In contrast, null hypotheses concerning employment behavior at the four-year levels were accepted. When categories of employment status were combined, no changes in results were yielded.

Data in Table III present a comparison among the three groups as to their acceptance of the first job offered four months following graduation.

TABLE III

ACCEPTANCE OF FIRST JOB OFFERED FOUR MONTHS FOLLOWING GRADUATION

	Group A Vocational		Group B Some-Voc.		Group C Non-Voc.		Total	
Response:	No.	%	No.	%	No.	%	No.	%
Yes	18	52.9	31	70.5	24	77.4	73	67.0
No	16	47.1	13	29.5	7	22.6	36	33.0
Total	34		44		31		109	
Not Employed	22		16		23		61	
Grand Total	56		60		54		170	

Four months following graduation: $x^2 = 4.804$ $P > .05$ $P < .10$
(HO_5 ACCEPTED)

A comparison reveals that there were differences among the groups in each cell; however, these differences were not large enough to make the chi-square significant at the .05 level. Therefore, null hypothesis five was accepted, and it was concluded that in this study there was not a significant difference among groups in a comparison of first job accepted.

Data shown in Table IV presents a comparison among groups as to the hourly rate of pay an employee was paid four months following graduation and again four years later to determine if there was a significant difference among groups.

Differences were found in each category of the pay scale for each group in the first and second survey, but these differences were not great enough to make the total chi-square significant. Therefore, both null hypotheses six and seven were accepted and it was concluded that in this study there was not a significant differences among the groups.

Findings shown in Table V compare the three groups as to their military service status over a four-year period. The data revealed that there was not a significant difference among the groups four months after graduation, even though there were twice as many entering the military service in both Group A and B than in Group C. The number entering from all groups was quite small; therefore, it was concluded that in this study there was not a significant difference among the groups and null hypothesis eight was accepted.

The military service status of the three groups was analyzed four years later and divided into three categories -- those who were still in the military service, those who had completed their military service, and those who had not served. This information when analyzed revealed that

TABLE IV

EMPLOYEES HOURLY RATE OF PAY FOUR MONTHS FOLLOWING GRADUATION AND AGAIN FOUR YEARS LATER

Response:	Group A Vocational No.	%	Group B Some-Vocational No.	%	Group C Non-Vocational No.	%	Total No.	%
				FOUR MONTHS				
Below $1.25	7	20.6	7	16.3	10	32.3	24	22.2
$1.25-$1.74	13	38.2	22	51.1	12	38.7	47	43.5
$1.75-$2.24	10	29.4	8	18.6	6	19.3	24	22.2
$2.50 or More	4	11.8	6	14.0	3	9.7	13	12.1
TOTAL	34		43		31		108	
Not Employed	22		17		23		62	
GRAND TOTAL	56		60		54		170	
				FOUR YEARS				
Below $1.74	10	20.8	14	28.0	16	38.0	40	28.5
$1.75-$2.49	19	39.6	12	24.0	9	21.4	40	28.5
$2.50-$3.99	13	27.1	19	38.0	12	28.5	44	31.4
$4.00 and Above	6	12.5	5	10.0	5	12.0	16	11.4
TOTAL	48		50		42		140	
Not Employed	8		10		12		30	
GRAND TOTAL	56		60		54		170	

Four months following graduation: $x^2 = 4.730$ $P > .05$ $P < .55$ (HO_6 ACCEPTED)

Four years following graduation: $x^2 = 4.797$ $P > .05$ $P < .60$ (HO_7 ACCEPTED)

TABLE V

MILITARY SERVICE STATUS FOUR MONTHS FOLLOWING GRADUATION AND AGAIN FOUR YEARS LATER

Response:	Group A Vocational		Group B Some-Vocational		Group C Non-Vocational		Total	
	No.	%	No.	%	No.	%	No.	%
				FOUR MONTHS				
Yes	11	19.7	11	18.3	5	9.3	27	16.0
No	45	80.3	49	81.7	49	90.7	143	84.0
Total	56		60		54		170	
				FOUR YEARS				
Yes	17	30.0	15	25.0	15	28.0	47	28.0
Have Completed	8	14.0	10	17.0	2	4.0	20	12.0
No, Have Not Served	31	56.0	35	58.0	37	68.0	103	60.0
Total	56		60		54		170	

Four months following graduation: $x^2 = 2.666$ $P > .05$ $P < .25$ (HO_8 ACCEPTED)

Four years following graduation: $x^2 = 4.331$ $P > .05$ $P < .30$ (HO_9 ACCEPTED)

there was not a significant difference among the groups four years following graduation. Therefore, null hypothesis nine was accepted.

Further investigation, as revealed in Table VI, showed that combining the categories into those who have served and those who have not served in the four years following graduation did not alter the results. Therefore null hypothesis ten was accepted, and it was concluded that there was not a significant difference among the groups.

Data presented in Table VII provide for a comparison of the three groups in relation to the number taking advanced training or schooling over a four-year period. There was a significant difference among the groups as to the number taking advanced training or schooling four months following graduation. Group A had 59 percent enrolled four months after graduation; Group B had 63.3 percent and Group C had 80 percent. This difference was significant at the .05 level; therefore, null hypothesis eleven was rejected, and it was concluded in this study that there was a significant difference among groups four months following graduation.

The same subjects in the same groups four years later were compared again and were found not to be significantly different. Seventy-one percent of Group A who had advanced training or schooling sometime during the four years following graduation as compared to 80 percent of Group B and 85 percent of Group C. This was not a large enough difference to be significant at the .05 level; therefore, null hypothesis twelve was accepted, and it was concluded in this study that there was not a significant difference among groups.

Data as shown in Table VIII would tend to substantiate that in considering null hypothesis thirteen there was determined no significant

TABLE VI

MILITARY STATUS OF THOSE WHO HAVE SERVED OR HAVE NOT SERVED FOUR YEARS FOLLOWING GRADUATION

Response:	Group A Vocational		Group B Some-Vocational		Group C Non-Vocational		Total	
	No.	%	No.	%	No.	%	No.	%
Have Served	25	44.6	25	41.6	17	31.5	67	39.4
Have Not Served	31	55.4	35	58.4	37	68.5	103	60.6
Total	56		60		54		170	

Four Years Following Graduation: $x^2 = 2.221$ $P > .05$ $P < .30$ (HO_{10} ACCEPTED)

TABLE VII

ADVANCED TRAINING OR SCHOOLING STATUS FOUR MONTHS FOLLOWING GRADUATION AND AGAIN FOUR YEARS LATER

	Group A Vocational				Group B Some-Vocational				Group C Non-Vocational				Total			
	4 Months		4 Years		4 Months		4 Years		4 Months		4 Years		4 Months		4 Years	
Response:	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Yes	33	59.0	40	71.4	38	63.3	48	80.0	43	80.0	46	85.0	114	67.0	134	79.0
No	23	41.0	16	28.6	72	36.7	12	20.0	11	20.0	8	15.0	46	33.0	36	21.0
Total	56		56		60		60		54		54		170		170	

Four months following graduation: $x^2 = 5.950$ $P < .05$ $P < .05$ (HO_{11} REJECTED)

Four years following graduation: $x^2 = 3.193$ $P > .05$ $P < .20$ (HO_{12} ACCEPTED)

difference among groups in terms of the extent of advanced training completed by subjects as determined four years following graduation. However, there appear to be more vocationally trained students attending trade school than non-vocationally trained students. There was a much higher percent, 29.6, of the non-vocational group who had completed above 121 hours of college work. This compares with 14.3 percent of the vocational group. These disparities were not sufficient to make a significant difference among the groups; therefore, null hypothesis thirteen is accepted.

TABLE VIII

EXTENT OF ADVANCED TRAINING COMPLETED
FOUR YEARS FOLLOWING GRADUATION

	Group A Vocational		Group B Some-Voc.		Group C Non-Voc.		Total	
Response:	No.	%	No.	%	No.	%	No.	%
Up to 60	6	10.7	7	11.7	11	20.4	24	14.1
61-100	6	10.7	10	16.6	9	16.7	25	14.6
101-120	10	17.9	9	15.0	9	16.7	28	16.5
Above 121	8	14.3	14	23.3	16	29.6	38	22.6
Trade School Clock Hours Only	10	17.9	8	13.3	1	1.8	19	11.1
Not Attended	16	28.5	12	20.0	8	14.9	36	22.1
Total	56		60		54		170	

Four years following graduation: $x^2 = 15.182$ $P > .05$ $P < .15$
(HO_{13} ACCEPTED)

Data as shown in Table IX compare the number of credit hours earned four years following graduation, as determined only for those subjects who had enrolled in college.

Comparison of data reveal the pattern the three groups developed over a four year period as they secured college credit hours. Group A had the largest percent of respondents in the 101-120 credit hour division, comprising 33-1/3 percent. This group was also found quite high in the category of above 121 hours, which was determined as 26-2/3 percent. This reveals that 60 percent of Group A fell in the two upper divisions, while Group B had 57.5 percent, and Group C had 55.5 percent. If subjects comprising the 61-100 hour group were working for a degree, there was certainly an indication that most would reach their educational goal of either the associate degree or the bachelor's degree. It would seem noteworthy that Group B also had 35 percent of their group in the category of above 121 credit hours with Group C having 35.5 percent of their respondents in the highest category.

TABLE IX

NUMBER OF COLLEGE CREDIT HOURS EARNED
FOUR YEARS FOLLOWING GRADUATION

	Group A Vocational		Group B Some-Voc.		Group C Non-Voc.		Total	
Response:	No.	%	No.	%	No.	%	No.	%
Up to 60	6	20.0	7	17.5	11	24.4	24	20.9
61-100	6	20.0	10	25.0	9	20.0	25	21.7
101-120	10	33.3	9	22.5	9	20.0	28	24.4
Above 121	8	26.6	14	35.0	16	35.5	38	33.3
Total	30		40		45		115	

TABLE IX (CONTINUED)

Response:	Group A Vocational No.	%	Group B Some-Voc. No.	%	Group C Non-Voc. No.	%	Total No.	%
Trade School Clock Hours Only	10		8		1		19	
Not Attended	16		12		8		36	
Grand Total	56		60		54		170	

Four years following graduation: $x^2 = 3.752$ $P > .05$ $P < .70$
(HO_{14} ACCEPTED)

The three groups seem to resemble one another closely when relating to advanced training or further schooling, whether as regards the type of institution, number of credit hours received, or length of time in attendance. Therefore null hypotheses thirteen and fourteen were both accepted, and it is concluded that in this study there was not a significant difference among groups.

Presentation of Supplemental Data

The information presented in the following tables was not used to test any of the null hypotheses in the study. Data shown in these tables were presented and analyzed in order that the reader might gain some additional insight into the early career patterns of high school graduates over a four-year period.

TABLE X

EMPLOYMENT IN RELATION TO VOCATIONAL TRAINING
FOUR MONTHS FOLLOWING GRADUATION

Question: Did you find a job in relation to your vocational training?

	Group A N 103		Group B N 118		Group C N 99		Total N 320	
Response:	No.	%	No.	%	No.	%	No.	%
Yes, in the field in which I had vocational training	14	3.5	13	12.0	0	0.0	27	8.5
Yes, in a field related to my vocational training	18	17.5	28	24.0	0	0.0	46	14.5
Yes, in a field not related to my vocational training	17	16.5	20	17.0	7	7.0	44	14.0
Yes, though I had no vocational training	6	6.0	13	12.0	46	46.0	65	20.5
No, I did not find a job	48	46.5	44	37.0	46	46.0	138	43.0
TOTAL	103		118		99		320	

$x^2 = 123.675$ $P < .05$ $P < .001$

It may be noted that findings presented in Table X have a high value for chi-square because the question dealt with how vocational training helped the person find a job four months following graduation. Interestingly enough, seven percent of Group C, with no vocational training, said their vocational training helped them to get a job. Even more surprising, and somewhat difficult to reconcile, is the fact that some

said they had not had vocational training in high school, since they were selected from groups who had indicated on the state-wide questionnaire only four months earlier that they had vocational training in high school.

Data presented in Table XI have only two groups because the question it specifically applies to is regarding relation to high school vocational training. Group C had no vocational training; therefore, the group was eliminated. The two groups studied were quite similar in their use of vocational training for employment.

Table XII was prepared from information obtained from the first follow-up questionnaire four months following graduation. However, there were too many cells with expected frequencies too small, to test the hypotheses, but findings shown in Table XII do give some insight into the wide range of wage distribution.

TABLE XI

EMPLOYMENT IN RELATION TO HIGH SCHOOL TRAINING
FOUR YEARS FOLLOWING GRADUATION

Question: Are you employed in relation to your high school training?

	Group A N 45		Group B N 51		Total N 96	
Response:	No.	%	No.	%	No.	%
Yes, in a field in which I had vocational training	9	20.0	8	15.7	17	17.7
Yes, in a related field to my training	10	22.0	15	29.4	25	26.0
Yes, in a field not related to my training	16	35.5	18	35.3	34	35.4

TABLE XI (CONTINUED)

Response:	Group A N 45 No.	%	Group B N 51 No.	%	Total N 96 No.	%
No, not employed	10	22.0	10	19.6	20	21.0
TOTAL	45		51		96	

$X^2 = .800$ $P > .05$ $P < .85$

Data compiled in Table XIII reveal the hourly rate of pay for the same subjects, four years following graduation. Fidnings shown in this table give a wide range of pay scales, though it could not be properly treated because of the size of some of the cells; however, it does give some insight into the wage changes over a four-year period. It also ties in with Table XII to give an over-all picture of wages both in the early stages of the study and after four years.

A revelation of how much the three groups are alike in the type of service they choose, as well as in the number who do enter the service regardless of the group to which they belong, is readily observed in Table XIV.

TABLE XII

HOURLY RATE OF PAY FOUR MONTHS FOLLOWING GRADUATION

Question: What is your hourly rate of pay?

Response:	Group A N 103 No.	%	Group B N 118 No.	%	Group C N 99 No.	%	Total N 320 No.	%
Below $1.00	6	10	9	12	5	11.2	20	11
$1.00-$1.24	6	10	9	12	8	18.2	23	13
$1.25-$1.49	16	26.6	18	24	12	26.8	46	26
$1.50-$1.74	13	21.6	18	24	8	18.2	39	22
$1.75-$1.99	8	13.2	8	10.7	3	6.8	19	10
$2.00-$2.24	4	6.6	5	6.7	2	4.4	11	6.1
$2.25-$2.49	4	6.6	3	4	4	9.1	11	6.1
$2.50 or more	3	5	5	6.6	2	4.4	10	5.8
TOTAL	60		75		44		179	
No Job	43		43		55		141	
GRAND TOTAL	103		118		99		320	

$x^2 = 5.039$ $P > .05$ $P < .95$

TABLE XIII

HOURLY RATE OF PAY FOUR YEARS FOLLOWING GRADUATION

Question: What is your hourly rate of pay?

	Group A N 56		Group B N 60		Group C N 54		Total N 170	
Response:	No.	%	No.	%	No.	%	No.	%
Below $1.00	7	14.5	5	10.0	6	14.3	18	12.9
$1.00-$1.74	3	6.2	9	18.0	10	23.9	22	15.7
$1.75-$1.99	10	20.8	7	14.0	6	14.3	23	16.4
$2.00-$2.49	9	18.7	5	10.0	3	7.1	17	12.1
$2.50-$2.99	7	14.5	8	16.0	5	11.9	20	14.3
$3.00-$3.49	4	8.3	8	16.0	5	11.9	17	12.1
$3.50-$3.99	2	4.2	3.	6.0	2	4.7	7	5.0
$4.00-$4.49	2	4.2	2	4.0	2	4.7	6	4.2
$4.50 or more	4	8.3	3	6.0	3	7.1	10	7.2
TOTAL	48		50		42		140	
Not Employed	8		10		12		30	
GRAND TOTAL	56		60		54		170	

$\bar{x}^2 = 11.715$ $P > .05$ $P < .90$

TABLE XIV

TYPES OF MILITARY SERVICE FOUR YEARS FOLLOWING GRADUATION

Question: What type of Military Service have you been in?

	Group A N 56		Group B N 60		Group C N 54		Total N 170	
Response:	No.	%	No.	%	No.	%	No.	%
Regular Service	18	32.0	17	28.3	9	16.8	44	
Reserve, National Guard, & other	7	12.5	8	13.3	8	14.8	23	
No Military Service	31	55.4	35	58.0	37	68.4	103	
TOTAL	56		60		54		170	

$x^2 = 3.761$ $P > .05$ $P < .50$

TABLE XV

TYPES OF SCHOOL ATTENDED FOUR MONTHS FOLLOWING GRADUATION

Question: What type of school are you attending?

	Group A N 64		Group B N 62		Group C N 75		Total N 201	
Response:	No.	%	No.	%	No.	%	No.	%
College	49	76.6	46	74.2	64	85.3	159	79.0
Trade or Technical	9	14.0	10	16.1	2	2.7	21	10.5
Junior College and Other	6	9.4	6	9.7	9	12.0	21	10.5
TOTAL	64		62		75		201	

$x^2 = 7.886$ $P > .05$ $P < .10$

Other data shown in Table XV refer to the type of institution the subjects were enrolled in four months following graduation. The early pattern in advanced training set the stage as to how the subjects would develop their educational pursuits over the next four years.

Care should be exercised in seeking to interpret data as shown in Table XVI. Here an attempt was made to determine how much vocational training was offered in high school and how many subjects took the kind they desired. Of course, those who did not have vocational training offered in their high school were a different group to begin with.

TABLE XVI

VOCATIONAL TRAINING OFFERERINGS IN HIGH SCHOOL AS REPORTED FOUR MONTHS FOLLOWING GRADUATION

Question: Did the high school from which you graduated offer any vocational training?

	Group							
	Group A N 103		Group B N 118		Group C N 99		Total N 320	
Response:	No.	%	No.	%	No.	%	No.	%
Yes, I took the vocational training I wanted	52	50.5	38	32.2	5	5.0	95	29.7
Yes, but not in an area of interest to me	42	40.8	69	59.0	26	26.0	137	42.8
Yes, but I wasn't interested in it	6	5.4	6	5.0	44	44.0	56	17.5
No, no vocational training offered	3	2.9	5	4.2	24	24.0	32	10.0
TOTAL	103		118		99		320	
x^2 = 150.565			$P < .05$		$P < .001$			

As revealed in this table, there is strong indication that high school students do not always answer questionnaires accurately; .05 percent of Group C indicated that they had received vocational training when only four months previously they had indicated they had not received vocational training. Likewise, the vocationally oriented students, to a lesser degree, indicated their high school offered no vocational training.

There are other tables in Appendix B that relate to the other questions asked on the questionnaire. The areas covered are (1) hourly rate of pay, (2) desire for additional training, (3) time spent in the military service, (4) type of degree working toward, (5) time spent working, (6) status of employment, (7) size of city where subjects were employed, (8) in-state or out-of-state employment, (9) value of vocational training, (10) recommendations for vocational training, (11) high school which offered vocational training, (12) type of training received.

Findings as reported in these tables possibly will be of value to personnel at the State Department of Vocational Education, area vocational directors, secondary educators and others who may be interested in what happens to high school graduates.

CHAPTER V

SUMMARY OF FINDINGS, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Introduction

This study was primarily concerned with identifying certain selected aspects of early career patterns of selected 1967 Oklahoma public high school graduates. Specifically, this study was concerned with investigating possible associations between varying degrees of trade and industrial and/or technical education completed and subsequent career patterns over a four-year period.

The investigation involved collating findings about the nature and extent of both secondary and post-secondary students to determine how this might effect their future careers.

Students were divided into the following three groups for identification purposes:

Group A: Students who have completed four or more semesters of trade and industrial and/or technical education were designated as vocational.

Group B: Students who have completed one to three semesters of trade and industrial and/or technical education were designated as some-vocational.

Group C: Students who have had no vocational training of any kind were designated as non-vocational.

It was anticipated that the study would reveal a relationship between employment and the amount of wages one could earn with, and without vocational training, as well as the number in each group who went into the military service, since this also has an effect on early career patterns. It was further anticipated that this study will reveal the kind and extent of training most often received by students after leaving high school, whether it is post-secondary vocational training, junior college or higher education.

This study was begun in 1967, as one of many projects of this nature carried on by the Vocational Research Coordinating Unit of Oklahoma, which is continuing investigations in this area. Results of this study will be made available to that agency, as well as to the State Department of Vocational Education in the hope that it would serve as a complementary unit of findings useful in continuing analyses of the values derived from vocational and technical training. The study served as a longitudinal comparative study of the same gorups over a four-year period.

The first questionnaire was sent out in October of 1967 to secure the data necessary to make the first comparison among the three randomly selected groups.

The second questionnaire was sent out in January, 1971, in order that the same type of information might be collected from the same subjects four years following graduation from high school.

This information was analyzed and put in tabular form so that a chi-square statistical analysis might be made to determine if the 14 null hypotheses could be accepted or rejected before the research design could be completed.

The study proposed to determine if significant differences do exist among the three groups. All statistical results were reported in terms of significance levels or exact probabilities. The conclusions made in the study were based on the .05 significance level.

Data as presented in all tables were collated and analyzed using chi-square treatment. Tables were categorically divided into three groupings and correspondingly placed in the study. Data as presented in the first nine tables were used to accept or reject the null hypotheses and are found in Analysis of Data, while the next seven tables were used to present determination of early career patterns and are located in the section, Presentation of Supplemental Data. Both of the above sections are included in Chapter IV. The last 14 tables are located in Appendix B and reveal information about location of jobs, size of city where subjects were employed, length of time in the military service, all of which help develop a picture of the early career patterns of the subjects.

Summary of Findings

Findings Specifically Related to the Research Questions

Four questions emerged from the literature reviewed and a study of current and developing needs for additional knowledge about selected aspects of early career patterns. Findings of the study directly related to these questions were:

1. What was the employment status of graduates four months and four years after graduation?

Four months following graduation the findings were: The number employed full-time in both Group A and Group B were more than twice that

of Group C; Group B had more employed part-time than Group C or Group A; Group C had more not-employed than did Group A or Group B; there was a significant difference among the groups in employment status. When those employed part-time and full-time were combined to form one category listed as employed, the results were the same. There was a significant difference at the four month level in both surveys. There was not a significant difference at the four year level in either survey.

Group C members were more likely to accept the first job offered than were Group A or Group B. However, there was not a significant difference among the groups.

Four years following graduation, there were no significant differences among the groups in any of the categories of employment.

2. What was the difference in hourly wages of graduates four months and four years following graduation?

Four months after graduation the results were: Group A tended to start at a higher rate than did Group B or Group C. Group C started with a lower wage than either of the other two groups. However, this difference was not significant at the .05 level. Four years following graduation there was no significant difference among the groups.

3. What was the military status of graduates four months and four years following graduation?

Four months following graduation the responses were: 'Yes, In Service,' Group A and Group B had twice as large a percentage as Group C. However, it was not significant at the .05 percent level. Four years later the categories used were, 'Yes, Still in Service,' 'Have Completed Service,' and 'Have Not Served.' Even though four times as many in both Groups A and B had completed their service than in Group C, there

was not a significant difference among the groups.

Four years later the two categories, 'Yes, Still in Service' and ' 'Have Completed Service' were combined to form, 'Have Served.' The results revealed that there was no significant difference among the groups.

4. What is the educational status of graduates four months and four years after graduation?

Advanced training or schooling four months following graduation revealed there is a significant difference among the groups. The response to 'Yes, I am enrolled in advanced training', revealed there was a much larger number of Group C who enrolled in school. However, Groups A and B were both quite large. Four years later the results revealed there was no significant difference among the groups. The extent of advanced training completed over a four-year period following graduation revealed the following results: Group C tended to go to college more often than Group A or B; however, Group A and Group B attended trade or technical school much more often for their advanced training than did Group C. There was not a significant difference among the groups in the extent of advanced training completed.

In the number of credit hours earned in college over a four-year period following graduation (excluding trade or technical schools that gave only clock hours for credit), there was not a significant difference among the groups.

Findings Specifically Related to Hypotheses

The four research questions presented above and the corresponding hypotheses which relate to each are grouped in an attempt to provide for

clarity of expression.

1. What is the employment status of graduates four months and four years after graduation? (HO_1, HO_2, HO_3, HO_4, and HO_5.)
2. What is the difference in hourly wage rates of graduates four months and four years? (HO_6 and HO_7.)
3. What is the military status of graduates four months and four years after graduation? (HO_8, HO_9, and HO_{10}.)
4. What is the educational status of graduates four months and four years after graduation? (HO_{11}, HO_{12}, HO_{13}, and HO_{14}.)

The acceptance or rejection of the statistical hypotheses are summarized in Table XVII. The differences among the groups within the categories which contributed to the acceptance or rejection of these hypotheses are described following the table.

TABLE XVII

THE ACCEPTANCE AND REJECTION OF NULL HYPOTHESES REGARDING THE ASSOCIATION BETWEEN VARYING DEGREES OF VOCATIONAL TRADE AND INDUSTRIAL AND/OR TECHNICAL EDUCATION AND THE SUBSEQUENT EARLY CAREER PATTERNS OF HIGH SCHOOL GRADUATES

HYPOTHESES	DISPOSITION	
	FIRST SURVEY	SECOND SURVEY
HO_1 : There is no significant difference among the groups in terms of employment status (other than military service) four months following graduation.	REJECTED	
HO_2 : There is no significant difference among the groups in terms of employment status (other than military service) four years following graduation.		ACCEPTED

TABLE XVII (CONTINUED)

HYPOTHESES	DISPOSITION FIRST SURVEY	SECOND SURVEY
HO_3 : There is no significant difference among the groups in terms of employment status (other than military service) four years following graduation.	REJECTED	
HO_4 : There is no significant difference among the groups in terms of having been employed or not having been employed (other than military service) in the four years following graduation.		ACCEPTED
HO_5 : There is no significant difference among the groups in terms of taking the first job offered and not taking the first job offered four months following graduation.	ACCEPTED	
HO_6 : There is no significant difference among the groups in terms of hourly wage of employed subjects four months following graduation.	ACCEPTED	
HO_7 : There is no significant difference among the groups in terms of hourly wage of employed subjects four years following graduation.		ACCEPTED
HO_8 : There is no significant difference among the groups in terms of hourly wage of employed subjects four years following graduation.	ACCEPTED	
HO_9 : There is no significant difference among the groups in relation to military status four years following graduation.		ACCEPTED

TABLE XVII (CONTINUED)

HYPOTHESES	DISPOSITION FIRST SURVEY	SECOND SURVEY
HO_{10}: There is no significant difference among the groups in terms of having served in the military service and not having served in the military service, four years following graduation.		ACCEPTED
HO_{11}: There is no significant difference among the groups in terms of having enrolled or not having enrolled for advanced schooling four months following graduation.	REJECTED	
HO_{12}: There is no significant difference among the groups in terms of having had advanced schooling or not having had advanced schooling during the four years following graduation.		ACCEPTED
HO_{13}: There is no significant difference among the groups in the extent of advanced training completed four years following graduation.		ACCEPTED
HO_{14}: There is no significant difference among the groups in the number of college credit hours completed by those subjects who enrolled in college, as determined four years following graduation.		ACCEPTED

(1) Employment status -- Four months following graduation it was found that Group B had the highest percentage employed, both full-time and part-time. Group A had a much larger number employed full-time than did Group C; however, Group C had more employed part-time than did Group A. All of these differences were significant at the .05 level and HO_1

was rejected.

Four years after graduation the groups were still in the same relative position: Group B, 66.6 percent; Group A, 51.3 percent and Group C, only 35.9 percent. Conversely, when part-time employment was considered, Group C ranked highest with 41 percent employed, while Group A had 23 percent and Group B, only 20 percent. However, these differences were not statistically significant and HO_2 was accepted.

When considering only those employed and those not employed the results were the same. There was a significant difference at the four-month level and HO_3 was rejected; however, these differences dissipated over the four-year period and HO_4 was accepted.

(2) Acceptance of the First Job Offered -- Group C accepted the first job offered more often than did the Group B, and Group A was more reluctant than the others to take the first job offered. There were differences, but they were not significant; therefore, HO_5 was accepted.

(3) Employees' Hourly Wage -- Four months following graduation it was revealed that Group A started at a slightly higher rate than Group B and both were higher than Group C. This same pattern still prevailed at the four-year level. However, the differences were not significant on either questionnaire. Therefore, both HO_6 and HO_7 were accepted.

(4) Military Service Status -- Four months following graduation there were twice as many in both Groups A and B who entered the military service than in Group C; however, there were too few in each group who entered to make the difference significant and HO_8 was accepted. Four years following graduation the number still in the service was approximately the same for each group, but the number who had completed their military service in Groups A and B was almost four times as large as

Group C. There was not enough in any of the groups who had completed their service obligation to make these differences significant; therefore, HO_9 was accepted. The categories were combined to see if significant difference could be found when comparing only those who had served and those who had not served, but the results were the same. There was not a significant difference and HO_{10} was accepted.

(5) Advanced Training Status -- Four months following graduation, the number in each group taking some advanced training was quite high. Group A, was the lowest with 59 percent; followed by Group B, with 63.3 percent; and Group C, with the largest number, 85 percent. There were strong enough differences that HO_{11} was rejected. Four years later the number who had taken some advanced training was even higher for each group than before. Group A, was lowest with 71.4 percent; Group B, was second with 80 percent; and Group C, reached 85 percent; however, these differences were not statistically significant and HO_{12} was accepted.

(6) Extent of Advanced Training -- Four years following graduation Group C tended to go to college more than either of the vocational groups; however, the reverse was true when attending trade school, both vocational groups attended more than Group C. There were differences among the groups in each category, but these differences were small; therefore, HO_{13} was accepted and in this study it was concluded there was not a significant difference among the groups.

(7) Number of College Credit Hours Earned -- Four years following graduation with the elimination of the category, Clock Hours Only, the groups were still quite similar in the amount of college credit earned. There were differences in each category, but these differences were too small to make a significant differences; therefore, HO_{14} was accepted.

Conclusions

Five findings emerge from the study: (1) There was significant difference among the groups surveyed in the category of employment status four months following graduation when the responses were full-time, part-time, and not employed. (2) There was a significant difference among the groups in employment status four months following graduation when the responses were employed and not employed. (3) There was a significant difference four months following graduation among the groups in the category of advanced training or schooling. (4) There were no significant differences among the groups, either four months or four years following graduation, in the categories of: (a) military service status, (b) acceptance of first job offered, (c) wage per hour secured, (d) extent of advanced training. (5) There were no significant differences among the groups at the four-year level in either (a) employment status, (b) advanced training or schooling, or (c) number of college credit hours received.

Implications

Students who had vocational or technical training tended to meet their military obligation sooner than those students who had not had vocational or technical training. The draft status has had a great bearing on the education, employability, and career patterns of male high school graduates. Regardless of their previous vocational training in 1967, a graduate had three major choices: (1) military service, (2) enrollment in college, (3) temporary employment until draft call. Enrollment in a post-secondary vocational or trade school did not convey any deferment for induction. Therefore, it is posited that the draft

status affected the full-time employment of members of the group not pursuing college work immediately following graduation. It can be implied that members of the vocational group were moving up the pay scale after a four-year period because their military service had been completed and they were now full-time employees, while at the same time members of the non-vocational group were awaiting military service.

It appeared that members of the group with vocational training showed a tendency to be employed full-time at a higher percentage rate at the four-month and at the four-year level than did the non-vocational group.

The study indicated that the vocationally oriented groups tend to attempt to improve their vocational skills through completing clock hours of training in post-secondary education more than did the non-vocationally oriented group. It was also indicated that the vocationally oriented groups tend to pursue specific vocational and technical curricula in higher education more often than did the non-vocationally oriented group.

Recommendations

It is recommended that a study be conducted to determine to what extent vocational training received in the secondary school may be utilized in the military service.

Further research is needed to determine the extent of the utilization of the military technical training in civilian life.

Finally, additional studies should be made to determine possible long term effects of vocational-technical training on subsequent employment and retention.

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APPENDIX A

HIGH SCHOOL GRADUATE PLANS STUDY
FOLLOW-UP QUESTIONNAIRE

INSTRUCTIONS: Please read carefully and check the most appropriate answer to each of the following items. Be sure to check one answer for every item.

ITEM	ANSWERS
A. Are you enrolled in school?	1. _____Yes, full time. 2. _____Yes, part time. 3. _____No, not enrolled.
B. Are you now employed (other than military service)?	1. _____Yes, full time (30 or more hours per week. 2. _____Yes, part time (less than 30 hours). 3. _____No, not employed
C. Are you in military service?	1. _____Yes. 2. _____No.
D. Did you receive vocational training in high school?	1. _____Yes, specifically preparing me for the kind of job I have. 2. _____Yes, preparing me for job skills similar to those necessary in my job. 3. _____Yes, but not related to present job. 4. _____Yes, but I am not employed. 5. _____No, no vocational training.
E. Did you try to find a job? (Check more than one answer, if necessary)	1. _____Yes, in the field in which I had vocational training. 2. _____Yes, in a field related to my vocational training. 3. _____Yes, in a field not related to my vocational training. 4. _____Yes, though I had no vocational training. 5. _____No.
F. Did you take the first job you were offered?	1. _____Yes 2. _____No. 3. _____Not applicable, I'm not employed.

G. What is your hourly rate of pay?

1. _____Below $1.00
2. _____$1.00-$1.24
3. _____$1.25-$1.49
4. _____$1.50-$1.74
5. _____$1.75-$1.99
6. _____$2.00-$2.24
7. _____$2.25-$2.49
8. _____$2.50-or more
9. _____Not applicable, no job.

H. Did the high school from which you graduated offer any vocational training?

1. _____Yes, I took the vocational training I wanted.
2. _____Yes, but not in a vocation of interest to me.
3. _____Yes, but I wasn't interested in any vocational training in high school.
4. _____No, no vocational training offered.

I. If vocational training was available to you now, would you take it?

1. _____Yes.
2. _____No.
3. _____Not applicable, I'm in vocational or technical training now.

PLEASE ANSWER THE FOLLOWING QUESTIONS IN SPECIFIC TERMS IF THEY APPLY TO YOU.

1. If you are in school, what school are you attending and what is your major in school?

_____

(School) (Major)

2. If you are employed, what is your job title, and what is your primary work?

_____

_____

3. If you are in military service, what kind of work are you doing or being trained to do?

_____

_____

4. If you wanted vocational training in high school but couldn't take the training you wanted, what training would you have wanted?

_____

5. If you would like to have vocational training now, what training would you want?

_____

_____

SECOND FOLLOW-UP QUESTIONNAIRE OF HIGH SCHOOL GRADUATES OF 1967
IN REFERENCE TO: EDUCATION, EMPLOYMENT, SALARY AND POSITION

INSTRUCTIONS: Please read carefully and check the most appropriate answer to each of the following items. Be sure to check one answer for every item.

A. Have you taken any advanced training or schooling since you graduated from high school? (Check more than one if appropriate)

1. ___Yes, full time
2. ___Yes, part time
3. ___No, none
4. ___College
5. ___Trade and industrial or technical

B. If answer is "Yes" to Question "A" please give appropriate information here.

1. College, how many credit hours? _____
2. What degree working for? Associate_____B.S._____
3. What college?_____
4. If vocational training, what area?_____
5. How many clock hours?_____
6. What school?_____

C. Have you had military service?

1. ___Regular Service
2. ___Reserves
3. ___National Guard
4. ___Other
5. ___None

D. If so, how long?

1. _____Months served
2. Are you still in service? Yes___No___

E. What special field were you trained for, or what was your job title while in the service. Explain briefly:_____
_____
_____

F. Are you now employed (other than military service)?

1. _____Yes, full time (30 hours per week or more)
2. _____Yes, part time (less than 30 hours per week)
3. _____No, not employed

G. Excluding time spent in school or in the military, approximately how much of the time since leaving high school have you been employed 30 hours or more per week?

1. _____Full time
2. _____3/4 time
3. _____½ time
4. _____¼ time
5. _____Very little
6. _____None of the time

H. Did you receive vocational trade and industrial or tech training in high school?

1. _____Yes, specifically preparing me for the kind of job I now have.
2. _____Yes, preparing me for skills similar to those necessary in my job.
3. _____Yes, but not relating to my present job.
4. _____Yes, but I am not employed.
5. _____No, no vocational trade and industrial or tech training taken.

I. Are you employed?

1. _____Yes, in a field in which I had vocational training.
2. _____Yes, in a field related to my vocational training.
3. _____Yes, in a field not related to my vocational training.
4. _____Yes, although I had no vocational training.

J. How valuable has your vocational trade and industrial or technical training been for you.

1. ___Very valuable 3. ___Some value 5. ___No value
2. ___Valuable 4. ___Little value 6. ___Had none

K. Would you recommend trade and industrial or technical training to others? (Check more than one if appropriate)

1. ___Brother 2. ___Sister 3. ___Friend 4. ___Anyone

5. ___No one

L. Would you like more vocational training if it were available to you?

1. ___Yes 2. ___No 3. ___What kind of training?

Please list:_____

M. What was your hourly rate of pay when you took your first job after leaving high school?

1. ___Below $1.00
2. ___$1.00-$1.24
3. ___$1.25-$1.49
4. ___$1.50-$1.74
5. ___$1.75-$1.99
6. ___$2.00-$2.24
7. ___$2.25-$2.49
8. ___$2.50 or more
9. ___I have not been employed.

N. What is your hourly rate of pay now?

1. ___Below $1.00
2. ___$1.00-$1.74
3. ___$1.75-$1.99
4. ___$2.00-$2.49
5. ___$2.50-$2.99
6. ___$3.00-$3.49
7. ___$3.50-$3.99
8. ___$4.00-$4.49
9. ___$4.50-$4.99
10. ___$5.00 or more
11. ___I have not been employed

O. Did the high school from which you graduated offer any vocational training?

1. ____Yes, I took vocational training that interested me.
2. ____Yes, I took vocational training but not my first choice.
3. ____Yes, but none that interested me.
4. ____Yes, but I was not interested in taking any kind of vocational training.
5. ___Yes, I wish I had taken some now.
6. ___Yes, I wish high schools would offer more vocational training.
7. ___No, none offered

P. If you are employed, what is your job title and what is your primary work?

_____
_____
_____
_____
_____

Q. Where have you been employed (excluding military service)?

1. ___In the state all of the time.
2. ___Out of state all of the time.
3. ___Part of the time in the state and part of the time out of the state.

R. In what city or cities have you been employed? (If out of state, list the state)

_____
_____
_____
_____

APPENDIX B

TABLE XVIII

DISTRIBUTION OF RESPONSES AS TO HOURLY RATE OF PAY
FOUR MONTHS FOLLOWING GRADUATION

Question: What is your hourly rate of pay?

	Group A N = 60		Group B N = 75		Group C N = 44		Total N = 179	
Response:	No.	%	No.	%	No.	%	No.	%
Below $1.24	12	20	18	24	13	29.5	43	24
$1.25-$1.74	29	48	36	48	20	45.5	85	47
$1.75-$2.24	12	20	13	17	5	11.0	30	16
$2.25-above	7	12	8	11	6	14.0	21	13
TOTAL	60		75		44		179	

$x^2 = 2.455$ $P > .05$ $P < .90$

TABLE XIX

DISTRIBUTION OF RESPONSES AS TO HOURLY RATE OF PAY
FOUR YEARS FOLLOWING GRADUATION

Question: What is your hourly rate of pay?

	Group A N = 48		Group B N = 50		Group C N = 42		Total N = 140	
Response:	No.	%	No.	%	No.	%	No.	%
Below $1.74	10	20.8	14	28	16	38	40	28.6
$1.75-$2.49	19	39.6	12	24	9	21.3	40	28.6
$2.50-$3.99	13	27	19	38	12	28.6	44	31.4
$4.00-above	6	12.5	5	10	5	12.1	16	11.4
TOTAL	48		50		42		140	

$x^2 = 8.393$ $P > .05$ $P < .20$

TABLE XX

DISTRIBUTION OF RESPONSES AS TO DESIRE FOR TAKING ADDITIONAL AVAILABLE TRAINING FOUR MONTHS FOLLOWING GRADUATION

Question: If vocational training were available to you now, would you take it?

	Group A N = 103		Group B N = 118		Group C N = 99		Total N = 320	
Response:	No.	%	No.	%	No.	%	No.	%
Yes	38	48	45	50	18	23	101	41
No	41	52	45	50	60	77	146	59
TOTAL	79		90		78		247	

$x^2 = 15.545$ $P > .05$ $P < .005$

TABLE XXI

DISTRIBUTION OF RESPONSES AS TO THE TIME SPENT IN THE MILITARY SERVICE FOUR YEARS FOLLOWING GRADUATION

Question: How much time have you spent in the military service?

	Group A N = 56		Group B N = 60		Group C N = 54		Total N = 170	
Response:	No.	%	No.	%	No.	%	No.	%
Up to 18 months	9	16.0	9	15.0	5	9.2	23	13.5
19-30 months	10	17.8	12	20.0	7	13.0	29	17.0
Over 30 months	6	10.6	4	6.6	5	9.2	15	8.8
No Military Service	31	55.4	35	58.5	37	68.5	103	60.6
TOTAL	56		60		54		170	

$x^2 = 3.376$ $P > .05$ $P < .75$

TABLE XXII

DISTRIBUTION OF RESPONSES AS TO TYPE OF DEGREE WORKING TOWARD FOUR YEARS FOLLOWING GRADUATION

Question: What type of degree are you working for?

	Group A N = 40		Group B N = 48		Group C N = 46		Total N = 134	
Response:	No.	%	No.	%	No.	%	No.	%
B.S. Degree	30	75	31	64.6	37	80.4	98	73.2
Associate Degree or other	10	25	17	35.4	9	19.6	36	26.8
TOTAL	40		48		46		134	

$x^2 = 3.050$ $P > .05$ $P < .20$

TABLE XXIII

DISTRIBUTION OF RESPONSES AS TO APPROXIMATE TIME SPENT WORKING FOUR YEARS FOLLOWING GRADUATION EXCLUDING MILITARY SERVICE AND SCHOOL

Question: What is the time (approximate) that you spent working?

	Group A N = 56		Group B N = 60		Group C N = 54		Total N = 170	
Response:	No.	%	No.	%	No.	%	No.	%
Full-time	17	30	18	30	10	18.5	45	27
Three-fourths	7	13	11	18	9	16.5	27	16
One-half	4	7	8	13	3	6	15	9
One-fourth	14	25	9	15	13	24	36	21
Very little	9	16	11	18	12	22	32	19
None of the time	5	9	3	5	7	13	15	9
TOTAL	56		60		54		170	

$x^2 = 11.376$ $P > .05$ $P < .30$

TABLE XXIV

DISTRIBUTION OF RESPONSES AS TO STATUS OF EMPLOYMENT FOUR YEARS FOLLOWING GRADUATION

Question: Are you employed?

	Group A N = 56		Group B N = 60		Group C N = 54		Total N = 170	
Response:	No.	%	No.	%	No.	%	No.	%
Yes, in a field in which I had vocational training.	9	16	4	7	0	0	13	8
Yes, in a field related to my training.	2	4	5	8	0	0	7	5
Yes, in a field not related to my training.	6	30	18	30	5	9	39	23
Yes, although I had no vocational training.	8	14	18	30	29	54	55	32
Not employed	21	37	15	25	20	37	56	33
TOTAL	56		60		54		170	
$x^2 = 49.871$			$P < .05$		$P < .005$			

TABLE XXV

DISTRIBUTION OF RESPONSES AS TO SIZE OF CITIES WHERE STUDENTS WERE EMPLOYED, EITHER IN STATE OR OUT OF STATE, FOUR YEARS FOLLOWING GRADUATION

Question: What was the size of the city in which you were employed?

	Group A N = 56		Group B N = 60		Group C N = 54		Total N = 170	
Response:	No.	%	No.	%	No.	%	No.	%
Small, Oklahoma City	1	2	4	7	7	13	12	7

TABLE XXV (CONTINUED)

Response:	Group A N = 56 No.	%	Group B N = 60 No.	%	Group C N = 54 No.	%	Total N = 170 No.	%
Medium, Oklahoma City	11	20	22	37	16	30	49	29
Large, Oklahoma City	30	54	15	25	17	31	62	37
Small, Out-of-State	0	0	0	0	1	2	1	1
Medium, Out-of-State	2	4	5	8	2	4	9	5
Large, Out-of-State	3	5	7	12	4	7	14	8
No reply	9	16	7	10	7	13	23	14
TOTAL	56		60		54		170	
x^2 = 20.654			P < .05					

TABLE XXVI

DISTRIBUTION OF RESPONSES AS TO LOCATION OF EMPLOYMENT EXCLUDING MILITARY SERVICE IN THE FOUR YEARS FOLLOWING GRADUATION

Question: Where have you been employed?

Response:	Group A N = 56 No.	%	Group B N = 60 No.	%	Group C N = 54 No.	%	Total N = 170 No.	%
In state all of the time	36	64	33	55	28	52	97	57
Out of state all of the time	1	2	2	3	2	4	5	3
Part in, part out of state	11	20	19	32	16	30	46	27
No response	8	14	6	10	8	15	22	13
TOTAL	56		60		54		170	
x^2 = 3.470			P > .05		P < .75			

TABLE XXVII

DISTRIBUTION OF RESPONSES AS TO THE VALUE OF VOCATIONAL TRADE AND INDUSTRIAL AND TECHNICAL TRAINING FOUR YEARS FOLLOWING GRADUATION

Question: Of what value was your vocational, trade, and industrial and technical training?

	Group A N = 56		Group B N = 60		Group C N = 54		Total N = 170	
Response:	No.	%	No.	%	No.	%	No.	%
Very Valuable	15	27	15	25	5	9	35	21
Valuable	13	23	7	12	2	4	22	13
Of Some Value	16	29	19	32	5	9	40	24
Of Little Value	6	11	6	10	0	0	12	7
Of No Value	4	7	5	8	3	6	12	7
Had None	2	3	8	13	39	72	49	29
TOTAL	56		60		54		170	

$x^2 = 79.154$ $P < .05$ $P < .001$

TABLE XXVIII

DISTRIBUTION OF RESPONSES AS TO RECOMMENDATIONS FOR TRADE AND INDUSTRIAL OR TECHNICAL TRAINING TO OTHERS FOUR YEARS FOLLOWING GRADUATION

Question: Would you recommend trade and industrial or technical training to others?

	Group A N = 56		Group B N = 60		Group C N = 54		Total N = 170	
Response:	No.	%	No.	%	No.	%	No.	%
Brother	4	7	5	8	2	4	11	6
Sister	1	2	0	0	0	0	1	1
Friend	10	18	12	20	5	9	27	17
Any one	36	64	20	33	8	15	64	37

TABLE XXVIII (CONTINUED)

Response:	Group A N = 56 No.	%	Group B N = 60 No.	%	Group C N = 54 No.	%	Total N = 170 No.	%
No one	5	9	5	8	4	7	14	9
No reply	0	0	18	30	35	65	53	31
TOTAL	56		60		54		170	
x^2 = 58.425			P < .05		P < .001			

TABLE XXIX

DISTRIBUTION OF RESPONSES OF STUDENTS FOUR YEARS FOLLOWING GRADUATION AS TO WHETHER THE HIGH SCHOOL OFFERED VOCATIONAL TRAINING OR NOT

Question: Did the high school from which you graduated offer vocational training?

Response:	Group A N = 56 No.	%	Group B N = 60 No.	%	Group C N = 54 No.	%	Total N = 170 No.	%
Yes, I took training that interested me	29	52	20	33	3	6	52	31
Yes, but not my first choice	1	2	5	9	1	2	7	4
Yes, but none that interested me	5	9	5	9	8	15	18	11
Yes, but I was not interested in taking any	12	21	12	20	31	58	55	32
Yes, I wish I had taken some now.	3	5	5	9	4	7	12	7
Yes, I wish more schools would offer it.	4	7	6	10	1	2	11	6
No, none was offered	2	4	7	11	6	11	15	9
TOTAL	56		60		54		170	
x^2 = 46.604			P < .05		P < .001			

TABLE XXX

DISTRIBUTION OF RESPONSES AS TO TYPES OF TRAINING RECEIVED FOUR YEARS FOLLOWING GRADUATION

Question: What type of training did you receive?

Response:	Group A N = 56 No.	%	Group B N = 60 No.	%	Group C N = 54 No.	%	Total N = 170 No.	%
College	30	54	37	61	45	83	112	66
Trade or Technical	10	18	11	18	1	2	22	13
None Taken	16	28	12	21	8	15	36	21
TOTAL	56		60		54		170	
x^2 =	15.705		P < .05		P < .005			

TABLE XXXI

RELATION OF VOCATIONAL TRAINING TO EMPLOYMENT AS REPORTED FOUR MONTHS FOLLOWING GRADUATION

Question: Did you receive vocational training in high school related to your employment?

Response:	Group A N = 100 No.	%	Group B N = 110 No.	%	Total N = 210 No.	%
Yes, specifically training me for the kind of job I now have	16	16	17	15.5	33	15.7
Yes, preparing me for job skills similar to those in my job	24	24	20	18.2	44	20.9
Yes, but not related to my present job	32	32	33	30.0	65	30.9
Yes, but I am not employed	28	28	40	36.3	68	32.4
TOTAL	100		110		210	
x^2 = 1.977			P > .05		P < .60			

VITA

Tim Baker

Candidate for the Degree of

Doctor of Education

Thesis: THE ASSOCIATION BETWEEN VARYING DEGREES OF VOCATIONAL TRADE AND INDUSTRIAL AND/OR TECHNICAL EDUCATION AND THE SUBSEQUENT EARLY CAREER PATTERNS OF HIGH SCHOOL GRADUATES

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