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DISSERTATION

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

By

William J. Petrie, A.A., A.B., M.S.

By

The Ohio State University

1975

Reading Committee:

Dr. Aaron J. Miller
Dr. Anna M. Gorman
Dr. Roy A. Larmee
Dr. Robert W. McCormick

Approved By

Aaron J. Miller
Adviser
Department of Vocational-Technical Education
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VITA

April 13, 1933  Born--Jersey City, New Jersey

June 1951     High School Diploma
              Dickinson Accredited Evening High School
              Jersey City, New Jersey

1953-1955     U. S. Army
              70th Combat Engineers Battalion
              U. S. Forces, Austria

1955-1956     Serviceman, Refrigeration and
              Air Conditioning

1957-1966     Plumber, Apprentice and Journeyman

June 1963     A. A. Degree
              San Diego City College

June 1966     A. B. Degree
              San Diego State College

1968-1969     Teacher, Occupational Metals
              Eagle Rock High School
              Los Angeles City Schools
              Los Angeles, California

1969-1973     Instructor, Construction Crafts
              Regional Vocational Center
              Fort Wayne Community Schools
              Fort Wayne, Indiana

September 1971 M. S. Degree, Indiana University

1973-1975     Research Associate
              The Center for Vocational Education
              The Ohio State University
              Columbus, Ohio
FIELDS OF STUDY

Major Field: Vocational Education

Studies in Vocational Education.
Professors Aaron M. Miller and Anna M. Gorman

Studies in Educational Research.
Professor J. Robert Warmbrod

Studies in Educational Administration.
Professors Roy A. Larmee and Robert W. McCormick
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CHAPTER I

INTRODUCTION

Public education as conducted within the American culture shoulders a major role in the preparation of youth to become useful and at the same time productive citizens.¹ This educational task now includes the acquisition of occupational skills which differ dramatically from the more traditional 3 R's of the past.² A major development toward such educational thinking was the Vocational Education Act of 1963, which provided massive federal funding to improve vocational education opportunities for youth. A second major development was the concept of Career Education as explored by Sidney P. Marland, former Assistant Secretary of Education.³ This concept was later embraced as one of the nation's top priorities.


Role of Apprenticeship in Vocational Education

The materials used in and the methods of business and industry have undergone tremendous changes since World War II. New metals requiring new methods of processing, changes in building techniques, and new computer typesetting machinery all require new skills. No longer are simple skills sufficient for the worker, for automatic machines can perform any repetitive job faster and cheaper than human labor. Workers who were operators now face the need of acquiring complex skills or of being replaced by machines. Unfortunately learning multiple complex skills takes time and planned effort. On-the-job (OJT) training is inadequate, for it omits related instruction; while on the other hand, theoretical knowledge alone is also insufficient, because it omits job experience. The somewhat traditional form of becoming partially or fully skilled through informal processes such as "picking up a trade" while employed as a helper has been effectively eliminated by organized labor. The majority of unions now have forbidden the employment of helpers. Thus, acquiring proficiency in most skills, apprenticeship is considered the "soundest and the most efficient method of training". Apprenticeship is the educa-

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tion of employees; a method of developing skilled manpower for business and industry; it is an adjunct to education. Vocational education plays an important role in apprentice education in providing training facilities and competent instructors.

Apprentice education is an important contribution to the solution of the manpower training and planning in an industrial society. Public secondary education is not directly involved with the apprenticeship system except through special pre-apprentice programs which emphasize attitude improvements and low level skill acquisitions. Educators do have a responsibility to aid youth who can profit from the apprentice system by directing their energies toward such a program. Unfortunately research has shown that few educators have had any actual personal contact with the apprentice system.

Historical Perspective of Apprenticeship

A significant type of training which dates from antiquity has been the concept of apprenticeship training. Since the time man was a simple "hewer of wood" this method

---


has been accepted to insure a steady supply of competent artisans to meet the needs of the marketplace. Traditionally this responsibility for training fell to the members of the family unit, with skills handed on from father to son. In time, organizations such as craft guilds were formed to insure high standards of training and workmanship. This concept of guild training and testing with emphasis on quality workmanship existed in Europe and America until the introduction of the Industrial Age. In an age where the quantity produced was more important than the quality of the product the apprenticeship system declined markedly, particularly in the United States.8

With the advent of the Industrial Age, the apprenticeship system was exploited by industrialists who utilized young apprentices as cheap labor. The apprentice bound by an indentured agreement was effectively tied to the factory until he completed his term.9 A common practice of the time was to discharge the newly completed journeyman and replace him with a newly indentured apprentice at a lower rate of


pay. As a by-product, the organization of trade unions during the latter part of the nineteenth century, brought about the restoration of the apprentice system.\(^{10}\)

Important contributions to the reform included a provision for related technical instruction to be provided for the apprentice after normal working hours and under the guidance of a competent instructor.\(^{11}\) In 1937, Congress passed the Fitsgerald Act, a law authorizing the Secretary of Labor to set up labor standards that would safeguard the welfare of apprentices and bring management and labor together voluntarily to formulate apprentice programs.\(^{12}\) As a result of the Fitsgerald Act, the Bureau of Apprenticeship and Training (BAT) located in the Manpower Administration of the Department of Labor and the cooperating state apprenticeship agencies now operate a network of field offices throughout the United States.\(^{13}\)

**Apprenticeship, Vocational Instructors and Guidance Counselors**

Unlike the American college system with its feeder system of secondary schools that prepare students for the

\(^{10}\text{Ibid, p. 3.}\)

\(^{11}\text{Kursh, op. cit., p. 40.}\)

\(^{12}\text{Rajan, op. cit., p. 45.}\)

rigors they will face, there is no clear feeder system to apprenticeship.\textsuperscript{14} State and federal apprenticeship agencies do not recruit and place individuals, but merely promote the concept of apprenticeship as a training method. The principle function of state and federal agencies is to formulize indenture agreements and then monitor those contracts that have been made between apprentices, unions, and/or employers.

If students are to be permitted to exercise intelligent career choices, they should possess an awareness of numerous occupational possibilities when they graduate or terminate their secondary education. In particular, those individuals who show strong tendencies toward skill training and possess average or better intelligence should be made readily aware of the training opportunities available via apprenticeships. The secondary school system has among its ranks, two distinct groups of professionals who, if they themselves possess positive attitudes toward apprenticeships, can greatly promote apprentice education.

Vocational instructors are in an ideal position by virtue of their daily contact with students who are work oriented. Guidance counselors are in a somewhat less favorable position in that their loyalties may be divided

in promoting other forms of post-secondary education to students. However, both groups of secondary personnel can readily influence career choices and in particular apprenticeship education if they themselves exhibit positive attitudes toward the system to their students. Therefore, this study is interested in understanding how vocational instructors and guidance counselors perceive apprenticeship education and the apprentice system. Such information can influence a student's occupational or career choice. Super, in explaining the term occupational choice said that:

The term vocational choice, widely used in discussions and studies on vocational development and adjustment, conveys a misleading notion of neatness and precision of time, a singleness and uniqueness in the life of an individual.

Choice is, in fact a process rather than an event. The term should denote a whole series of choices, generally resulting in the elimination of some alternatives and the narrowing down process yields what might perhaps be called an occupational choice.\(^{15}\)

The elimination of alternatives can become possible only when they are presented to students as explained by Barocci during a statewide study of apprentice programs in Wisconsin.\(^{16}\) He discovered that less than 21 percent of all registered apprentices had discussed apprentice opportu-


nities with either a guidance counselor or teacher. What influence should the secondary school environment have, if any, upon student's selection of an apprentice program? Williamson, writing on the historical perspective of educational counseling states that:

From the dawn of history there have been two kinds of education--the education of the manual laborer through practice with tools, implements, and machines in shop, field, ships or mines, and the education of brain workers and members of the leisure class in the school, largely with the aid of books.¹⁷

In keeping with this line of thinking, researchers doing a study in Wisconsin on the lack of women apprentices reported that they as interviewers became:

Highly sensitive to an element of snobbery encountered in educators, counselors, government policy-makers and administrators who, looking down from the comfortably elevated status of the academically accredited, have avoided familiarity or constructive participation in what had become a neglected, underfunded, and poorly understood backwater on the manpower scene.¹⁸

Modern Apprenticeship System

The modern apprenticeship system can be operationally defined as: the training for specific occupations, particularly a skilled craft or trade, that required diverse

range of skills and knowledge, as well as maturity and independence of judgment. Modern apprentice programs are characterized by a series of on-the-job experiences offered in relationship with related classroom instruction.

The modern apprenticeship system offers a youth excellent earnings, skill training and job security. Yet the apprenticeship system in America is at its lowest point since the early 1950's in terms of actual apprentices who are in bonafide indentured programs. Mills saw two major problems developing in the United States that tended to reduce admissions to apprentice programs. He stated that:

On the one hand, a larger portion of young men were going to college than ever before. On the other hand, the manifold problems of the secondary school system in some areas produced young men with poor academic qualifications. In consequence, the pool of apprenticeship applicants in some crafts was markedly reduced. This decrease in enrollment, along with increased demands by business and industry, has led to a national shortage of skilled craftsmen. The nation is now faced with the paradox that in a time of unemployment thousands of well paying jobs remain unfilled.

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In response to this national problem, former Secretary of Labor, Peter J. Breman, while in office, activated the Federal Committee on Apprenticeship. He appointed 25 members to this committee, and for the first time included individuals from the public at large. In his charge to the committee he stated that:

The apprenticeship system is falling far short of what it is capable of accomplishing, not only for business and industry, but for the vast numbers of American workers who could begin satisfying career through the system.22

The former Secretary ended his charge with the statement:

In addition to producing more skilled workers, a bigger and more responsive apprenticeship system could have a number of other beneficial effects. It might raise the status of the blue collar workers and elevate the public's view of the merits of working with one's hands.23

This view as mentioned by the former Secretary may indicate that the general public, of which vocational educators and guidance counselors are a part, may suffer from an information gap. This lack of information was expressed by Briggs in a statement that:

Most outsiders knowledge of apprenticeship is confined to newspaper accounts of how the more highly organized trades in the


23Ibid, p. 4.
construction industry, whose unions have bargained exceptionally high rates of pay, were trying to keep trade entry opportunities for their own kind.  

In the United States, apprentices, on the average, start their programs after high school graduation. In contrast, European apprenticeship programs are usually started in the early or middle teens. The European system of early selection, results in apprentices completing their programs by early adulthood, which provides them with a secure livelihood and the ability to contribute to both family and society. 

The American practice of job shopping, until one finds a nitch that fits, is well documented. This period can take up to eight years, but most adults find their place within society by age 25. Many students do enter apprenticeships immediately following their high school experience. However, the vast majority of high school students may be unaware of the potential rewards that an apprenticeship program has to offer.

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offer. In the United States an apprenticeship program may result in substantial monetary rewards, sometimes exceeding $40,000 over the normal four year period of training.\textsuperscript{27}

Need for the Study

American apprenticeship educational programs prepare over 200,000 skilled workers for industry annually. This number represents only one-tenth of the estimated two million skilled workers needed annually to replace those who retire, die, or change occupations.\textsuperscript{28} This estimate does not allow for industrial expansion or changing technology.

In a study by the Kalamazoo Public Schools concerning apprenticeship education programs, one major finding was that vocational instructors and guidance counselors generally lacked information pertaining to the apprenticeship system.\textsuperscript{29} Information for apprenticeship programs related to educational and age requirements for the general public, as well as special interest groups was considered inadequate. Thus, their (the instructors and guidance

\begin{itemize}
\item \textsuperscript{28}Nelson, op. cit., p. 23.
\item \textsuperscript{29}Apprenticeship Study Committee, Minority Participation in Kalamazoo's Apprenticeship Training Programs, Kalamazoo, Michigan, 1973, p. 38.
\end{itemize}
counselors' perceptions of such programs and their communications to their students were based on an incomplete information base. This factor, coupled with the high percentage of students who leave public schools annually without employment skills or plans for further education, re-emphasizes the need to strengthen the understanding of the apprentice system by guidance counselors and vocational education personnel.

Drew, in a study conducted by Purdue University for the United States Department of Labor, suggests that, "Some new approaches are needed to bring home the message to our nation's educators and to our youth that there is dignity, prestige, and also good pay in apprenticeable trades."^30

Because of the apparent demand for skilled craftsmen combined with the low enrollments in apprenticeship programs and the possible lack of understanding of guidance counselors and vocational educational personnel concerning apprenticeship education, a study to determine the attitudes of guidance counselors and vocational personnel toward apprenticeship education is appropriate as a forerunner of other approaches to in-depth research in this area.

Purpose of the Study

The purpose of this study is to examine the attitudes of guidance counselors and vocational instructors toward apprenticeship education, and their understanding of the apprenticeship system. The following specific areas of attitude and understanding will be examined in detail:

(1) attitudes held by selected Ohio vocational instructors and guidance counselors toward the apprentice system;
(2) attitudes held by selected Ohio vocational instructors and guidance counselors toward the economic value of apprenticeship training;
(3) degree to which Ohio vocational instructors and guidance counselors feel the need to promote apprentice education within the boundaries of the public school system;
(4) attitudes held by vocational instructors and guidance counselors toward the involvement of business and industry employees as resource persons to promote pre-apprentice education.

In addition to the above mentioned purposes, this study further seeks to determine:

(5) school location (urban or rural) influence on attitudes held by Ohio vocational instructors
and guidance counselors toward apprentice education;

(6) attitudes toward apprentice education held by Ohio vocational instructors and guidance counselors who have experienced apprentice education and those without apprentice training; and

(7) attitudes held by Ohio vocational instructors and guidance counselors toward pre-apprentice education being conducted within the secondary school system.

**Study Hypotheses**

The following null hypotheses are postulated concerning the attitudes of selected Ohio vocational instructors (teachers) and guidance counselors concerning apprenticeship education as a career preparation effort.

**Hypothesis One**

There is no significant difference in the attitude held by vocational instructors and guidance counselors toward the economic value of apprenticeship programs.

**Hypothesis Two**

There is no significant difference in attitudes toward apprenticeship programs held by Ohio educational personnel who are considered to be located in urban areas and those located in rural areas.
Hypothesis Three

There is no significant difference in the attitudes toward apprentice programs held by Ohio educational personnel who have completed an apprentice program and those who started but did not complete an apprentice program.

Hypothesis Four

There is no significant difference in the attitudes toward apprentice programs held by Ohio educational personnel who have completed an apprentice program and those who have not experienced an apprentice program.

Hypothesis Five

There is no significant difference in attitudes held by Ohio vocational instructors (teachers) and guidance counselors toward the conducting of pre-apprentice training programs in secondary school facilities.

Hypothesis Six

There is no significant difference in attitudes held by Ohio vocational instructors (teachers) and guidance counselors toward the involvement of non-educational personnel as resource individuals to conduct pre-apprentice programs.

Hypothesis Seven

There is no significant difference in attitude toward apprenticeship as held by vocational instructors who teach in the major trade classifications of construction, metal working and graphic arts.
Definition of Terms

The following terms are defined for this study. Other terms or phrases are considered to be self-explanatory. Apprentice Education, as used in this study, identifies that section of an apprenticeship agreement that denotes the length of an apprenticeship; a progressive scale of wages; work processes to be taught; the amount of instruction in subjects related to the craft or trade, such as characteristics of materials used, selected shop mathematics, and blueprint reading.

Attitudes, as used in this study are mental responses which exert some general and consistent influence upon evaluative responses toward apprenticeship education. Such attitudes are generally persistent over time.\textsuperscript{31}

Pre-Apprentice Education, as used in this study refers to organized classes conducted by public school systems as a device to promote apprenticeship awareness. This program is designed to create a favorable set of attitudes toward the skilled crafts along with a minor introduction to skill clusters.

Vocational Counselor, as used in this study identifies those individuals in both comprehensive high schools and

area vocational high schools who by title and training are
designated to provide career guidance to high school age
youth.

**Vocational Education**, training designed to prepare indi­
viduals for gainful employment as semi-skilled workers in
fields requiring less than a bachelor's degree in recognized
occupations and in new and emerging occupations.

**Vocational Instructor** (teacher), as used in this study
identifies those individuals who by title or training
possess related educational and vocational experiences,
enabling them to be licensed by the State of Ohio as a
vocational instructor.

**Assumptions**

1. Vocational instructors and guidance counselors in Ohio
have sufficient interest in educational programs which
offer skill training to at least participate in a
study of this nature.

2. Some vocational instructors and guidance counselors in
Ohio have been involved with apprenticeship education
either as students or in instructional roles.

3. All vocational education personnel and guidance
counselors in Ohio are, at least to some extent,
knowledgeable concerning apprenticeship education.

4. The **Ohio Vocational Education and Guidance Counselor
Personnel Directors** are current and inclusive.
Limitations

1. Because of limited resources, the study population to be surveyed is confined to the State of Ohio and thus the findings cannot be generalized beyond Ohio.

2. There is the possibility that not all vocational instructors and guidance counselors in the State of Ohio are entered in the study population identified since only public school education personnel directories were used to select the sample.
A rationale for the study of apprenticeship education must account for the value that such programs have for the individual both in educational and economic terms. In addition, the concerns of the general public and professional educators deserve serious attention if an attempt is made to introduce pre-apprentice programs or promote apprenticeship opportunities to students at the secondary school level.

Since there is a wealth of studies on apprenticeship programs that have been conducted in the more recent past, this review is selective and consists of current writings by recognized authorities in the field of apprenticeship education. In an attempt to substantiate the full significance of this study, the following indexes, abstracts, and reviews of research have been examined: Dissertation Abstracts International, ERIC, Encyclopedia of Educational Research, and Education Index.
Apprenticeship Education

Apprentice programs have long been a basic method of obtaining skill competence. Apprenticeship involves a formal agreement to covering a definite period of time which binds the employer to provide training in return for the work of the apprentice. This traditional mode of skill training has long existed outside of the realm of public education. In 1937 apprenticeship education was formally placed under the direction of the U.S. Department of Labor. The Bureau of Apprenticeship Training (BAT) now provides guidelines for over 450 apprenticeable skilled and technical occupations.¹

As our nation experiences educational change, a continual process of adoption, improvement, and modification within the educational system can be expected. One concept that is highly visible on the American scene is career education. Career education is a concept designed to provide "real world" experiences to school age youth. The professional teacher who is responsible for planning, assisting, and conducting vocational education programs, therefore, can be expected to have attitudes directly relating to apprenticeship education. Gaining insight into the attitudes held by secondary educational personnel, should

assist in the introduction of pre-apprentice and apprenticeship awareness into the secondary school curriculum.

Many young people who are interested in a skilled trade do not have a very accurate impression of what is involved. Much of the turnover that occurs during the early weeks of apprenticeship programs is attributable to the fact that young people are becoming aware that they are not interested in, or do not like, certain trades.\(^2\) Providing occupational information and some opportunity for vocational exploration in a pre-apprentice course, prior to employment as an apprentice, will help young people make a more intelligent choice.

The urgency for more emphasis being placed in apprenticeship education has been stated in an apprenticeship study for the Kalamazoo Public Schools. In this report it was stated:\(^3\)

> Public awareness of apprenticeship training is limited, not only in terms of information pertaining to the nature of the system, but also in terms of specific requirements and standards for local programs. Opinions or beliefs about local programs range from the idea "that anyone can get in" to "it is impossible for anyone but an insider to gain entry." In reality, the actual situation lies somewhere between these extreme points of view.


\(^3\)Kalamazoo, *op. cit.*, p. 12.
In recent years the strategy of recruiting applicants for apprenticeship has shifted slightly from the passive traditional techniques of processing applications from walk-ins and the acceptance of referrals from union journeymen to more active outreach and recruiting.

Farber, too, has discussed the need for more emphasis on public and school awareness of the value of apprentice programs to the nation.

He states:

Recognition that apprenticeships affect the public interest, may also result in formulation of public policies which could result in substantial increases in the number of apprentices. It is also possible that quantitative evaluations of apprenticeship are not the sole, or even the best means of judging the place of the system in the American economy. Although it is commonly known that apprenticeship serves to develop skilled craftsmen, it is frequently forgotten that this form of training also serves as a major means of training and developing lead-men, foremen, and supervisors—without whom management of American industry would face insurmountable problems.4

Venn, in his book Man, Education and Work, displays great concern for the inability of the public schools to take care of the needs of all students. He cites a national scandal when nearly a million high school dropouts enter the work force each year. Many of these are youths of average intelligence, who are unable to relate to the

school curriculum and consequently leave for far more meaningful experiences.

This loss of talent and the effect on the nation was illustrated by the following statement by Venn:

The inability of a technological society to make full use of uneducated individuals narrows the margin to the point where the repercussions of each individual failure can be felt throughout the entire society.5

The apprentice training system has long tradition as a major source of individual skill development in the United States and abroad. Meyers expressed a belief that apprentice education is beneficial to our society.

He states:

Recent studies have confirmed a long-held view that the principles of apprenticeship—the combination of work experience, on-the-job training, and classroom instruction—are the basic in the production of skilled craftsmen.6

Meyers7 extends his statement with the expression that the time is ripe for exploration into potential arrangements and procedures to introduce apprenticeship training into the educational scene.

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5Venn, op. cit., p. 2.
7Ibid., p. 4.
Somers, in a publication concerned with innovations in apprenticeship education, examined the need for a special effort on the part of vocational educators to become involved with apprenticeship education. Somers, in support of this position, favored the location of apprentice educational programs within public vocational-technical facilities. The State of Wisconsin has expressed a willingness to respond and is working toward a program of apprentice awareness.

Drew, as quoted in Manpower, spoke of some of the problems encountered by apprenticeship training committees. He states that:

A successful training program calls for a sufficient pool of interested applicants from which to select apprentices. One of the factors hampering recruitment has been the sometimes unfavorable image of craftsmen created usually through misinformation.

Drew questioned more than 2,000 students in the secondary grades 10 through 12 and discovered that the majority of the students underestimated the pay of 

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9Somers, op. cit., p. 13.
11Drew, op. cit., p. 11.
apprentices and journeymen. The black youth interviewed generally believed they could not get into an apprenticeship program at all.

As mandated by congress in the Vocational Acts of 1963, as well as in the Education Amendments of 1968 and 1972, a concerted effort is to be made to introduce all segments of youth to vocational opportunities. Wilkins, in a publication published before the Vocational Acts stated:

> It is, of course, true that individuals in the secondary group situations may intervene in the process of occupational choice and direct Negro youth towards meaningful employment in skilled-craft occupations. Teachers, vocational guidance counselors and staff personnel of social services organizations among others, can conceivably provide Negro youth with the direction requisite to the achievement of skilled craft status. Unfortunately, most often they do not.¹²

In a recent Gallup Poll of Public Attitudes toward Education, the question was asked of the general public and high school juniors and seniors:

> Some students have no interest in school work as now offered in junior and senior high school and they become a problem. Here are some ways that have been proposed for dealing with these students.¹³


The question was then broken down into subquestions, one which has special interest to the writer's study is—"Have special training courses which would prepare them for jobs."¹⁴

In response to this subquestion, 94 percent of the general public and 97 percent of the students approved of such an undertaking. This, of course, can be construed to imply vocational education as we now visualize it, but it might involve some new adaptation (i.e., pre-apprenticeship training).

It seems apparent that there is a serious lack of information available to young people concerning apprenticeship education. It is also apparent that young believe there is a need for courses to prepare them to enter the job market. Such information and course work can only be made available as curriculum planners see fit. The attitudes of educators are especially influential as much of the responsibility for providing the needed information and course work falls on them.

**Importance of Attitudes Toward Apprenticeship Education**

The review of the literature showed that individuals and groups such as guidance counselors and vocational

¹⁴Ibid.
instructors have specific attitudes toward education. These attitudes can affect the role of apprenticeship education as a by-product of the public school system. Since attitudes are reflected in the behavior as exhibited by groups or individuals, some concept is needed to account for this behavior. The concept of attitude is complex of course, being divided into structure and function.

Zimbardo and Ebbeson concluded the following based on their findings:

> Attitudes have generally been regarded as either mental readiness or implicit predispositions which exert some general consistent influence on a fairly large class of evaluative responses. These responses are usually directed toward some object, person, or group. In addition, attitudes are seen as enduring predispositions, but ones which are learned rather than innate. Thus, even though attitudes are not momentarily transient, they are susceptible to change.¹⁵

This definition implies that attitudes constitute beliefs toward an object, person, or group. These beliefs are consistent and are learned. Also, they are susceptible to change. Wagner and Sherwood, distinguish attitudes from opinion, belief and value, in these statements:

> The difference between an attitude and an opinion is quite simple: an opinion is merely the verbal expression of an

attitude. The difference between an attitude and a belief is slightly more complex: an attitude always includes evaluation of an object (the affective component), whereas a belief does not...

The difference between an attitude and an opinion is one of inclusiveness or scope. Attitude refers to an orientation toward one object, whereas value implies an orientation toward a series or class of related objects. Thus, a value is often a collection of attitudes. For example, one may have a particular religious value system that is the constellation of all one's individual attitudes toward various facets of religion.16

An attitude is composed of affective, cognitive, and behavioral components. Feelings are often referred to as the affective component, thoughts as the cognitive component, and predispositions to act as the behavioral component. Therefore, as pointed out by Edwards17, the term attitude refers to certain regularities of an individual's feelings, thoughts, and predispositions to act toward some aspect of his environment.


Blum and Naylor reported the following in regard to attitudes:

Quite often persons and objects or ideas become associated in the minds of individuals and as a result attitudes become multidimensional and complex.

For most attitudes this complexity is the rule despite the face that attitudes indicate a general and almost over-simplified direction toward favor or disfavor. It should be remembered that the constituent parts of an attitude contributing to this generalization are never as logical to the observer as they are to the holder of the attitude.

Attitudes are not always a function of degree or amount of knowledge about the object of the attitude. Justifications of attitudes we hold are often a function of the rationalizations we use to justify the knowledge, or lack of it, we have on almost any topic.\textsuperscript{18}

Every individual has attitudes which allow him to respond positively or negatively to people, objects, or ideas. Apprentice education is a concept or idea involving the training of youth for skilled employment. In reality apprenticeships exist in an environment involving objects and people. Most educational personnel can be expected to have attitudes toward apprentice education. The direction of apprentice education in the curriculum of the secondary classroom and its place in the public school system of Ohio

depends upon the attitudes of such individuals and the general public as a whole and their influence on the public school system.

Attitudes held by secondary educational personnel on the issue of their direct participation in the pre-apprentice educational scene are difficult to secure from the literature. There is, however, a strong feeling from vocational educators such as the late Alfred Drew, Grant Venn, and others for an outreach into the pre-apprenticeship field.

As educators we hold attitudes favorable to our own sector of the educational spectrum. It is therefore in our interest to seek out references that relate to how educators view apprenticeship education and to what value they place upon it.

Brunner, aptly summarizes the task with a short statement on attitudes

The strength of an attitude and the needed external conditions for it to be expressed in action can be determined only by research.

A brief summary of the literature most closely related to this investigation shows several items of genuine concern:

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(1) It is apparent that little information about apprentice education is being presented to young people in secondary and/or vocational schools in the United States.

(2) The need for more emphasis on apprenticeship education will increase as labor and industry increase their requirements for entry into skilled occupations.

(3) The responsibility for providing students with information and guidance about apprenticeship education rests with the personnel connected with secondary education.

In light of the above concerns, it seems important to determine the attitudes toward the apprentice system held by educators in the State of Ohio, in order that a solution to the above problems might be found.
CHAPTER III

PROCEDURE

The research and related literature reviewed in the preceding sections serves as a rationale for a study of attitudes toward apprenticeship education. More specifically, they support the need for a study of the attitudes held by vocational instructors (teachers) and guidance counselors who bear responsibility for the supervision or planning of vocational programs toward apprenticeship education. One of the major studies upon which that perspective is based is a study completed in 1964 by Ralph C. Wenrich and Robert J. Crowley\(^1\) under a grant from the Office of Education, U. S. Department of Health, Education, and Welfare. As part of that study students, parents, and school personnel were asked to respond to a series of attitude statements regarding vocational education. The results clearly showed that the study instrument was successful in acquiring the data needed to assess attitudes toward vocational education.

Another aspect of the Wenrich\textsuperscript{2} study that was of particular interest was the two-part survey instrument which they employed. The first part of that instrument was designed to gather information concerned with the occupation, age, sex, length of residence in the community, and educational level of the respondent. The second part was used to collect data which effectively illustrated the pertinent personal attitudes of the administrators, students, and parents responding toward vocational education.

A later series of studies conducted in 1968 and 1971 by Divita\textsuperscript{3} built upon the instruments and general data collection strategy, developed by Wenrich. Those investigations were designed to survey the attitudes held by school administrators and employers and labor leaders toward vocational education in the secondary schools of West Virginia. The studies by Divita, as well as that by Wenrich, serve to describe the basic research paradigm that was used in the present study to assess the selected groups' attitudes toward apprenticeship education.

\textsuperscript{2}Ibid, p. 142.

Study Design

The study was specifically designed as an attitudinal survey that utilized descriptive research methodology. It was assumed that such an approach would yield results that meaningfully and reliably allow for the direct analysis of the stated study hypotheses.

An initial step in the study dealt with examining the importance of apprentice education as an adjunct function of vocational education. Once the relative importance of such a function was identified, a review of the literature was conducted to determine the possible influence guidance counselors and vocational educators could conceivably have on the selection of a student's choice, either of pre-apprentice studies or the eventual entrance into an apprentice program.

Utilizing, as a starting point, the set of attitudinal statements related to vocational education developed by Wenrich and later revised by Divita, a questionnaire was constructed to assess the attitudes toward apprenticeship education held by selected secondary educational personnel in the State of Ohio. Questions soliciting additional demographic data served to help more accurately identify the school settings and educational populations surveyed.
Utilizing the indicated survey instrument, the study samples were initially surveyed by mail. Their completed instruments represented the base for interpreting the attitudes and perceptions of selected secondary educational personnel in Ohio toward apprenticeship education.

The data thus obtained were analyzed, coded, processed, and the results used to test the null hypothesis listed in Chapter I.

**Population and Sample**

As indicated above, two distinct populations within the secondary education structure of the State of Ohio were surveyed during the study. Those populations were as follows:

1. Guidance counselors who are engaged in active counseling in either comprehensive secondary high schools or joint and area vocational schools in the State of Ohio.

2. Vocational instructors (teachers) employed in comprehensive secondary high schools and joint and area vocational schools in the State of Ohio.

More specifically, the instructors considered were employed in vocational areas that closely parallel the three major apprenticeable craft (skill) areas of Construction, Metals and Graphic Arts (printing). As
indicated by Nelson, these three major areas effectively employ 87.5 percent of all registered apprentices.4

A simple random sampling technique was employed to select the samples required for the study. First, the sampling frame was all of the vocational instructors (teachers) who conduct classes in construction trades, metal working and graphic arts on the secondary level in the State of Ohio and who were listed in the 1974-75 Trades and Industry Personnel Directory published by the State of Ohio Education Department. The corresponding sampling frame for the guidance counselors was the listing, The Directory of Ohio School Counselors,6 also published by the State of Ohio Education Department.

Since the commonly used confidence intervals for educational research are .90, .95 and .99, it was assumed that the most appropriate level for this study would be .95 with a desired precision of ± five percent.


5Division of Vocational Education, State Department of Education, Trades and Industry Directory, Faculty and Staff, Columbus, Ohio, 1974.

6Division of Guidance and Testing, State Department of Education, Directory of Ohio School Counselors, Columbus, Ohio, 1974.
Given the preceding assumption, the sampling frame, The Directory of Ohio School Counselors,7 and the tables from The Appendix to Sampling and Statistical Handbook for Surveys in Education,8 it was determined that a 16 percent sample of all listed secondary guidance counselors in the state would be needed for the study. In a similar manner, it was determined that a 42 percent sample would need to be drawn from the second sampling frame in order to secure a representative group of vocational instructors (teachers) involved in or conducting secondary high school vocational classes either in comprehensive high schools or joint and area vocational schools.

Those different percentages (or sampling fractions) as they relate to the two populations under consideration in the present study are more concretely explained in Table 1.

The actual procedure used to draw those required samples involved the following steps. First, a starting point was randomly selected from a page in the Rand Corporation publi-

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7 State of Ohio, op. cit.

cation, *A Million Random Digits*. From this starting point in *The Directory of Ohio School Counselors* every seventh name was selected until the sample of 322 counselors was completed. Then a second random starting point was used to locate a starting point in the *1974-75 Trades and Industry Personnel Directory*.

Following a procedure similar to that employed with the counselors, the required random sample of 217 vocational instructors was identified.

<table>
<thead>
<tr>
<th>Educational Position</th>
<th>State Total</th>
<th>Required Sample Size</th>
<th>Required Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidance Counselors</td>
<td>2002</td>
<td>322</td>
<td>16</td>
</tr>
<tr>
<td>Vocational Instructors</td>
<td>521</td>
<td>217</td>
<td>42</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>2543</td>
<td>539</td>
<td></td>
</tr>
</tbody>
</table>


10State of Ohio, op. cit.

11State of Ohio, op. cit.
Instrumentation

A survey questionnaire was developed to collect the data from the participants in the study. (See Appendix B.) That instrument consisted of three sections. Part I was comprised of a series of questions describing the respondents' educational positions and school settings. Part II was comprised of a series of questions designed to secure information describing the respondents' work experiences and educational backgrounds. Part III was comprised of 33 "items of information" relevant to apprenticeship education. The study sample responded to each of those 33 items on a five point Likert scale ranging from strongly agree to strongly disagree.

The specific independent variables for the study operationally defined using this instrument were as follows:

1. area of educational specialty, counselor or vocational instructor
2. prior participation in an apprenticeship program
3. location of school setting, urban or rural
4. age
5. educational attainment (e.g. B.A.)
6. involvement in teaching apprentice courses
7. involvement in teaching pre-apprentice courses
The dependent variables, as specified in the 4 initial study hypotheses, and operationally defined in terms of subsets of the 33 items included in Part III of the questionnaire were as follows:

1. **Attitude toward the economic value of apprenticeship training**, which was defined by accumulating responses across the following items:

   (a) Apprentice education prepares students for many jobs which have a promising future.

   (b) Apprentice education is beneficial to the community.

   (c) Graduates of apprentice programs are economically successful.

   (d) Apprentice training is one of the best ways for an economically deprived individual to break the poverty cycle.

2. **Attitude toward the apprenticeship program**, which was defined by accumulating responses across the following items:

   (a) Apprentice training is an excellent means for post-high school age youth to prepare for an occupation.

   (b) Apprentice training programs do little to prepare trainees for advancement in an occupation.

   (c) Apprentice education leads to higher education (colleges, technical training) after high school.
(d) Entering an apprentice training program hinders students from participation in other advanced education after high school.

(e) Apprentice education is generally not selected by the intellectually capable student.

(f) The opportunities of apprentice training should be made more widely known to students.

(g) Apprentice education should be encouraged more among all high school students.

(h) Apprentice training usually attracts individuals with low motivation.

(i) Apprentice education courses prepare students for too narrow a scope of training.

(j) Apprentice education can lead only to those jobs which are not intellectually exciting.

(k) Apprentice training is mostly for students who are unable to perform well in school.

3. Attitude toward the need to promote apprentice education within the boundaries of the public school system, which was defined by accumulating responses across the following items:

(a) Pre-apprentice education should be offered in our school.

(b) All students would profit from having some pre-apprentice training while in high school.

(c) There is little value in offering pre-apprentice education in high school because of the immaturity of students.

(d) Pre-apprentice education should be expanded in my school district.

(e) There should be money set aside in the school budget for pre-apprentice courses.
(f) Pre-apprentice education would be more meaningful to individuals if it were offered only at the post-secondary level (community college, technical institutes, etc.).

4. **Attitude toward the use of public school facilities to conduct pre-apprentice programs**, which was obtained by accumulating responses across the following 6 items:

(a) Pre-apprentice education should be offered in our school.

(b) All students would profit from having some pre-apprentice training while in high school.

(c) There is little value in offering pre-apprentice education in high school because of the immaturity of students.

(d) Pre-apprentice education should be expanded in my school district.

(e) There should be money set aside in the school budget for pre-apprentice courses.

(f) Pre-apprentice education would be more meaningful to individuals if it were offered only at the post secondary level (community college, technical institutes, etc.)

Following its initial development the survey instrument was pilot tested by research specialists and selected graduate students from The Center for Vocational Education at The Ohio State University. Their comments and reactions to the instrument and its design were most candid and helpful. The instrument was revised based on the results of that pilot test.
After the revised instrument was completed by the survey respondents and the resulting data were readied for analysis, the psychometric properties of the indicated dependent variables were studied in greater detail. The first such assessment dealt with their respective content validities.

Although several, more empirical methods exist for determining if an instrument measures what it is claimed to measure, those methods all depend upon the existence of data other than a single set of scores such as was generated during the current survey. Since an additional set of data was not collected, those methods could not be employed. Therefore, the validity of the attitudes identified were assessed in terms of the perceptions of experienced professionals employed at The Center for Vocational Education, and in terms of the findings reported in the Wenrich and Crowley study mentioned earlier.

More specifically, those individuals selected from The Center for Vocational Education were assumed to possess expertise in matters related to vocational and apprentice education. This group of individuals reviewed both the survey instrument and null hypotheses. Then, they grouped the instrument into the four selected attitudes that constitute the dependent variables identified in the study's null hypotheses.
At the same time the respondent data were used to estimate the reliabilities of the various dependent variables. In that regard the following perspective was adopted.

Reliability concerns the extent to which measurements are repeatable and one of the indices of reliability that can be computed for the obtained data is the internal consistency index called coefficient alpha. Basically, alpha is a measure of the extent to which the items in an instrument measure the same attitude.\(^\text{12}\)

\[
\alpha = \left( \frac{K}{K-1} \right) \cdot \sqrt{\frac{\sum \text{item variance}}{\text{variance for total score}}}, \text{ where}
\]

\(K\) = the number of items upon which the total score is based.

Supplementary descriptive information to the Alpha Coefficient was generated by calculating the Pearson product moment correlations between each dependent variable and the respective sub-sets of items from which they were derived.

**Data Collection**

The actual conducting of the survey was undertaken by mailing each sample respondent a coded questionnaire, a cover letter, and a self-addressed stamped envelope. That initial mailing was completed on March 7, 1975. A second mailing consisting of a questionnaire, cover letter, self-

addressed stamped envelope, and a reminder flyer printed in a bright color to attract attention. This mailing was completed on April 4, 1975 (see Appendix B). The envelope used in both instances had large bold letters printed across one end to stimulate interest and attract attention.

On April 18, 1975, a ten percent random sample was drawn from the 77 non-respondents using a table of random numbers and a telephone survey initiated. A total of eight secondary vocational instructors and guidance counselors was telephoned and asked to respond to the 49 items comprising the survey questionnaire (see Appendix B). In addition to responding to the questions, each non-respondent was queried regarding his/her failure to respond to the survey questionnaire. Four of the eight indicated that the press of school business diverted their attention from the questionnaire, but readily answered the questions via the telephone, and further indicated they would return the instrument. One individual felt that his involvement with the study would endanger his employment as a guidance counselor. A second guidance counselor requested a 50 dollar fee to cover the professional time needed to answer the instrument. The remaining two individuals did not wish to answer the questions over the telephone but indicated that they would mail in the instrument.
This telephone survey generated an additional seven responses. A statistical comparison of the telephone responses with the total set of mailed responses was performed using t-tests. There was no significant difference in the responses of these two groups. Therefore, the seven returns were combined with the other 469 responses, to raise the overall response level to 476.

As shown in Table 2, the survey generated a total of 476 responses or 88.13 percent of the 539 secondary school personnel originally selected via the respective random samples. Eleven instruments were deemed unusable due to incomplete data or the outright refusal to participate in the study.

<table>
<thead>
<tr>
<th>Educational Position</th>
<th>Original Sample N</th>
<th>Sample Returns N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidance Counselors</td>
<td>322</td>
<td>275</td>
<td>85.4</td>
</tr>
<tr>
<td>Vocational Instructors</td>
<td>217</td>
<td>190</td>
<td>87.5</td>
</tr>
<tr>
<td>Unusable Returns</td>
<td>0</td>
<td>11</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>539</strong></td>
<td><strong>476</strong></td>
<td><strong>88.13</strong></td>
</tr>
</tbody>
</table>
Preparation of the Data

In order to facilitate the preparation of the data for processing, the survey instrument was coded with a computer digit at the end of each response position. As they were returned, the data were transferred onto IBM data cards. The actual numerical value (1-5) for each response could thus be transferred directly. Missing data were assigned a value of three (3). A positive identification was made of every respondent by the use of a three-digit code and cross-tabulation via three-by-five address cards. Included in the unusable data were four questionnaires that were marked "other" with written in qualification that they were from newly appointed administrations, these data were therefore omitted from the subsequent analyses. The requisite data processing was performed at the Computer Center of The Ohio State University.

Analysis of Data

The data collected for this study ranged from being nominal to interval in nature. Generally parametric statistical methods were used to relate those empirical data in terms of the stated study hypothesis. The exact procedures utilized varied according to the requirement of each of those specified hypothesis.
The first major analytical undertaking dealt with the empirical verification of the validity of results described earlier. More specifically the intent was to verify the groupings of items offered by the "experts" selected from The Center for Vocational Education. The exact procedure used was a principal axis factor analysis approach.\(^1\)

The second major set of analyses dealt with relating each of the dependent variables and their respective independent variables as spelled out via the seven study hypothesis. An analysis of variance approach was used to test for differences among the group means related to each of those hypotheses. For example, Hypotheses One dealt with the relationship between educational position (levels: instructors and guidance counselors) and attitudes concerning the economic value of apprenticeship education. The acceptance or non-acceptance of this hypothesis was based directly upon the results of a one-way analysis of variance as reflected in terms of the associated F test for significance.

In the case of Hypothesis Seven, further analysis was needed to establish a comparative ranking of the three groups involved. The Scheffe' method of multiple comparisons

was used to determine this rank order. According to Glass and Stanley, to establish a comparative ranking using the Scheffe' method, a confidence interval around the estimate of a contrast is constructed as follows:

\[ \hat{\psi} \pm \hat{\sigma} \sqrt{\frac{(J-1)_{1-\alpha}}{F_{J-1, N-J}}} \]

where

- \( \hat{\psi} \) estimate of the contrast,
- \( J \) number of groups dealt with (categories),
- \( \hat{\sigma} \) estimate of the standard deviation for the contrast,
- \( \hat{\sigma} \) estimate of the standard deviation of the estimate, contrast
- \( N \) total sample size, and
- \( 1-\alpha \) probability of committing an error

**Study Delimitations and/or Limitations**

The ability to generalize these data to similar educational facilities or beyond the State of Ohio is limited due to the nature of the research sample selection procedures. The selection of guidance counselors and vocational instructors was not an indication that they alone, within the educational establishment, were the most knowledgeable on apprenticeship or the apprentice system. They were selected because of the frequency of their contact with students and their potential to affect the students' future occupational and educational choices.

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Summary

This section dealt with the operational aspects of the study: the development and content validation of the instrument, identification of the sample, procedures for collecting data, preparation of the data, and completion of the analysis.
CHAPTER IV

DATA ANALYSIS AND FINDINGS

As previously indicated, this study was a survey of the specific attitudes toward the apprenticeship system held by the guidance counselors and vocational instructors who are employed by public secondary schools in the State of Ohio. The objectives of the study were: (1) to identify areas of agreement and disagreement between guidance counselors and vocational instructors regarding apprenticeship education; and (2) to determine what variables are associated with the attitudes of guidance counselors and vocational instructors toward apprenticeship education.

The analyses conducted in order to address those objectives were based on data from 275 guidance counselors and 190 vocational instructors who represented the major study groups. A subgrouping of the vocational instructors by subject area was used in order to determine the specific attitudes toward the apprenticeship system held by the three major divisions of the apprenticeable trades—Construction, Metals, and Graphic Arts. The specific analysis
and findings obtained are presented separately for each of the study hypotheses.

**Item-by-Item Results**

Prior to engaging in the evaluation of each of the seven study hypotheses, a descriptive analysis of the samples' responses to the questionnaire items was initiated. The results of that effort are summarized in Table 3. More specifically, that table lists all 33 attitude statements in the actual order in which they were used on the survey questionnaire along with the related descriptive results.

To aid the reader's interpretation of the results, the responses are identified as: (1) guidance counselors, and (2) vocational instructors. In addition, the table contains the five point Likert scale as used in the original instrument. The choices were: SA, strongly agree with the statement; A, agree with the statement; U, undecided, no knowledge, or decline to answer; D, disagree with the statement; SD, strongly disagree with the statement. The N of 465 was kept as a constant by programming the computer to treat all missing data as a U (undecided) response.
### TABLE 3
FREQUENCY RESPONSES BY GUIDANCE COUNSELORS AND VOCATIONAL INSTRUCTORS IN RESPONSE TO 33 ATTITUDINAL STATEMENTS

<table>
<thead>
<tr>
<th>Position in Instrument</th>
<th>Statement</th>
<th>*</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>Panel Classification</th>
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<td>The apprentice pay scale is lower when compared to local industries that employ 18 to 21 year old youths.</td>
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*1. Guidance Counselors
2. Vocational Instructors
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<td>Apprentice education leads to higher education (colleges, technical training) after high school.</td>
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<td>Trade unions are the most common source of information on apprentice education.</td>
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<td>Pre-apprentice education should be expanded in my school district.</td>
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<td>Graduates of apprentice programs normally remain in the trade for which they had trained.</td>
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<td>Apprentice education can lead only to those jobs which are not intellectually exciting.</td>
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<td>Apprentice training is mostly for students who are unable to perform well in school.</td>
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<td>Pre-apprentice education would be more meaningful to individuals if it were offered only at the post-secondary level (community college, technical institutes, etc.).</td>
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<td>Journeymen should be utilized as a resource to aid schools with pre-apprentice programs.</td>
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Statistical Results

On the following pages the statistical findings are presented both graphically and in tabular form. Attitudinal groupings are correlated with the individual hypothesis they represent. Scores of central tendency, correlations, figures, frequency polygons, and statistical results are presented to justify the results found toward specific attitudes. The .95 confidence level was selected to determine acceptance or non-acceptance of each hypothesis.

Hypothesis One

There was no significant difference in the attitude held by vocational instructors and guidance counselors toward the economic value of apprenticeship programs.

The independent variable associated with the hypothesis was the respondents' occupational position within the school system, either as a guidance counselor or vocational instructor. Such information was secured from the instrument via a self-selection checkoff. The dependent variable was a newly created criterion variable identified as an attitude toward the economic value of apprenticeship. The criterion variable was created from the grouping of appropriate statements listed earlier in Chapter III and shown in Table 4.

Table 4 contains the Pearson correlation coefficient $r$ for each statement as it relates to the newly created criterion variable. For the convenience of the reader the
actual placement of each statement as listed in the study instrument is presented on the left side of the table. Included at the base of the table is the Alpha coefficient for this grouping of statements.

TABLE 4
ATTITUDINAL VARIABLE ON THE ECONOMIC VALUE OF APPRENTICESHIP*

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<tr>
<td>119</td>
<td>Apprentice education prepares students for many jobs which have a promising future.</td>
<td>0.6878</td>
</tr>
<tr>
<td>36</td>
<td>Apprentice education is beneficial to the community.</td>
<td>0.7138</td>
</tr>
<tr>
<td>37</td>
<td>Graduates of apprentice programs are economically successful.</td>
<td>0.7764</td>
</tr>
<tr>
<td>38</td>
<td>Apprentice training is one of the best ways for an economically deprived individual to break the poverty cycle.</td>
<td>0.7173</td>
</tr>
</tbody>
</table>

Alpha Coefficient = .6881

*The correlation table in its entirety is presented in Appendix D.

Figure 1 presents a histogram depicting the observed cumulative scores for the total sample on the criterion variable, attitude toward the economic value of apprenticeship. Descriptive statistics are also presented. The
Cumulative Score on the Items

Mean = 16.501  Standard Deviation = 1.890
Mode = 16.000  Range = 9.000
Median = 16.402  N = 465
Variance = 3.574

Guidance Counselors = — — — — —

Vocational Instructors = — — — — —

Figure 1. Numeric Description of the Variable, Attitude Toward Economic Value of Apprenticeship Education
number of cases is plotted along the vertical axis (ordinate). The cumulative score is plotted along the horizontal base line (abscissa). The cumulative score limits were arrived at by the multiplication of the number of statements involved times five. For Figure 1 the maximum score is equal to 20. Scores of central tendency are listed to aid the readers interpretation of the results. Frequency polygons drawn to illustrate the responses of both study groups are superimposed upon the histogram.

To test Hypothesis One for a significant difference between the $\bar{X}$'s of the study populations a one way analysis of variance was computed. An $f$ test using the results of the analysis of variance was used to determine significance. Table 5 illustrates the results of the analysis and $f$ test.

**Table 5**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position (between)</td>
<td>1</td>
<td>26.57</td>
<td>26.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error (within)</td>
<td>464</td>
<td>1631.72</td>
<td>3.52</td>
<td>7.54</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Total</td>
<td>465</td>
<td>1658.29</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This statistical test was directly concerned with detecting differences between two group means. The means as computed by the computer program indicated that the vocational instructors had a $\bar{X}$ of 16.770 and the guidance counselors a $\bar{X}$ of 16.287. The significant $f$ value of 7.54 resulted in a non-acceptance of the null hypothesis. The vocational instructors were statistically more positive in their attitude toward the economic value of apprenticeship.

**Hypothesis Two**

There is no significant difference in attitudes toward apprenticeship programs held by Ohio educational personnel who are considered to be located in urban areas and those located in rural areas.

The independent variable associated with the hypothesis was the school location of the respondents. School locations for the purpose of this study were determined by each individual respondent who indicated an urban or rural school location on the instrument. The dependent variable was a newly created criterion variable identified as an attitude toward apprenticeship education and the apprentice system. The criterion variable was created from the grouping of appropriate statements listed earlier in Chapter III and shown in Table 6.

Table 6 contains the Pearson correlation coefficient $r$ for each statement as it relates to the newly created criterion variable. As in Hypothesis One the actual place-
### TABLE 6
ATTITUdINAL VARIABLE ON THE GENERAL ATTITUDE TOWARD APPRENTICESHIP PROGRAMS AND THE APPRENTICE SYSTEM*

<table>
<thead>
<tr>
<th>Position in Instrument</th>
<th>Statement</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Apprentice training is an excellent means for post-high school age youth to prepare for an occupation.</td>
<td>0.4960</td>
</tr>
<tr>
<td>25</td>
<td>Apprentice training programs do little to prepare trainees for advancement in an occupation.</td>
<td>0.5562</td>
</tr>
<tr>
<td>26</td>
<td>Apprentice education leads to higher education (colleges, technical training) after high school.</td>
<td>0.4687</td>
</tr>
<tr>
<td>27</td>
<td>Entering an apprentice training program hinders students from participation in other advanced education after high school.</td>
<td>0.5409</td>
</tr>
<tr>
<td>32</td>
<td>Apprentice education is generally not selected by the intellectually capable student.</td>
<td>0.5026</td>
</tr>
<tr>
<td>34</td>
<td>The opportunities of apprentice training should be made more widely known to students.</td>
<td>0.3622</td>
</tr>
<tr>
<td>39</td>
<td>Apprentice education should be encouraged more among all high school students.</td>
<td>0.4656</td>
</tr>
<tr>
<td>40</td>
<td>Apprentice training usually attracts individuals with low motivation.</td>
<td>0.5193</td>
</tr>
<tr>
<td>41</td>
<td>Apprentice education courses prepare students for too narrow a scope of training.</td>
<td>0.6051</td>
</tr>
<tr>
<td>45</td>
<td>Apprentice education can lead only to those jobs which are not intellectually exciting.</td>
<td>0.6032</td>
</tr>
<tr>
<td>46</td>
<td>Apprentice training is mostly for students who are unable to perform well in school.</td>
<td>0.5747</td>
</tr>
</tbody>
</table>

Alpha Coefficient = .7624

*The correlation table in its entirety is presented in Appendix D.
ment of each statement as listed in the study instrument is presented on the left side of the table. Also included at the base of the table is the Alpha coefficient for this grouping of statements.

Figure 2 presents a histogram depicting the observed cumulative scores for the total sample populations on the criterion variable, attitude to apprenticeship education, and the apprentice system. Descriptive statistics are also presented. As in the case of Figure 1, the frequencies and cumulative scores are represented on similar axis.

The cumulative score limits were arrived at by the multiplication of the number of statements involved times five. For Figure 2, the maximum score is equal to 55. Scores of central tendency are listed to aid the readers interpretation of the results. Frequency polygons drawn to illustrate the responses of both study groups are superimposed upon the histogram.

To test Hypothesis Two for a significant difference between the $\bar{X}$'s of the study populations, a one way analysis of variance was computed. An f test using the results of the analysis of variance was used to determine significance.
Table 7 illustrates the results of the analysis and f test.

**TABLE 7**

**SUMMARY OF THE ANALYSIS OF VARIANCE OF URBAN-RURAL SETTING UNDER THE CRITERION VARIABLE**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting (between)</td>
<td>1</td>
<td>17.98</td>
<td>17.98</td>
<td>0.87</td>
<td>n.s.</td>
</tr>
<tr>
<td>Error (within)</td>
<td>464</td>
<td>9580.35</td>
<td>20.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>465</td>
<td>9598.33</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Not significant

The statistical test was directly concerned with detecting differences between two group means. The means as computed by the computer program indicated that the urban population had a $\bar{X}$ of 42.796 and the rural population a $\bar{X}$ of 42.386. The non-significant $f$ value of 0.87 resulted in acceptance of the null hypothesis. There is no apparent differences in attitude toward apprenticeship education or the apprentice system by virtue of the respondent's school location either urban or rural.

**Hypothesis Three**

There was no significant difference in the attitudes toward apprentice programs held by Ohio educational personnel who have completed an apprenticeship program and those who started but did not complete an apprentice program.
The independent variable associated with the hypothesis was the experiences a respondent had as an apprentice. This experience has two levels, completion of an apprenticeship program or non-completion for some unknown personal reason. Such information was secured from the instrument via a self-selection checkoff using item 14 from the instrument.

**Item 14**

Have you ever participated in an apprenticeship?

(1) Yes, started but did not complete the apprenticeship
(2) Yes, completed the apprenticeship
(3) No

The criterion variable was created from the grouping of appropriate statements listed earlier in Chapter III and shown in Table 6.

As described earlier, Table 6 contains the Pearson correlation coefficient $r$ for each statement as it relates to the newly created criterion variable. Included at the base of the table is the Alpha coefficient for this grouping of statements.

Figure 2 presents a histogram depicting the observed cumulative scores for the total sample population, attitude toward apprenticeship education and the apprentice system. Descriptive statistics are also presented.
Figure 2. Numeric Description of the Variable, Attitude Toward Apprenticeship Education and Apprentice System
To test Hypothesis Three for a significant difference between the $\bar{X}$'s of the self-selected study populations, via item 14, a one way analysis of variance was computed. An $f$ test using the results of the Analysis of Variance was used to determine if Hypothesis Three had reached an acceptable level of significance. Table 8 illustrates the results of the analysis and $f$ test.

**TABLE 8**

**SUMMARY OF THE ANALYSIS OF VARIANCE OF APPRENTICESHIP COMPLETION UNDER THE CRITERION VARIABLE**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion (between)</td>
<td>1</td>
<td>10.98</td>
<td>10.98</td>
<td>0.595 *</td>
<td>n.s.</td>
</tr>
<tr>
<td>Error (within)</td>
<td>113</td>
<td>2065.66</td>
<td>18.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>2076.62</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Not significant

This statistical test was directly concerned with detecting differences between two group means. The non-significant $f$ value of 0.595 resulted in the acceptance of the null hypothesis. The means computed by the computer program indicated that respondents who had started but failed to complete an apprenticeship had a $\bar{X}$ of 43.600. Respondents who had completed an apprenticeship had a $\bar{X}$ of 44.415. The results indicate that there is no statistical difference between the two groups.
Hypothesis Four

There is no significant difference in the attitudes toward apprentice programs held by Ohio educational personnel who have completed an apprentice program and those who have not experienced an apprentice program.

The independent variable associated with the hypothesis was the respondent's personnel experience with apprentice­ship programs. The levels to be considered are (1) the respondent completed an apprenticeship, and (2) the respondent did not enter an apprentice program. Such information was secured via a self-selection checkoff using item 14 from the instrument.

**Item 14**

Have you ever participated in an apprenticeship?

(1) Yes, started but did not complete the apprenticeship
(2) Yes, completed the apprenticeship
(3) No

The criterion variable was created from the grouping of appropriate statements listed earlier in Chapter III and shown in Table 6.

As described earlier, Table 6 contains the Pearson correlation coefficient \( r \) for each statement as it relates to the newly created criterion variable. Included at the base of the table is the Alpha coefficient for this grouping of statements.
Figure 2 presents a histogram depicting the observed cumulative scores for the total sample on the criterion variable, attitude toward apprenticeship education and the apprentice system. Descriptive statistics are also presented.

To test Hypothesis Four for a significant difference between the $\bar{X}$'s of the self-selected study populations, via item 14, a one way analysis of variance was computed. An $f$ test using the results of the analysis of variance was used to determine if Hypothesis Four had reached an acceptable level of significance. Table 9 illustrates the results of the analysis and $f$ test.

**TABLE 9**

SUMMARY OF THE ANALYSIS OF VARIANCE OF APPRENTICE EXPERIENCE OR LACK OF UNDER THE CRITERION VARIABLE

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experienced (between)</td>
<td>1</td>
<td>391.58</td>
<td>195.79</td>
<td>10.13</td>
<td>.05</td>
</tr>
<tr>
<td>Error (within)</td>
<td>444</td>
<td>8599.87</td>
<td>19.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>445</td>
<td>8991.45</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The statistical test was directly concerned with detecting differences between two group means. The means computed by the computer program indicated that respondents
who had finished an apprenticeship had a $\bar{X}$ of 44.415. Respondents who had never experienced an apprenticeship program had a $\bar{X}$ of 42.119.

The significant $f$ value of 10.13 resulted in a non-acceptance of the null hypothesis. The results indicate that there is a significant statistical difference in attitude between respondents who answered item 14. The results indicate that the vocational instructors were statistically more positive in their attitude toward apprenticeship education and the apprentice system.

**Hypothesis Five**

There is no significant difference in attitudes held by Ohio vocational instructors (teachers) and guidance counselors toward the conducting of pre-apprentice training programs in secondary school facilities.

The independent variable associated with the hypothesis was the occupational position within the school system, either as a guidance counselor or vocational instructor.

Such information was secured from the instrument via a self-selection checkoff. The dependent variable was a newly created criterion variable from the grouping of appropriate statements listed earlier in Chapter III and shown in Table 10.

Table 10 contains the Pearson correlation coefficient $r$ for each statement as it relates to the newly created criterion variable.
For the convenience of the reader, the actual placement of each statement as listed in the study instrument is presented on the left side of the table. Included at the base of the table is the Alpha coefficient for this grouping of statements.

TABLE 10

ATTITUDINAL VARIABLE ON THE ATTITUDE TOWARD THE USE OF PUBLIC FACILITIES TO CONDUCT PRE-APPRENTICE PROGRAMS*

<table>
<thead>
<tr>
<th>Position in Instrument</th>
<th>Statement</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Pre-apprentice education should be offered in our school.</td>
<td>0.7860</td>
</tr>
<tr>
<td>23</td>
<td>All students would profit from having some pre-apprentice training while in high school.</td>
<td>0.6279</td>
</tr>
<tr>
<td>29</td>
<td>There is little value in offering pre-apprentice education in high school because of the immaturity of students.</td>
<td>0.6504</td>
</tr>
<tr>
<td>30</td>
<td>Pre-apprentice education should be expanded in my school district.</td>
<td>0.7144</td>
</tr>
<tr>
<td>33</td>
<td>There should be money set aside in the school budget for pre-apprentice courses.</td>
<td>0.7325</td>
</tr>
<tr>
<td>47</td>
<td>Pre-apprentice education would be more meaningful to individuals if it were offered only at the post-secondary level (community college, technical institutes, etc.)</td>
<td>0.6107</td>
</tr>
</tbody>
</table>

Alpha Coefficient = .7610

*The correlation table in its entirety is presented in Appendix D.
Figure 3 presents a histogram depicting the observed cumulative score for the total sample on the criterion variable, attitude toward the use of public facilities to conduct pre-apprentice programs. Descriptive statistics are also presented. The cumulative score limits were arrived at by the multiplication of the number of statements involved times five. For figure 3 the maximum score is 30. Scores of central tendency are listed to aid the readers interpretation of the results. Frequency polygons drawn to illustrate the responses of both study groups are superimposed upon the histogram.

To test Hypothesis Five for a significant difference between the $\bar{X}$'s of the study populations, a one way analysis of variance was computed. An $t$ test using the results of the analysis of variance was used to determine if Hypothesis Five had reached an acceptable level of significance. Table 11 illustrates the results of the analysis and $t$ test.

<table>
<thead>
<tr>
<th>TABLE 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUMMARY OF THE ANALYSIS OF VARIANCE OF EDUCATION POSITION UNDER THE CRITERION VARIABLE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position (between)</td>
<td>1</td>
<td>484.66</td>
<td>242.33</td>
<td>19.96</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Error (within)</td>
<td>464</td>
<td>5618.79</td>
<td>12.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>465</td>
<td>6103.46</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cumulative Score on the Items

Mean = 22.361
Mode = 24.000
Median = 22.702
Variance = 13.154

Standard Deviation = 3.627
Range = 24.000
N = 465

Guidance Counselors = ________
Vocational Instructors = -----

Figure 3. Numeric Description of the Variable, Attitude Toward The Use of Public Facilities to Conduct Pre-Apprentice Programs
This statistical test was directly concerned with detecting differences between two group means. The means as computed by the computer program indicated that the vocational instructors had a $\bar{X}$ of 23.578, and the guidance counselors a $\bar{X}$ of 21.474. The significant $f$ value of 19.96 resulted in a non-acceptance of the null hypothesis. The vocational instructors were statistically more positive in their attitude toward the use of public facilities to conduct pre-apprentice programs.

Hypothesis Six

There is no significant difference in attitudes held by Ohio vocational instructors and guidance counselors toward the involvement of non-educational personnel as resource individuals to conduct pre-apprentice program.

The independent variable associated with the hypothesis was occupational position within the school system, either as a guidance counselor or vocational instructor. Such information was secured via a self-selection checkoff. The dependent variable was the newly created variable toward the utilization of non-educational personnel to conduct pre-apprentice programs. The criterion variable was created from the grouping of appropriate statements listed earlier in Chapter III and shown in Table 12.
Table 12 contains the Pearson correlation coefficient $r$ for each statement as it relates to the newly created criterion variable. The actual placement of each statement as listed in the study instrument is presented on the left side of the table. Included at the base of the table is the Alpha coefficient for this grouping of statements.

**TABLE 12**

**ATTITUDINAL VARIABLE ON THE UTILIZATION OF NON-EDUCATIONAL PERSONNEL TO CONDUCT PRE-APPRENTICE PROGRAMS***

<table>
<thead>
<tr>
<th>Position in Instrument</th>
<th>Statement</th>
<th>$r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Guidance and counseling resources should include individuals directly involved with apprentice programs.</td>
<td>0.6910</td>
</tr>
<tr>
<td>42</td>
<td>There is a need to maintain a close working relationship between schools and organized labor.</td>
<td>0.7462</td>
</tr>
<tr>
<td>49</td>
<td>Journeymen should be utilized as a resource to aid schools with pre-apprentice programs.</td>
<td>0.7508</td>
</tr>
</tbody>
</table>

Alpha Coefficient = .5598

*The correlation table in its entirety is presented in Appendix D.

Figure 4 presents a histogram depicting the observed cumulative scores for the total sample on the criterion variable, attitude toward the utilization of non-educational personnel to conduct pre-apprentice programs. Descriptive
statistics are also presented. The cumulative score limits were arrived at by the multiplication of the number of statements involved times five. For Figure 4 the maximum score is equal to 15. Frequency polygons drawn to illustrate the responses of both study groups are superimposed upon the histogram.

To test Hypothesis Six for a significant difference between the \( \bar{X} \)'s of the study populations, a one way analysis of variance was computed. An \( f \) test using the results of the analysis of variance was used to determine if Hypothesis Six had reached an acceptable level of significance. Table 13 illustrates the results of the analysis and \( f \) test.

**TABLE 13**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>( F )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position (between)</td>
<td>1</td>
<td>10.52</td>
<td>10.52</td>
<td>4.13</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Error (within)</td>
<td>464</td>
<td>1179.36</td>
<td>2.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>465</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This statistical test was directly concerned with detecting differences between two group means. The means as computed by the computer program indicated that the vocational instructors had a \( \bar{X} \) of 22.441 and the guidance
Cumulative Score on the Items

Mean = 12.634
Mode = 12.000
Median = 12.623
Variance = 2.564

Standard Deviation = 1.601
Range = 11.000
N = 465

Guidance Counselors = __________
Vocational Instructors = ----- 

Figure 4. Numeric Description of the Variable, Attitude Toward Utilization of Non-Educational Personnel to Conduct Pre-Apprentice Programs
counselors a \( \bar{X} \) of 20.231. The significant \( f \) value of 4.13 resulted in a non-acceptance of the null hypothesis. The vocational instructors were statistically more positive in their attitude toward the utilization of non-school personnel to conduct pre-apprentice programs within the school setting.

Hypothesis Seven

There is no significant difference in attitudes held by the instructors of construction trades, metal working, and graphic occupations toward apprentice programs.

The independent variable associated with the hypothesis was the occupational position within the school system. Occupational position is defined by the hypothesis as a vocational instructor in one of three areas. Such information was secured via a self-selection checkoff using items 17 and 18 from the instrument.

**Item 17**

Are you in a vocational education teaching position?

(1) Yes  
(2) No

**Item 18**

If yes, please check one of the three major categories listed below:

(1) Construction  
(2) Metals  
(3) Graphic Arts
The dependent variable was a newly created criterion variable identified as an attitude toward apprenticeship education and the apprentice system. The criterion variable was created from the grouping of appropriate statements listed earlier in Chapter III and shown in Table 6.

Table 6 contains the Pearson correlation coefficient \( r \) for each statement as it relates to the newly created criterion variable. Included at the base of the table is the Alpha coefficient for this grouping of statements. Figure 2 (page 69) presents a histogram depicting the observed cumulative scores for the total sample on the criterion variable, attitude toward apprenticeship education and the apprentice system. Descriptive scores are also presented.

To test Hypothesis Seven for a significant difference between the \( \bar{X} \)'s of the study populations, a one way analysis of variance was computed. An \( f \) test using the results of the analysis of variance was used to determine if Hypothesis Seven had reached an acceptable level of significance. Table 14 illustrates the results of the analysis and \( f \) test.

This statistical test was directly concerned with detecting differences between three group means. The means as computed by the computer program indicated that the con-
struction crafts had a $\bar{X}$ of 43.406; the metal trades a $\bar{X}$ of 45.108; and the graphic arts a $\bar{X}$ of 41.447. The significant $f$ value of 8.112 resulted in a non-acceptance of the null hypothesis. To establish which area was responsible for the greatest degree of positive attitude toward apprenticeship the Scheffe' method of multiple comparisons was calculated. The results of the Scheffe' indicate that the metals sector of the apprenticeable crafts was most in favor of apprenticeships as a training system. The construction crafts were placed second and the graphic arts occupations third.

TABLE 14

SUMMARY OF THE ANALYSIS OF VARIANCE OF THREE MAJOR APPRENTICEABLE TRADES UNDER THE CRITERION VARIABLE

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>$F$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three Major Apprenticeable Trades (within)</td>
<td>2</td>
<td>342.26</td>
<td>171.13</td>
<td>8.112</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>Within Groups (error)</td>
<td>179</td>
<td>3776.11</td>
<td>21.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>181</td>
<td>4118.37</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter IV describes and illustrates the statistical results developed after testing the null hypothesis potulated in Chapter I. The statistical findings indicated that five of the hypotheses were rejected, while two were accepted as tenable. Chapter V reports on the implications that the study has uncovered in regards to apprenticeship education and apprentice programs in general.
CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to identify specific attitudes of guidance counselors and vocational instructors toward specified educational objectives (programs) at the secondary school level within the state of Ohio. More specifically, the objectives of the study included identifying areas of agreement or disagreement between counselors and vocational instructors regarding apprenticeship education and apprentice systems. In addition to areas of disagreement and agreement, another additional objective was determining if guidance counselors and vocational instructors possess a positive attitude toward pre-apprentice programs and the apprentice system. A third major objective was determining what variables were associated with the attitudes of guidance counselors and vocational instructors toward apprenticeship education and the apprentice system.

The sample population for the study consisted of 322 guidance counselors and 217 vocational instructors, selected by a purposive technique. A simple random sampling
technique was used to select the guidance counselors and vocational instructors from separate personnel directories as published by the State of Ohio. Data were collected by the author from March 7, 1975 to April 25, 1975. A response of 476 instruments was obtained, a total of 88.31 percent return of the sample population.

The study design called for the use of descriptive research methodology. A questionnaire was obtained, pilot tested, and modified to assess the attitudes of the population sample. The questionnaire listed a set of 33 attitudinal statements relating to apprenticeship education and the apprenticeship system. Key demographic data were collected to facilitate an accurate identification of the sampled population. A strongly agree--to strongly disagree--five point Likert scale was employed to solicit responses to each of the 33 statements by the participants.

In order to analyze the data statistically, the apprenticeship education and apprentice system statements posed were grouped to form criterion variables. These criterion variables then reflected specific attitudes as classified by a panel of research specialists and graduate students employed at The Center for Vocational Education, The Ohio State University. This panel was selected for their expertise in matters relating to vocational education.
Statistical treatments included a rotating factor analysis and Pearson's correlation coefficient to establish relationships between the attitude statements as identified by the panel and listed on the instrument. A one way analysis of variance was used to establish differences in group means. In this study the .95 confidence level was used. The f test was applied to establish if the confidence level had reached a level of significance. The t test was used to determine if those respondents contacted by telephone differed statistically from respondents who replied by mail. The results of the t test detected no significant difference between telephone and mail respondents. The Scheffe' multiple comparative procedure was utilized to establish rank order differences for Hypothesis Seven.

CONCLUSIONS

The results of this study indicate a very positive attitude toward apprenticeship education and the apprenticeship system as an educational concept. Such a concept was surprisingly strong in its overall strength as displayed by both study groups. However, the vocational instructors were significantly more positive in their attitudes in five of the six hypotheses where the two groups were tested. The difference in degree of positive attitude may be due to vocational instruction familiarity with apprenticeships and the apprentice
system. This display of an overall general positive feeling toward apprenticeship indicates that there are responsible people within the school community who are basically favorable toward such a concept. While such a concept is receiving positive support, the results of several of the instrument statements indicate that the knowledge base of many of the respondents is less than adequate as it relates to the apprentice system. Typical examples lie in the areas of wages and retention of apprentices within programs.

In an attempt to discover if an urban or rural school location influenced the attitude toward apprenticeship programs, a null hypothesis was tested and not rejected. There appears to be no difference in attitude displayed by the study groups toward the apprentice concept by virtue of school location within the state. It had been expected that rural locations would be less favorable toward such a concept. This then highlights the notion that statewide support does exist for apprenticeship education.

Respondents who experienced an incompleted apprenticeship did not possess a statistically significant different attitude than respondents who completed an apprenticeship. There was speculation that individuals who did not complete an apprenticeship would be less positive toward the concept of apprenticeship education. However, the results indicate that those individuals who completed their skill training
via alternative routes, can be expected to contribute
equally positive inputs to their students toward apprentice-
ship education.

When compared with vocational instructors, the study
indicates that guidance counselors do possess a positive
attitude toward the apprenticeship concept. Such an
attitude is valuable to the school community since guidance
counselors are in an excellent position to inform youngsters
of the apprenticeship system and available programs.

The use of public secondary school facilities to con-
duct pre-apprentice and apprentice programs was favorably
endorsed by the study groups. While both groups were in
favor of such a concept, the guidance counselors were
significantly lower in their endorsement. This may be
explainable in that many individuals may question the use of
public supported facilities to conduct what may be viewed as
a non-public function, namely apprentice or pre-apprentice
programs. The results did indicate that vocational
instructors were significantly more positive in their
attitude toward this concept. However, this may indicate
that they view this as an expansion of their role and
prestige within the school system.

The hypothesis related to the use or employment of non-
educational personnel to conduct pre-apprentice programs
within the school system was rejected. The results do
indicate a statistically significant difference in attitude toward such a concept. This finding points up a basic difference in attitude between the study groups toward the use of personnel such as local labor leaders or other community members to present information to the students on a prepared program basis.

Of importance to school personnel is the finding that the most supportive union group to endorse the apprenticeship concept is the metal working trades. This is rather a startling finding since it could be expected that the more visible construction crafts would indicate the highest degree of support. This finding should indicate that the best opportunities for students to enter the apprenticeable trades may be within the industrial trades (CIO) of organized labor.

In summary, the study has demonstrated that the apprenticeship education concept is alive and has positive school community support. Such support, while strong, must be directed into creative channels if students are to receive the benefits of such a concept.

**Recommendations**

The following recommendations are suggested for utilization of this study and for further research in
studies related to apprenticeship opportunities within the secondary school system.

This study dealt only with school districts in the State of Ohio, therefore, it is inappropriate to generalize the findings and conclusions of this particular study beyond these populations. While it is recognized that these findings do not represent or imply cause and effect relationships, the conclusions of this study would seem to support the following recommendations:

1. In-service training should be provided secondary school personnel concerning advantages and disadvantages of apprenticeship programs.

2. School administrators should seek out and promote the cooperation of local labor officials in matters related to apprenticeship programs.

3. Local school communities should institute suitable promotional activities, such as an "Apprentice Week" to generate student awareness of such educational alternatives as apprenticeships.

4. Local school communities should share their student placement needs with local labor and industries as an aid to planning future apprentice programs.
5. The school community, when interested in placing students into apprenticeships, should be aware of the greatest opportunity for potential placement within the industrial unions (CIO).

6. A liaison between local school districts, state departments of education, and labor communities should be initiated to provide realistic information on statewide apprentice opportunities. Such knowledge would aid in statewide planning of pre-apprentice programs.

Recommendations for Further Study

This study indicates how selected secondary school personnel feel about apprenticeship education and the apprentice system in Ohio. The following paragraphs not only describe recommendations for further study based upon the results of this survey, but explain how certain results may be utilized by secondary school personnel.

The present study enjoyed the advantages of a selected sample population who, by their occupational position, could be expected to possess strong positive or negative attitudes toward apprenticeship education. To gain a better understanding of how secondary school personnel may become more responsive to apprenticeships, a
study designed to survey the attitudes held by organized labor toward the school systems is in order. The main focus of such a study should be the image of secondary vocational skill training as viewed by the labor community. This study could provide valid suggestions toward the improvement of secondary vocational education.

In addition to the study of attitudes possessed by organized labor, a study of how parents view apprenticeship training might prove valuable to school educators; for the attitudes of parents could reasonably be expected to shape career plans of their children.

While research of the labor and industrial communities may provide valuable and usable information, there needs to be some positive awareness toward apprenticeships generated within the secondary school system. At present, the apprentice system is viewed by the educational community as a possession of the labor movement. In reality, the educational community has a tremendous potential opportunity in the expansion of the apprentice system. A study could be designed to develop strategies and materials for creating student awareness of the many apprentice opportunities available throughout the State of Ohio. Materials so designed should aid students with intelligent selection of apprenticeships suitable for their career goals.
Summary

Chapters IV and V have displayed an overall positive attitude toward the apprenticeship education and apprentice system. If secondary school personnel are seriously interested in the placement of their students into career opportunities that have excellent futures, then the apprentice system should be further explored and utilized by educators. The high positive attitude can be a useful vehicle to help secondary school personnel remove barriers that have obstructed a dialogue between those who are most interested in students, and those individuals who can provide apprentice opportunities.

As an educational vehicle, apprenticeship education provides an excellent means for students to secure skill training, good wages, and lifelong employment opportunities.
APPENDIX A
Dear

Your assistance is requested in gathering information concerning attitudes toward the apprentice system in Ohio. This survey is being made of selected vocational educators and guidance counselors in the State of Ohio to determine how educators perceive the value of apprentice programs.

You will find a questionnaire enclosed with this letter. A number code has been assigned to the questionnaire to assure that, upon its return, you will not be included in any follow-up program. Please be confident that your identity is protected. All responses will be aggregated and analyzed as group data. A stamped, addressed return envelope is enclosed for your convenience.

I would like to encourage you to respond to the questionnaire promptly, basing your responses on your perceptions and feelings about apprentice education. If you are interested, the results of this study will be available upon your request.

Thank you for your cooperation in this endeavor.

Sincerely,

William J. Petrie
Research Associate
Ohio Apprenticeship Study
FOLLOW-UP REQUEST!!

Ohio Apprenticeship Study

The response to the study by vocational teachers and counselors has been good, but getting your opinion on these questions would make it complete.

Your cooperation in taking time now to complete and mail back this questionnaire would be appreciated.

Thanks,

Bill

William J. Marie

(614) 486-3655
APPENDIX B
OHIO APPRENTICESHIP STUDY

This questionnaire is part of a research project to determine attitudes held by selected Ohio educators toward apprenticeship programs. Your opinions will be most helpful in providing useful information as we examine apprenticeship education in Ohio.

General Information

You are asked to respond to questions in each of three sections of the survey form.

Part One asks nine questions for demographic data.

Part Two seeks your response to seven questions for background data.

Part Three asks for your opinions regarding 33 questions on the apprenticeship system or its programs.

The identification number on this questionnaire will permit us to contact non-respondents, in accordance with standard sampling procedures. The information you provide will not be associated with your name in reporting the results. Your response will be used in an analysis of group data only.
PART ONE: DEMOGRAPHIC DATA

Check the one educational category that best describes your position:

1 ( ) Guidance Counselor  
2 ( ) Instructor (teacher) part-time
3 ( ) Instructor (teacher) full-time  
4 ( ) Other  
5 ( ) Other (please specify)

Please check the school setting in which you spend the majority of your time:

1 ( ) High School (comprehensive)  
2 ( ) High School (area center or joint vocational)  
3 ( ) Post High School (apprenticeship program)  
4 ( ) Other  
5 ( ) Other (please specify)

Does your school offer pre-apprentice instruction? 1 ( ) Yes 2 ( ) No

Do you personally conduct pre-apprentice courses for high school age youth? 1 ( ) Yes 2 ( ) No

Do you personally conduct apprenticeship courses for adults? 1 ( ) Yes 2 ( ) No

The approximate total population of the area served by your school is:

1 ( ) 001-2,499  
2 ( ) 2,500-9,999  
3 ( ) 10,000-50,000  
4 ( ) 50,000-250,000  
5 ( ) 250,000 or more

The approximate student enrollment in the above school is:

1 ( ) 001-499  
2 ( ) 500-999  
3 ( ) 1000-1499  
4 ( ) 1500-1999  
5 ( ) 2000-2499  
6 ( ) 2500 or more

Do you consider the majority of your students to come from an:

1 ( ) Urban location  
2 ( ) Rural location

Your age (please check one):

1 ( ) under 25  
2 ( ) 25 to 29  
3 ( ) 30 to 34  
4 ( ) 35 to 39  
5 ( ) 40 to 44  
6 ( ) 45 to 49  
7 ( ) 50 to 54  
8 ( ) 55 to 59  
9 ( ) 60 or over
PART TWO: BACKGROUND

Have you ever participated in an apprenticeship program?

1 ( ) Yes, started but did not complete the apprenticeship.
2 ( ) Yes, completed the apprenticeship.
3 ( ) No

Are you a journeyman? 1 ( ) Yes 2 ( ) No

if yes, please check the trade(s) you served in:

0 ( ) Bricklayer-Mason
3 ( ) Machinist
6 ( ) Printer-Graphic Arts
1 ( ) Carpenter
4 ( ) Millwright
7 ( ) Sheet metal
2 ( ) Electrician
5 ( ) Plumber-Pipefitter
8 ( ) Tool and Die Maker
9 ( ) Other (please specify)

Are you in a vocational education teaching position?

1 ( ) Yes 2 ( ) No

if yes, please check one of the three major categories listed below:

1 ( ) Construction 2 ( ) Metals 3 ( ) Graphic Arts

Please check your highest level of education:

1 ( ) High School 2 ( ) 2-year post secondary (technical or associate degree)
3 ( ) Bachelors 4 ( ) Masters
5 ( ) Other (please specify)

If a degree holder, please check major field of study for your highest degree:

1 ( ) Secondary education (teaching)
4 ( ) Technical education
2 ( ) Vocational education
5 ( ) Other (please specify)
3 ( ) Guidance and counseling
PART THREE

INSTRUCTIONS: Please read each of the following statements. Circle the term on the right of each statement that most nearly represents your opinion of apprentice education. The terms on the right are defined as follows:

SA = Strongly Agree
A = Agree
U = Undecided
D = Disagree
SD = Strongly Disagree

Apprentice training is an excellent means for post-high school age youth to prepare for an occupation. SA A U D SD 21

The apprentice pay scale is lower when compared to local industries that employ 18 to 21 year old youths. SA A U D SD 22

Apprentice education prepares students for many jobs which have a promising future. SA A U D SD 23

The local labor community does not keep educators informed about apprentice training opportunities. SA A U D SD 24

Guidance and counseling resources should include individuals directly involved with apprentice programs. SA A U D SD 25

Pre-apprentice education should be offered in our school. SA A U D SD 26

All students would profit from having some pre-apprentice training while in high school. SA A U D SD 27

High school counselors have little actual experience with apprentice training programs. SA A U D SD 28

Apprentice training programs do little to prepare trainees for advancement in an occupation. SA A U D SD 29

Apprentice education leads to higher education (colleges, technical training) after high school. SA A U D SD 30
Entering an apprentice training program hinders students from participation in other advanced education after high school. SA A U D SD 31
Trade unions are the most common source of information on apprentice education. SA A U D SD 32
There is little value in offering pre-apprentice education in high school because of the immaturity of students. SA A U D SD 33
Pre-apprentice education should be expanded in my school district. SA A U D SD 34
Special pre-apprentice instruction should be provided to minorities of high school age. SA A U D SD 35
Apprentice education is generally not selected by the intellectually capable student. SA A U D SD 36
There should be money set aside in the school budget for pre-apprentice courses. SA A U D SD 37
The opportunities of apprentice training should be made more widely known to students. SA A U D SD 38
Apprentice programs have little appeal to minority youth. SA A U D SD 39
Apprentice education is beneficial to the community. SA A U D SD 40
Graduates of apprentice programs are economically successful. SA A U D SD 41
Apprentice training is one of the best ways for an economically deprived individual to break the poverty cycle. SA A U D SD 42
Apprentice education should be encouraged more among all high school students. SA A U D SD 43
Apprentice training usually attracts individuals with low motivation.  

Apprentice education courses prepare students for too narrow a scope of training.  

There is a need to maintain a close working relationship between schools and organized labor.  

Minority applicants have equal chances of being selected as apprentices.  

Graduates of apprentice programs normally remain in the trade for which they had trained.  

Apprentice education can lead only to those jobs which are not intellectually exciting.  

Apprentice training is mostly for students who are unable to perform well in school.  

Pre-apprentice education would be more meaningful to individuals if it were offered only at the post-secondary level (community college, technical institutes, etc.)  

Pre-apprentice training is important to minority students who wish to enter an apprenticeable trade.  

Journeymen should be utilized as a resource to aid schools with pre-apprentice programs.
APPENDIX C
TABLE 15
DEMOGRAPHIC DATA

SCHOOL SETTING OF RESPONDENTS

<table>
<thead>
<tr>
<th></th>
<th>Comprehensive High School</th>
<th>Area or Joint Vocational School</th>
<th>Other State Institutions</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselor</td>
<td>246</td>
<td>24</td>
<td>5</td>
<td>275</td>
</tr>
<tr>
<td>Vocational Instructor</td>
<td>73</td>
<td>111</td>
<td>5</td>
<td>189</td>
</tr>
</tbody>
</table>

N = 465

1 missing observation
TABLE 16

DEMOGRAPHIC DATA
RESPONDENTS' SCHOOLS OFFERING PRE-APPRENTICE PROGRAM

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Counselor</td>
<td>77</td>
<td>195</td>
<td>272</td>
</tr>
<tr>
<td>Vocational Instructor</td>
<td>122</td>
<td>62</td>
<td>184</td>
</tr>
</tbody>
</table>

N = 465

9 missing observations
TABLE 17

DEMOGRAPHIC DATA

RESPONDENTS' PERSONALLY CONDUCT PRE-APPRENTICE PROGRAM

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
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<tr>
<td>Counselor</td>
<td>5</td>
<td>269</td>
<td>274</td>
</tr>
<tr>
<td>Vocational Instructor</td>
<td>34</td>
<td>147</td>
<td>181</td>
</tr>
</tbody>
</table>

N = 465

10 missing observations
<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselor</td>
<td>2</td>
<td>272</td>
<td>274</td>
</tr>
<tr>
<td>Vocational Instructor</td>
<td>34</td>
<td>147</td>
<td>181</td>
</tr>
</tbody>
</table>

N = 465

10 missing observations
TABLE 19
DEMOGRAPHIC DATA

AREA POPULATION OF SCHOOL LOCATION

<table>
<thead>
<tr>
<th>Area Population</th>
<th>001 2,499</th>
<th>2,500 9,999</th>
<th>10,000 49,000</th>
<th>50,000 250,000</th>
<th>250,000 plus</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselor</td>
<td>19</td>
<td>66</td>
<td>115</td>
<td>47</td>
<td>17</td>
<td>264</td>
</tr>
<tr>
<td>Vocational</td>
<td>2</td>
<td>9</td>
<td>66</td>
<td>75</td>
<td>25</td>
<td>177</td>
</tr>
<tr>
<td>Instructor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

N = 465

24 missing observations
## TABLE 20
### DEMOGRAPHIC DATA

#### STUDENT ENROLLMENT OF RESPONDENT SCHOOLS

<table>
<thead>
<tr>
<th>Enrollment Range</th>
<th>Counselor</th>
<th>Vocational Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>001-449</td>
<td>40</td>
<td>13</td>
</tr>
<tr>
<td>500-999</td>
<td>70</td>
<td>46</td>
</tr>
<tr>
<td>1000-1499</td>
<td>64</td>
<td>51</td>
</tr>
<tr>
<td>1500-1999</td>
<td>44</td>
<td>35</td>
</tr>
<tr>
<td>2000-2499</td>
<td>36</td>
<td>20</td>
</tr>
<tr>
<td>2500+ Plus</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>274</strong></td>
<td><strong>189</strong></td>
</tr>
</tbody>
</table>

\[N = 465\]

2 missing observations
### TABLE 21

**DEMOGRAPHIC DATA**

**RESPONDENTS' SCHOOL LOCATION, URBAN - RURAL**

<table>
<thead>
<tr>
<th></th>
<th>Urban</th>
<th>Rural</th>
<th>Total</th>
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<tr>
<td>Counselor</td>
<td>169</td>
<td>105</td>
<td>274</td>
</tr>
<tr>
<td>Vocational Instructor</td>
<td>126</td>
<td>63</td>
<td>189</td>
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</tbody>
</table>

*N = 465*

2 missing observations
### TABLE 22
DEMOGRAPHIC DATA
RESPONDENT'S AGE

<table>
<thead>
<tr>
<th>Age</th>
<th>Counselor</th>
<th>Vocational Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 25</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>25 to 29</td>
<td>29</td>
<td>14</td>
</tr>
<tr>
<td>30 to 34</td>
<td>64</td>
<td>27</td>
</tr>
<tr>
<td>35 to 39</td>
<td>49</td>
<td>25</td>
</tr>
<tr>
<td>40 to 44</td>
<td>47</td>
<td>32</td>
</tr>
<tr>
<td>45 to 49</td>
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<td>29</td>
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<td>50 to 54</td>
<td>22</td>
<td>26</td>
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<tr>
<td>55 to 59</td>
<td>21</td>
<td>27</td>
</tr>
<tr>
<td>60 and over</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>273</td>
<td>190</td>
</tr>
</tbody>
</table>

N = 465

2 missing observations
## TABLE 23

### DEMOGRAPHIC DATA

**RESPONDENTS' PARTICIPATION IN AN APPRENTICE PROGRAM**

<table>
<thead>
<tr>
<th></th>
<th>Yes Started</th>
<th>Yes Completed</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselor</td>
<td>10</td>
<td>12</td>
<td>253</td>
<td>275</td>
</tr>
<tr>
<td>Vocational Instructor</td>
<td>10</td>
<td>92</td>
<td>88</td>
<td>190</td>
</tr>
</tbody>
</table>

N = 465
<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselor</td>
<td>13</td>
<td>260</td>
<td>273</td>
</tr>
<tr>
<td>Vocational Instructor</td>
<td>144</td>
<td>45</td>
<td>189</td>
</tr>
</tbody>
</table>

N = 465

3 missing observations
### TABLE 25

DEMOGRAPHIC DATA

RESPONDENT'S TRADE (WHERE APPLICABLE)

<table>
<thead>
<tr>
<th>Trade</th>
<th>Counselors</th>
<th>Vocational Instructors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carpenter</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>Electrician</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Machinist</td>
<td>1</td>
<td>31</td>
</tr>
<tr>
<td>Millwright</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Plumber</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Printer</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>Sheet Metal</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Tool &amp; Die</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>19</td>
</tr>
</tbody>
</table>

\[ \text{Total: 12} \quad \text{Total: 153} \]

\[ \text{N = 465} \]

Non-response = 300
### ATTIUDINAL VARIABLE ON THE ECONOMIC VALUE OF APPRENTICESHIP

#### PEARSON CORRELATION COEFFICIENTS

<table>
<thead>
<tr>
<th></th>
<th>VAR019</th>
<th>VAR036</th>
<th>VAR037</th>
<th>VAR038</th>
<th>VAR050</th>
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</thead>
<tbody>
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<td>0.3327</td>
<td>0.3817</td>
<td>0.2532</td>
<td>0.6878</td>
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<td>(465)</td>
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<td>0.4753</td>
<td>1.0000</td>
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<td>0.7764</td>
</tr>
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<td>(0)</td>
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- VAR019 Apprentice education prepares students for many jobs which have a promising future.
- VAR036 Apprentice education is beneficial to the community.
- VAR037 Graduates of apprentice programs are economically successful.
- VAR038 Apprentice training is one of the best ways for an economically deprived individual to break the poverty cycle.
- VAR050 Attitudinal variable on the economic value of apprenticeship.
### ATTITUDE TOWARD THE USE OF PUBLIC SECONDARY SCHOOL FACILITIES

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Pre-apprentice education should be offered in our school.

All students would profit from having some pre-apprentice training while in high school.

There is little value in offering pre-apprentice education in high school because of the immaturity of students.

Pre-apprentice education should be expanded in my school district.

There should be money set aside in the school budget for pre-apprentice courses.

Pre-apprentice education would be more meaningful to individuals if it were offered only at the post-secondary level (community college, technical institutes, etc.)

Attitude toward the use of public secondary school facilities.
ATTITUDE TOWARD THE INVOLVEMENT OF NON-EDUCATIONAL PERSONNEL TO CONDUCT PRE-APPRENTICE PROGRAMS

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VAR021 Guidance and counseling resources should include individuals directly involved with apprentice programs.

VAR042 There is a need to maintain a close working relationship between schools and organized labor.

VAR049 Journeymen should be utilized as a resource to aid schools with pre-apprentice programs.

VAR052 Attitude toward the involvement of non-educational personnel to conduct pre-apprentice programs.
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Apprentice training is an excellent means for post-high school age youth to prepare for an occupation.

Apprentice training programs do little to prepare trainees for advancement in an occupation.

Apprentice education leads to higher education (colleges, technical training) after high school.

Entering an apprentice training program hinders students from participation in other advanced education after high school.

Apprentice education is generally not selected by the intellectually capable student.

The opportunities of apprentice training should be made more widely known to students.

Apprentice education should be encouraged more among all high school students.

Apprentice training usually attracts individuals with low motivation.

Apprentice education courses prepare students for too narrow a scope of training.

Apprentice education can lead only to those jobs which are not intellectually exciting.

Apprentice training is mostly for students who are unable to perform well in school.

General attitude toward apprenticeship and the apprenticeship system.
BIBLIOGRAPHY


Division of Vocational Education. Trades and Industry Directory Faculty and Staff. Columbus, Ohio: State Department of Education, 1974.


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