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The Ohio State University, Ph.D., 1970
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1970
RELATIONSHIPS BETWEEN CHARACTERISTICS OF TRAINEES
AND COMPLETION OF ON-THE-JOB TRAINING

Dissertation

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

By

Robert Edgar Peters, B.S., M.A.

* * * * * *

The Ohio State University
1970

Approved by

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Adviser
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I wish to express my appreciation to Dr. William D. Dowling, my adviser, for his counsel, suggestions, and criticisms which have aided materially in the preparation of this research paper.

Dr. Robert W. McCormick and Dr. Herman J. Peters have been most cooperative and helpful in serving on the Reading Committee for this dissertation.

The staff and participants in the project cannot be omitted for their contribution which actually made the research possible.

Lastly, my wife Alberta and daughter Cynthia deserve special mention for their understanding and patience during the months of preparation and writing of this paper.

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Certifications

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BACKGROUND OF PROBLEM

Historical Background and Review of Literature

Because of the high rate of inner-city unemployment, considerable attention has been focused on unemployed, under-employed, and low-income adults with respect to their ability to assimilate job training and to qualify themselves for available jobs. Reports have indicated a need for pre-employment training periods to precede on-the-job training. The National Industrial Conference Board reported in *Company Experiences with Negro Employment*: "Companies increasingly recognize that the work performance of employees is affected by their attitudes. Negroes have special problems in adjusting to work, particularly if they are breaking new ground by taking jobs formerly held by white employees."\(^1\)

Negroes are average workers in most respects, but are rated somewhat low on promotability and on taking responsibility. Neither rating is regarded as evidence of an inherent deficiency or inferiority, and many observers expect that the Negro will improve his position in both areas as he gets more education and training and more experience in business.\(^2\)


The National Industrial Conference Board stated that well-qualified Negroes seem to be in short supply. Many companies would hire Negro workers if they could find those who are able to meet their standards. The Columbus Urban League reported that many trainees are sufficiently motivated, but may not be aware of the demands of holding down a job. They may not realize that cooperation, promptness, attendance, and the ability to ask questions when one does not understand are important factors in job retention. After close evaluation, many applicants who are seemingly articulate lack basic skills in the areas of language and mathematics. Problems of training, up-grading, and advancement are of crucial importance today.

Karp reported in a study that job discrimination has cost this nation billions of dollars in the past. Thousands of occupations in business and industry have traditionally been closed to certain minority groups because of race, religion, or nationality. Chicago alone has experienced a waste of human resources estimated at over a billion dollars a year by permitting discriminatory hiring practices. Expanding occupational opportunities must be explored in order to implement training programs so that these minority groups can be appropriately prepared and employed in order to solve this problem in the future.

Work studies indicate that, in Detroit, being a Negro was the most negative factor in determining whether a school drop-out would secure

---

a job. Problems of training, up-grading, and advancement were reported as being of crucial importance regardless of race. The Negroes are expected to improve their status as more education, training, and experience is made available to them in the future.  

Another study was conducted in Detroit in 1967 by Michael Tucci to determine if a relationship existed between scores on the pre-test administered by the employment service and performance by young Negroes on the job. It was found that, in practically every case, real-life performance on the job was higher than that predicted by the employment service pre-test scores. Factors other than aptitude test scores appear to affect actual performance. These factors which may be related to occupational success such as age, sex, school achievement, social background, and prior work experience need to be investigated.

In a study prepared by Harding and Naurath, the authors reported that the amount or kind of vocational experience by a person did not appreciably affect his later success or performance on another job at the same level of employment. Attitudes of the worker toward his employer and past habit patterns such as punctuality and absenteeism appear to be important factors in successful employment.

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In a report, the Task Force on Job Opportunities and Welfare stated difficulties in hiring and promoting people from minority groups. Limited education, lack of adequate job counseling, skepticism concerning equal employment opportunities, habits, attitudes and mores causing indifferent reactions to job opportunities were listed as major contributing factors to difficulties in employing Negro workers by business and industry in the past.  

Non-white employment increased from 5.4 million to 7.7 million between 1955 and 1965, according to figures released by the U. S. Department of Labor. This was a substantially faster rate of growth than for white workers for the same period of time.

The proportion of increase for non-white workers was as follows:

1. Professional positions from 3.9 to 5.9 per cent.
2. Managers and proprietors from 2.3 to 2.8 per cent.
3. Clerical workers from 2.8 to 5.7 per cent.
4. Craftsmen and foremen from 4.0 to 5.6 per cent.
5. Service workers from 3.6 to 4.6 per cent.

Most of this increase has occurred since 1961. While progress is being made, the unemployment rate for Negroes has averaged at least double that for whites since 1955. Prejudices still exist, but discriminatory hiring practices are being eliminated at a faster rate than the educational and employment agencies can provide adequately trained non-white workers.  

---


While the Negro unemployment rate remains high in relation to the rate for whites, the number of jobs needed to lower this to the level of white unemployment is surprisingly small. It amounts to nearly 409,000 jobs or about twenty-eight per cent of the new jobs added to the economy in this country in 1967. This is slightly more than one-half of one per cent of all the jobs in the United States in 1967.10

Negro youths have had high levels of aspiration in occupational and vocational areas. In a study by Herson conducted in 1965, a marked discrepancy was found between these aspirations and the employment patterns of their parents. Those young Negroes from middle- and upper-class families chose professional jobs such as doctors, lawyers, teachers, and engineers while lower-class youth were more indefinite, but reflected a desire to escape from their present status. They merely stated that they wanted good jobs.11

There is probably no single fact of Negro American life which is so little understood by whites as the deterioration of the Negro family. Traditionally, the family is the basic social unit in our society. The family structure of Negroes is highly unstable and in many urban areas is approaching a breakdown today. Nearly a quarter of the Negro women living in cities are divorced, separated, or living apart from their husbands. The divorce for non-whites has risen to 5.1 per cent, but the white rate has risen to only 3.6 per cent in

recent years. The Negro divorce rate has been increasing at a forty
per cent greater rate than that for white marriages.\textsuperscript{12}

Both white and Negro illegitimacy rates have also been increasing,
but at a drastically different rate. The white rate was 2.0 per cent
in 1940; it was 3.07 in 1963. In that same period, the Negro rate of
illegitimacy increased from 16.8 per cent to 23.6 per cent. Today,
almost one-quarter of all Negro births are recorded as illegitimate.\textsuperscript{13}

As a result of the high rate of divorce, separation, and illegiti-
macy, almost one-fourth of the Negro families in this country are headed
by females. It has been estimated that only a minority of Negro chil-
dren reach the age of eighteen having lived all their lives with both
parents. This deterioration of the Negro family can be traced to the
inability of the Negro man to secure and hold a job which will provide
adequately for his family. This breakdown of the Negro family has led
to a startling increase in welfare dependency. This pattern of life
has been accepted as normal by the Negro in the large cities. This, in
turn, has become a national economic problem; and it has led to many
of the crises of racism in our country.\textsuperscript{14}

One answer to the problem listed above is to provide the education-
al and occupational training necessary for the Negro to secure and hold
a satisfactory job to support himself and his family. The Federal
government has recognized this and has provided funds in such

\footnotesize
\begin{itemize}
\item\textsuperscript{12}Daniel P. Moynihan, \textit{The Negro Family: The Case for National Ac-
\item\textsuperscript{13}Gilbert Osofsky, \textit{The Burden of Race} (New York: Harper and Row,
\item\textsuperscript{14}Ibid., p. 266.
\end{itemize}
legislation as the Manpower Development and Training Acts to alleviate this economic condition. In this way, it is hoped that the family unit can become stabilized. Unless this damage to the American Negro family is repaired, efforts to end discrimination, poverty, and injustice will have little success in the future.

The most difficult problem that industry and business face today is the poor educational background and lack of training on the part of the great bulk of the Negro labor force. The second-generation city Negro is a much poorer employee than the fellow just out of the cotton fields. The city Negro is no better educated, and he does not have the background, habits, and attitudes toward work of the rural Negro. Today, employers are moving more and more toward special efforts to employ Negroes if they can find workers who are reasonably trained and qualified educationally and vocationally.15

Early experiences in Manpower Training Programs indicated that many of the under-employed and unemployed did not have sufficient background in basic educational skills of mathematics and grammar to profit from occupational or vocational training. An analysis of the early Manpower data showed very low enrollments in Manpower programs for persons functioning with lower than eighth grade level of education. The unemployment rate of people in this category was reported as being relatively high. These individuals must somehow be provided with the

opportunity to cross these barriers that cut them off from promising job opportunities available in order to prevent them from facing a bleak future of unemployment and under-employment.\textsuperscript{16}

Directions for training unemployed persons of minority groups were mentioned in a report of the Secretary of Health, Education, and Welfare in 1963:

More care will have to be taken to identify other, perhaps prior, needs, such as physical rehabilitation, the treatment of severe emotional and social maladjustments, and the alleviation of basic educational deficiencies, all of which affect the trainability and employability of trainees. Greater flexibility and skill in devising curriculums and methods that take into account the greater variations in ability levels, learning rates, and basic educational deficiencies of trainees must be developed and utilized.\textsuperscript{17}

With these criteria in mind, the personnel of The Ohio State University College of Education and its Center for Adult Education devised an educational program directed to the needs discovered in the preceding research such as:

1. Recruit participants from the inner-city who had occupational histories of under or unemployment but who showed potential in the field of work.

2. Encourage local business and industry to participate in the training program to insure an adequate level of employment for the participants.


3. Devise a curriculum which would alleviate basic educational deficiencies of language and mathematics which affect the trainability and employability of workers.

4. Provide employers with trainees who were ready for employment by developing proper attitudes and knowledge and responsibility to business and industry.

5. Develop an educational program which would permit trainees to enter occupational areas for up-grading and advancement to insure continued employment.

6. Attempt to bring aspirations of trainees nearer to their actual job level by supplying information and training concerning vocational areas.

The Center for Adult Education also assumed responsibility for evaluating progress toward the objectives of the pre-employment training program and for arranging a flexible program designed to meet individual needs of the participants.
II.
INTRODUCTION TO PROBLEM

Initiation of Program

On October 21, 1968, the first of three eight-week pre-employment programs was launched by The Ohio State University's Center for Adult Education. This program was the result of months of planning and cooperation. In the fall of 1967, a proposal was submitted to and later approved by the Department of Labor for a grant of $56,485, funded from the Manpower Development and Training Act. The Center for Adult Education was to provide the educational component and the Columbus Urban League was to provide the recruitment and placement of trainees. In addition, the Ohio State Employment Service was to provide the appropriate financial assistance to the trainees while they attended the educational program at The Ohio State University. The second eight-week program began on January 3, 1969; and the third and last session began on March 31, 1969. A total of seventy-five adults participated in the project, which stressed basic educational skills and the development of attitudes and ideas concerning jobs and responsibilities in business and industry.
Staff

The administrative staff of the Manpower Project consisted of the Director who was a professor with the Center for Adult Education, an Associate Director, and an Assistant Director who administered appropriate instruments and coordinated various data-gathering devices for purposes of evaluation.

The instructional staff consisted of three graduate students, employed on a half-time basis, who were responsible for teaching basic educational skills in communications, computations, consumer economics, social skills, work habits, and orientation to business and industry. Three graduate students provided counseling services by working with small groups and individuals concerning personal problems. A full-time secretary in the administrative office completed the staff, although social workers from the Columbus Urban League were also available when needed.

Objectives of the Program

The general objective of the pre-employment training program was to provide employers with trainees who were ready for on-the-job training. Basic educational skills and the development of knowledge and realistic attitudes about business and industry were considered fundamental in the program.

Specific objectives were to:

1. Provide employers with trainees who were ready for employment. Basic educational skills,
development of attitudes, and knowledge of and responsibility to business and industry were to be covered.

2. Evaluate trainees' readiness for training in the above areas.

3. Evaluate the effectiveness of techniques of learning during the course.

4. Develop generalizations about recruitment of trainees, their training and development during the course.

5. Conduct a follow-up study to determine the effectiveness of the pre-employment program and success attained by the trainees while actually employed.

6. Disseminate findings of the program to other agencies which endeavor to develop similar programs of pre-employment training.

Instructional Areas

The staff, in cooperation with the Columbus Urban League, developed and implemented an instructional system with the following components:

I. Communication Skills
   A. Reading
   B. Speech
   C. Vocabulary
   D. Spelling
   E. Applying for a job
   F. Elements of test-taking
   G. Understanding and following instructions
   H. Office procedures in the use of telephones

II. Computational Skills and Consumer Economics
   A. Basic mathematical concepts
   B. Mathematics for technical occupations
   C. Payroll deductions
   D. Garnishments
   E. Personal and family budgeting
   F. Banking
   G. Credit
III. Social Skills and Adjustments
   A. Importance of regularity of attendance
   B. Factors relating to success on a job
   C. Personal hygiene
   D. Personal grooming and attire
   E. Work habits
   F. Assuming responsibility on the job
   G. Evaluation of personnel
   H. Accepting and evaluating criticism
   I. Available community social services

IV. Orientation to Business and Industry
   A. Role of the supervisor
   B. Role of the employee
   C. Importance of customer
   D. Seniority
   E. Labor organizations and their influence on employee-employer relationships
   F. Overtime and incentive pay
   G. Social security provisions
   H. Utilizing continuing educational opportunities in the community
   I. Knowledge of produces and services of employer
   J. Broad knowledge of industry through field experiences and trips

Time allotments for each component of the instructional system appear below.

<table>
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<th>Component</th>
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<td>Communications</td>
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<td>Computations and Consumer Economics</td>
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<td>Social Skills</td>
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<td>Work Habits and Job Skills</td>
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<td>Employee Skills</td>
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<td>Orientation to Business and Industry</td>
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<td>Individual Counseling</td>
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<td>Group Counseling</td>
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<tr>
<td>Field Trips</td>
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</table>

Total hours for eight weeks 280

Trainees attended classes from 8 a.m. until 4 p.m., Monday through Friday, a schedule corresponding to on-the-job training experience and succeeding employment.
Selection of Trainees

Seventy-five inner-city residents, the majority of whom were Negro, were selected by the Columbus Urban League to participate in the educational component of the Manpower Project. The trainees had a history of under-employment and unemployment, dependence on public welfare, and educational and occupational failure. Twenty-six trainees completed the first eight-week course; twenty-nine, the second session; and twenty, the third period of training.

A total of seventy-five participants completed the eight-week educational component of the Manpower Project. This research is based on the sixty participants who took both the pre and post Metropolitan Achievement Test and who were employed during the ninety-day on-the-job training period. The fifteen trainees who are not included in the study either entered the project too late to be tested or were not placed on a job.

Three men entered the armed forces. Three participants completed the educational component but were not employed because of illness. Two participants continued training in the New Careers and New Dimensions educational programs. One trainee was referred for psychiatric treatment due to a serious social maladjustment discovered during the eight-week training period. Three trainees refused the employment available in on-the-job training, and three others left the Columbus area before they could be placed in the ninety-day on-the-job follow-up training program.
One of the main objectives of the educational component of the program was to provide an opportunity for the participants to raise their literacy level and to develop positive attitudes concerning business and industry.

The criteria for selection were:

1. Persons who were unemployed or under-employed, with preference given to those who had experienced frequent unemployment.

2. Persons with a variety of educational and occupational experiences were recruited so that the effectiveness of different learning techniques could be evaluated.

3. Persons were selected who had basic educational deficiencies but were at least at the sixth grade level of proficiency and who did not have the vocational skills needed to obtain a good job.

4. Persons with a willingness to participate and learn were given priority in order to form a cooperative and effective learning group.

It was assumed that people who were dissatisfied with their present status and who were willing to seek solutions to their problems would form congenial and cooperative learning groups who would complete the total training program. Therefore, successful completion of the ninety-day on-the-job training period was considered to be the most effective and adequate criterion for evaluation of the Manpower Project.

Participating employers for the ninety-day on-the-job training period were:

<table>
<thead>
<tr>
<th>Company</th>
<th>Number of Trainees Employed</th>
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<tbody>
<tr>
<td>Nationwide Insurance Company</td>
<td>21</td>
</tr>
<tr>
<td>Huntington National Bank</td>
<td>4</td>
</tr>
<tr>
<td>Big Bear Stores</td>
<td>15</td>
</tr>
<tr>
<td>Denison Division - Abex Corporation</td>
<td>3</td>
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The participating companies were cooperative during the pre-employment educational period. Representatives of many of the concerns visited the classroom and spoke to the group concerning employment practices, company policies, wages, job expectations, and promotion procedures. Field trips to the companies were arranged; and printed materials were distributed to stimulate discussion, interest, and understanding by the participants prior to on-the-job training. In addition, the supervisor of each trainee provided the information for the evaluation of the ninety-day on-the-job training period.

Background of Trainees

The sixty participants who completed the pre-employment component in the Manpower Project were found to have a record of under-employment and unemployment, dependence upon public welfare, and educational and occupational failures. Encounters with law enforcement agencies were common experiences. Twelve (twenty per cent) of the trainees who completed the on-the-job training component had been convicted of crimes ranging from serious traffic offenses to robbery and grand larceny.

There were thirty-eight women and twenty-two men enrolled who completed the eight-week educational component of the project and went to
on-the-job training. The mean age for the participants was 25.1 years, ranging from seventeen to forty-two years of age. Twenty-four (forty per cent) of the sixty trainees completed high school. The level of educational attainment ranged from the eighth through the twelfth grade, with an average grade completion for the group of 10.85. A discrepancy was found between the mean grade attainment and the performance of the trainees on the Metropolitan Achievement Test. As measured by the pre-achievement test, trainees were functioning on an average grade level of 7.09. After the eight-week educational training period, the grade level average had been raised to 7.53 for a gain of .44 in grade level. (See Appendix C.)

Forty-two participants (seventy per cent) reported never having had any vocational training. Nine trainees (fifteen per cent) had received some clerical training or other vocational education while attending high school. The remaining nine (fifteen per cent) had received additional vocational training in such government-financed projects as the Job Corps and other Manpower Training Programs.

Twenty-four (forty per cent) of the participants reported work experience in service occupations. Fifteen trainees (twenty-five per cent) had previous employment in clerical and sales occupations. Other areas of employment included construction workers, laborers, truck drivers, machine operators, assemblers, bench and machine trade occupations. None of the participants reported occupational experiences in the professional, technical, or managerial areas. Five trainees listed no previous work experience prior to entering the project. Three of these were recent high school graduates.
Twenty-five of the participants or forty-two per cent were not natives of Ohio. Arkansas, West Virginia, Kentucky, Mississippi, Georgia, Alabama, Tennessee, and Texas were listed as birthplaces by the trainees. They came from families with an average of six siblings per family unit. Forty per cent of the sixty participants or twenty-four trainees came from broken homes with their parents being either separated or divorced. Only fifteen participants (twenty-five per cent) indicated that their parents were still living. Another fifteen trainees reported both parents deceased.

Thirty participants (fifty per cent) reported the educational and occupational background of their parents. Those trainees reporting such information indicated that the average grade level attainment for their parents was 10.5, ranging from grade three through completion of college. This compares to a grade level average of 10.85 for the participants, who ranged from grades eight through twelve. Mothers of the participants were listed as housewives and domestic workers. Fathers of the participants were generally engaged in farming, construction work, and service occupations.

TABLE 1

Marital Status of Trainees

<table>
<thead>
<tr>
<th>Sex</th>
<th>Single</th>
<th>Married</th>
<th>Divorced or Separated</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>12</td>
<td>8</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>Female</td>
<td>20</td>
<td>8</td>
<td>10</td>
<td>38</td>
</tr>
<tr>
<td>TOTAL</td>
<td>32</td>
<td>16</td>
<td>12</td>
<td>60</td>
</tr>
</tbody>
</table>
Of the sixty participants included in this research report, thirty-two (fifty-four per cent) were single. Twelve of those single were men and twenty were women. Sixteen trainees (twenty-six per cent) were married. Eight of those married were men and eight were women. Another twelve participants (twenty per cent) were separated or divorced. Two of these were men and ten were women.

Forty-two trainees (seventy per cent) stated that they were the main financial support of their family. Ten of these were men and twenty-two were women. Of the thirty-eight women completing the project, fifteen (thirty-nine per cent) were receiving Aid for Dependent Children. The majority of those receiving such assistance were unmarried mothers. Family size for the participants ranged from one to six children, with an average of two siblings per family unit.
III.

THE PROBLEM

Statement

Studies have reported a need for basic education and vocational training, but little effort has been made to study individual differences among Negroes as they relate to success on the job. The central purpose of this study is to discover whether relationships exist between performance during the pre-employment program, as measured by a pre and post Metropolitan Achievement Test score along with basic demographic data, and the successful completion of the ninety-day period of on-the-job training. Relationships between various factors such as age, sex, educational level, prior employment, project attendance, and achievement and the successful completion of the ninety-day on-the-job training period by sixty participants in the Ohio State Manpower Project will be reported.

This investigation seeks to discover if a relationship exists between completion of on-the-job training and the following:

1. Grade level of public school education
2. Past work experience
3. Sex of the participant
4. Project attendance record
5. Age of the trainee
6. Achievement as measured by a pre and post Metropolitan Test score
Hypotheses

Data will be analyzed in terms of the following hypotheses:

$H_1$ There is no statistically significant relationship between grade level completed in school and the success of on-the-job training.

$H_2$ There is no statistically significant relationship in the amount of previous work experience between those trainees who complete on-the-job training and those who do not.

$H_3$ There is no statistically significant relationship between males and females concerning completion of on-the-job training.

$H_4$ There is no statistically significant relationship between attendance during the project and completion of on-the-job training.

$H_5$ There is no statistically significant relationship in age between trainees who complete on-the-job training and those who do not.

$H_6$ There is no statistically significant relationship between the pre and post Metropolitan Achievement Test scores and completion of the on-the-job training period.

The research is organized and reported as follows:

1. Historical background, including justification and a review of the literature.

2. Introduction to the problem with the initiation and objectives of the training program and the selection and background of participants.

3. Statement of the problem with the six hypotheses for the research.

4. Methodology, including definition of terms, instrumentation, statistical treatment, limitations, and implications of the study.
5. Report of the data and statistical analysis of each of the six hypotheses.

6. A summary and conclusion, with recommendations and implications for future research.

7. The appendix and bibliography for the study.
IV.

METHODOLOGY

Justification of this Study

A great deal of attention has been focused on the problems of educationally deficient adults with respect to their ability to assimilate basic education and job training and to qualify themselves for available jobs. Limited education and vocational preparation has made these adults unacceptable in current training programs. As a result, they cannot hope to compete for available jobs which make ever-increasing demands in skill, training, and education.

Although they comprise only ten per cent of the labor force, Negroes account for twenty per cent of total unemployment. In 1961, only fifty per cent of Negro men (compared to two-thirds of white men) worked steadily at full-time jobs. Proportionately, three times as many whites as Negroes worked steadily at full-time jobs. Negroes tend to be paid less than whites, even for the same jobs. Negroes are concentrated very heavily in low-paying unskilled and semi-skilled occupations. The result is that even the employed Negro man frequently is unable to support his family.\(^{18}\)

Very little research has been done specifically concerning this area, although the government and private business and industry have spent large sums of money in an attempt to expand educational and occupational opportunities to minority groups. Material from the National Industrial Conference Board, the Task Force on Job Opportunities, and Government Reports on Manpower Development Acts have been used in this research report.

This study will report change during the training period as recorded by the pre and post Metropolitan Achievement Test scores. This information, along with data such as age, sex, past employment, grade level, and project attendance record of individual students, will be compared with the completion of the ninety-day on-the-job training period. The results of this research will provide information concerning the type of training needed by participants in MDTA programs, since the characteristics and achievement of the sixty participants will be compared to their actual success in the follow-up study.

**Definition of Terms**

1. **Achievement** - the level of educational development as determined by the grade attainment recorded by the pre and post Metropolitan Achievement Test placement score.

2. **On-the-job training** - the ninety-day period of employer supervision following the training period as required by the MDTA contract.
3. Participant or Trainee - those persons enrolled in the eight-week training project and in the ninety-day on-the-job training program.

4. Occupational success - completion of the ninety-day on-the-job training period by the trainee.

Instrumentation

In order to collect the data needed for the statistical analyses, several instruments were used. A description of each of those instruments follows.

1. Questionnaire. A questionnaire was used to collect demographic data. Information concerning age, sex, educational level, occupational history, and family background was collected. The questionnaire was designed with four sections:
   a. General information.
   b. Family background.
   c. Educational experience.
   d. Occupational history. (See Appendix A.)

2. Attendance Records. A weekly form was prepared for each participant for allowances from the Ohio Bureau of Employment Services on which an accurate attendance record was kept. Total attendance records for each trainee for the eight-week period were available from copies of these reports from the State Employment Service.

3. Metropolitan Achievement Test. The Metropolitan Achievement Test was used both as a pre and post test during the eight-week program for all of the sixty participants who completed the project. The test comprises a coordinated series of measures of achievement in the
important reading and arithmetic skill and content areas of elementary and junior high school curriculum. The authors have developed a test which contributes most effectively to teacher understanding and provides dependable data for evaluation of pupil growth. They have sought to insure the validity of the test by analysis of textbooks, courses of study, formulation of the goals of instruction, and by subjecting the content to rigorous experimental try-out prior to publication.\footnote{Walter N. Durost (ed.). Directions for Administering the Metropolitan Achievement Test (New York: World Book Publishing Company, 1959), p. 34.}

Since participants in the project were selected in part for their educational deficiencies, the intermediate test was administered, rather than the elementary or the advanced forms. Raw scores were converted to grade level equivalents for a comparison with the actual grade attainment in public schools by the participants. These grade levels were averaged so that a pre and post grade level could be obtained for each of the sixty participants in the project. The amount of gain or loss was then calculated so that the data could be used for this research report. Traditionally, use of grade equivalents has been the most common method of interpreting results of achievement tests.

4. **Follow-up Ninety-day Rating by Employer.** Immediate supervisors were asked at the termination of the trainee or completion of the ninety-day on-the-job training period to complete a form with the following criteria:
a. Attendance  
b. Promptness  
c. Conduct  
d. Ability to follow instructions  
e. Willingness to ask questions  
f. Willingness to accept responsibility  
g. Ability to get along with people  
h. Initiative  
i. Acceptance of constructive criticism  
j. General attitude and interest  
k. Knowledge and skill on job  
l. Retention and promotability (See Appendix B.)

For this study, only retention during the ninety-day on-the-job training period will be used in the research data. The other information was needed to determine reasons for early termination of employment and to aid in counseling and evaluation procedures.  

Statistical Treatment

A parameter is a value such as a mean, median, coefficient of correlation, or variance as applied to an entire population being studied. When applied to a sample drawn from that population, these same quantities are referred to as statistics. Since statistics are obtained from sample populations that are subject to random variations, their values differ slightly from the real population values; but they are still regarded as estimators of the population parameters. Therefore, any statistical test which involves measures of these parameters is considered to be parametric statistics. A nonparametric statistical

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test is a test whose model does not specify conditions about parameters of the population from which the sample is drawn.\textsuperscript{21}

For this research, correlation analysis and analysis of variance were used as parametric statistical tests for the six null hypotheses. In addition, the Chi Square test for independence of two variables was used. The Chi Square test is classed as a nonparametric statistical test.

The data on the sixty participants who completed the training program were collected from the instruments described in the preceding section. This information was recorded in tables (See Appendix C.). These data were then transferred to computer cards so that The Ohio State University computer facilities could be used.

Two of the programs from the Biomedical Computer Programs (Book 2) of The University of California, Los Angeles, were selected as appropriate for the analysis of data that was desired for this study. The means and correlation analysis was obtained from program B.M.D.-02D. The analysis of variance was obtained from program B.M.D.-07D.\textsuperscript{22}

The successful completion of the ninety-day training period was the constant. The six variables concerning the null hypotheses of this research were:

1. School level completed (ordinal)
2. Project attendance (ordinal)
3. Sex (nominal)


\textsuperscript{22}W. J. Dixon (ed.). \textit{Biomedical Computer Programs, Book Two} (Los Angeles: University of California Press, 1968), p. 2.
4. Project attendance (ordinal)
5. Age (ordinal)
6. Project achievement (ordinal)

In the use of ordinal data, scores were averaged and divided into those above the mean and those below the mean in order that statistical analysis could be applied. In the nominal data, the participants were listed either as male or female. In describing the participants, demographic data was analyzed in terms of actual numbers, means, and percentages. Such data includes age, sex, marital status, family history, educational and occupational experiences.

Analyses of data obtained for the six hypotheses were reported for the following combinations from The Ohio State University computer service:

1. Total sixty trainees.
2. Thirty-eight women trainees.
3. Twenty-two men trainees.
4. Thirty-four successful trainees.
5. Twenty-six unsuccessful trainees.
6. Twenty-seven successful women.
7. Eleven unsuccessful women.
8. Seven successful men.

The computer service provided an analysis of data which is used in this research for the six hypotheses as follows:

1. Means
2. Coefficient of correlation
3. Analysis of variance

In addition, percentages were calculated when appropriate to make data more meaningful. The Chi Square test was also used for each of the six hypotheses. Charts were prepared concerning important data to aid visual understanding in this research report.
Chi Square,
A Nonparametric Statistical Test

The chi square test is a statistical technique for determining the significance of differences between obtained results and those which might be expected by chance alone.

In this research, chi square is used to determine whether a relationship exists between completion of on-the-job training and the six variables. The chi square test merely indicates the level of significance of a relationship. It does not provide the degree of relationship as a coefficient of correlation does.

The following is an example of the chi square test that was applied to the data concerning the six hypotheses for this research.

<table>
<thead>
<tr>
<th>Number of Trainees</th>
<th>Completion of on-the-job Training</th>
<th>Termination of on-the-job Training</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above the mean of the variables</td>
<td>A</td>
<td>B</td>
<td>A + B</td>
</tr>
<tr>
<td>Below the mean of the variables</td>
<td>C</td>
<td>D</td>
<td>C + D</td>
</tr>
<tr>
<td>TOTALS</td>
<td>A + B</td>
<td>B + C</td>
<td>Total N</td>
</tr>
</tbody>
</table>

Figure 1. Explanation of Chi Square

Formula: $X^2 = \left( \frac{(F_o - f_e)^2}{F_o} \right)$
In the upper left block of the chart, the observed frequency \(F_O\) is \(A\). The expected frequency \(f_e\) would be:

\[
f_e = \frac{(A + C) A + B}{N}
\]

To complete chi square, the remaining blocks are treated in a similar manner.\(^{23}\)

After completing chi square for each of the six variables, the Fisher table of critical values of chi square for degrees of freedom and probabilities was consulted to determine if relationships were significant at a .05 level of significance with one degree of freedom.\(^{24}\)

**Coefficient of Correlation, A Parametric Statistical Analysis**

The Biomedical Computer Program — 02D calculated the coefficient of correlation for the data of each of the variables of the six hypotheses as related to successful completion of on-the-job training. These coefficients of correlation were then compared to Table A-27 of Dixon and Massey to determine if a statistically significant relationship existed. Acceptance or rejection of the hypothesis was based upon a hypothetical population correlation of zero with ninety-five per cent confidence.\(^{25}\)


Analysis of Variance, 
A Parametric Statistical Analysis

An analysis of variance was also calculated by the computer (B.M.D.-07D) for the data concerning the variables of the six hypotheses to determine if there was a statistically significant relationship. The ratio of the between groups to the within groups mean square was computed with a one to fifty-eight degree of freedom based on the sixty trainees in the research to give an F statistic. This F statistic has to be 4.00 to be significant at a level of ninety-five per cent or .05 level of confidence as recorded in Table 7A of Dixon and Massey.26

Summary of Analysis

Although the nonparametric chi square test has less statistical power than the parametric tests of correlation of coefficient and analysis of variance, all three test results of the analysis of data were compared prior to rejecting or accepting as statistically significant each of the six null hypotheses of this research.

Scope and Limitations

1. The research does not provide adequate social background on the trainees' history and personal experiences; thus, it will have its limitations.

26Ibid., p. 388.
2. The problem of measuring mental abilities in the participants of the project was difficult. Most intelligence tests are constructed for and standardized to children. The content of tests such as the Metropolitan Achievement Test which was used in this research has been criticized as a borrowing from children's tests. Such tests are inadequate for adults, and their relevancy is questionable. Since no better alternative has been developed at present, many educators do not regard giving an adult a child's test as being a difficult problem.27

3. There is no way at present to actually follow up the real value or success for those people who do not complete the ninety-day on-the-job training program, since most of them have either moved from the area or have left no local forwarding address.

4. The trainees who are not included in the research because they were not placed on a job because of joining the armed forces, illness, or refusing employment may have had an effect upon the total impact of the project and its data.

5. There were uncontrollable variables in terms of recruitment and placement by the Urban League because of employment trends and attitudes of employers and supervisors which could not be measured.

6. The conclusions of this study are applicable only to those completing this project and cannot be generalized to include the entire population of hard-core under-employed and unemployed in this country, except as they are similar to the population of this study.

Implications

This study should give evidence of the value of the curriculum and program as presented in the MDTA program at The Ohio State University. The research should also be of value to similar projects which are undertaken in the future concerning pre-on-the-job training. The results of this research should provide information concerning characteristics of trainees in terms of recruitment, curriculum, placement, and follow-up procedures that future researchers should find useful. The data and analysis should provide information which could make similar programs more successful, since they will have some established basis on which to begin and will not have to duplicate the efforts of the project herein described.
V.
PRESENTATION OF DATA AND STATISTICAL ANALYSES

A statistical analysis was computed for each of the six hypotheses as stated in the problem. The following sections present the results of this analysis for each of the stated hypotheses. A conclusion is reached concerning each hypothesis, and a summary is presented at the end of this section stating findings of the research.

Hypothesis I — School Level Completed

There is no statistically significant relationship between grade level completed in school and the success of on-the-job training.

The mean grade level completed for the sixty trainees was 10.85. Of the sixty participants, six per cent or four had completed the eighth grade. Another six per cent had completed the ninth grade. Twenty-three per cent or fourteen trainees had completed the tenth grade, and thirteen or twenty-two per cent had completed the eleventh grade. The greatest number, twenty-five participants or forty-one per cent, had graduated from high school.
TABLE 2

Grade Level Completed by Sex

<table>
<thead>
<tr>
<th>Grade</th>
<th>8th</th>
<th>9th</th>
<th>10th</th>
<th>11th</th>
<th>12th</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>5</td>
<td>7</td>
<td>22</td>
</tr>
<tr>
<td>Women</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td>8</td>
<td>18</td>
<td>38</td>
</tr>
<tr>
<td>TOTALS</td>
<td>4</td>
<td>4</td>
<td>14</td>
<td>13</td>
<td>25</td>
<td>60</td>
</tr>
</tbody>
</table>

The thirty-eight women had completed an average of 11.0 grade level, while the twenty-two men had attained a 10.59 grade level in the public schools. There was a difference of almost .5 of a grade level between the successful men (10.28 grade level) and the unsuccessful men (10.73 grade level). With the women, this was reversed, since the twenty-seven successful women had completed 11.07 grades on the average as compared to 10.81 for the eleven women who did not complete the ninety-day on-the-job training period. From these averages, the higher the level of grade attainment for men, the less likely they were to complete the on-the-job training period. The higher the grade level for the women, on the other hand, the more successful they were during the ninety-day training period.

The average grade level for the thirty-four trainees who completed the ninety-day on-the-job program was 10.91. The average grade level for the twenty-six unsuccessful trainees was 10.77. From these averages, the successful trainee during the ninety-day on-the-job training period had achieved a slightly higher level of public education.
Analysis of Correlation by Grade Level Completed

The coefficient of correlation for grade level completed in school and successful completion of the ninety-day on-the-job training period as calculated by the computer was +.0146. From Table 27 of Dixon and Massey, a sample correlation of +.0146 is not sufficiently different from zero to reject a hypothetical population correlation of zero with ninety-five per cent confidence. Therefore, null Hypothesis I, which states that there is no statistically significant relationship between grade level completed in school and the success of on-the-job training, cannot be rejected, based on a coefficient of correlation of +.0146 at a confidence level of ninety-five per cent.

Analysis of Variance for Grade Level Completed

An analysis of variance was also computed to test the null hypothesis that there is no statistically significant relationship between grade level completed in school and the success of on-the-job training. The analysis of variance table is as follows:

TABLE 3

Variance of Grade Level Completed

<table>
<thead>
<tr>
<th>Groups</th>
<th>Sums of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>0.2993</td>
<td>1</td>
<td>0.2993</td>
<td>0.1943</td>
</tr>
<tr>
<td>Within</td>
<td>89.3507</td>
<td>58</td>
<td>1.5405</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>89.6500</td>
<td>59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

29 Dixon and Massey, op. cit., p. 464.
The ratio of the between groups to the within groups mean square gives a value to $F$ of 0.1943. The tabulated $F$ ratio for 1 and 58 degrees, respectively, is 4.00 at ninety-five per cent confidence level. Since the computed value 0.1943 does not exceed the tabulated value of 4.00, null Hypothesis I cannot be rejected.

**Chi Square Test for Grade Level Completed**

The grade level completed by the sixty participants was averaged, and a mean of 10.85 grade level was obtained for the group. Of the 34 trainees who completed on-the-job training, 21 were above the average and 13 were below the average. Of the 26 trainees who did not complete on-the-job training, 17 were above the average and 9 were below the average of 10.85 grade level.

**TABLE 4**

<table>
<thead>
<tr>
<th>Average</th>
<th>Completed OJT</th>
<th>Terminated OJT</th>
<th>TOTALS</th>
<th>$x^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
<td>21 (21.4)</td>
<td>17 (16.6)</td>
<td>38</td>
<td>2.0</td>
</tr>
<tr>
<td>Below</td>
<td>13 (12.6)</td>
<td>9 (9.4)</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>TOTALS</td>
<td>34</td>
<td>26</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

Formula: $x^2 = \sum \frac{(f_o - f_e)^2}{f_o^2}$

---

The value of chi square was computed and found to be +2.0.\textsuperscript{31} According to the Fisher probability table, to be significant at the .05 level with one degree of freedom, a chi square value of 3.84 is required.\textsuperscript{32} With a value of +2.0, the decision was made not to reject null Hypothesis I that there is no statistically significant relationship between grade level completed in school and the success of on-the-job training.

**Summary of Statistical Analysis of Data on Hypothesis I**

1. The computed coefficient of correlation of +0.0146 was found not to be significantly different than zero with ninety-five per cent confidence.

2. The computed F ratio of 0.1943 from the analysis of variance table was not sufficient to establish a statistically significant relationship at the ninety-five per cent confidence level.

3. The computed chi square of +2.0 from the two-way contingency table was not sufficient to establish a statistically significant relationship to grade level and the success of on-the-job training.

All three statistical tests have uniformly failed to reject null Hypothesis I that there is no statistically significant relationship between grade level completed in school and the success of on-the-job training.

\textsuperscript{31}Siegel, *op. cit.*, p. 107.
\textsuperscript{32}Johnson, *op. cit.*, p. 361.
Hypothesis II -- Previous Work Experience

There is no statistically significant relationship in the amount of previous work experience between those trainees who complete on-the-job training and those who do not.

The average months of prior employment for the sixty participants was 38.1 months. The thirty-eight women had an average of 29.7 months of prior employment, while the twenty-two men averaged 52.7 months. The seven men who successfully completed the ninety-day on-the-job training period averaged 66.1 months of prior employment, and the fifteen unsuccessful men averaged 46.5 months of prior employment. The twenty-seven successful women averaged 20.1 months of prior employment. Those women who did not complete on-the-job training averaged 53.1 months of prior employment. It appears from these figures that, the longer the men were employed previously, the more likely they were to complete on-the-job training. The less experience the women had in terms of months of prior employment, the more successful they were at completing the ninety-day training period.

For the thirty-four successful trainees who completed the on-the-job training period, the average prior employment was 37.6 months. For the twenty-six participants who did not complete the ninety-day training period, the average months of prior employment was 49.3. These figures show that, the greater the pre-employment period (by 11.7 months), the less successful were the trainees.
TABLE 5

Prior Work Experience of Trainees

<table>
<thead>
<tr>
<th>Months</th>
<th>0-39</th>
<th>40-79</th>
<th>80-119</th>
<th>120-159</th>
<th>160-up</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed OJT</td>
<td>29</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>34</td>
</tr>
<tr>
<td>Terminated OJT</td>
<td>15</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>TOTALS</td>
<td>44</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>60</td>
</tr>
</tbody>
</table>

Analysis of Correlation for
Months of Previous Work Experience

The coefficient of correlation for previous months of work experience as compared to successful completion of on-the-job training as calculated by the computer was +0.1937. From Table 27A of Dixon and Massey, a sample correlation of +0.1937 is not sufficiently different from zero to reject a hypothetical population correlation of zero with ninety-five per cent confidence. Null Hypothesis II, which states that there is no statistically significant relationship in the amount of previous work experience between those trainees who complete on-the-job training and those who do not, cannot be rejected, based on a correlation of +0.1937 at a confidence level of ninety-five per cent.

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33 Dixon and Massey, op. cit., p. 464.
Analysis of Variance for Previous Work Experience

An analysis of variance was also computed to test the null hypothesis that there is no statistically significant relationship in the amount of previous work experience between those trainees who complete on-the-job training and those who do not. The analysis of variance table is as follows:

TABLE 6

Variance of Previous Work Experience

<table>
<thead>
<tr>
<th>Groups</th>
<th>Sum of Squares</th>
<th>Degree of Freedom</th>
<th>Mean Square</th>
<th>F Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>5695.0059</td>
<td>1</td>
<td>5695.0059</td>
<td>2.0983</td>
</tr>
<tr>
<td>Within</td>
<td>157421.2871</td>
<td>58</td>
<td>2714.1601</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>163116.2930</td>
<td>59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The ratio of the between groups to the within groups mean square gives a value to F of 2.0983. The tabulated F ratio for 1 and 58 degrees, respectively, is 4.00 at ninety-five per cent confidence level. Since the computed value 2.0983 does not exceed the tabulated value of 4.00, null Hypothesis II, which states that there is no significant relationship in the amount of previous work experience between those trainees who complete on-the-job training and those who do not, cannot be rejected.

\[34\] Ibid., p. 388 (Table 7A).
Chi Square Test for Previous Work Experience

The sixty participants had an average of 38.1 months of prior employment before entering the educational component training period. Of the thirty-four successful trainees who completed on-the-job training, five were above this average of 38.1 months of prior experience and twenty-nine were below this average. Of the twenty-six trainees who terminated before completion of the ninety-day on-the-job training period, eleven were above the average of 38.1 months and fifteen were below the average.

**TABLE 7**

<table>
<thead>
<tr>
<th></th>
<th>Completed OJT</th>
<th>Terminated OJT</th>
<th>TOTALS</th>
<th>$x^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
<td>5 (9.1)</td>
<td>11 (6.9)</td>
<td>16</td>
<td>5.8</td>
</tr>
<tr>
<td>Below</td>
<td>29 (24.9)</td>
<td>15 (19.1)</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>TOTALS</td>
<td>34</td>
<td>26</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

The value of chi square was computed and found to be 5.8. According to the Fisher probability table, in order to be significant at the .05 level with one degree of freedom, a chi square of 3.84 is required. With a value of 5.8, the decision was made to reject null hypotheses.

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Hypothesis II that there is no statistically significant relationship in the amount of previous work experience between those trainees who complete on-the-job training and those who do not.

Summary of Statistical Analysis of Data on Hypothesis II

1. The computed coefficient of correlation of +0.1937 was found not to be significantly different than zero with ninety-five per cent confidence, so Hypothesis II cannot be rejected.

2. The computed F ratio of 2.0983 from the analysis of variance table was not sufficient to establish a statistically significant relationship at the ninety-five per cent level, so Hypothesis II cannot be rejected.

3. The computed chi square of +5.8 from the two-way table was sufficient to establish a statistically significant relationship for null Hypothesis II, which states that there is no statistically significant relationship of previous work experience between those trainees who complete on-the-job training and those who do not.

The two parametric statistical tests, analysis of correlation and analysis of variance, failed to reject as statistically significant null Hypothesis II. The nonparametric test, chi square, established a slight relationship for null Hypothesis II that there is no statistically significant relationship of previous work experience between trainees who complete on-the-job training and those who do not.

There is probably a slight relationship between prior work experience and success of on-the-job training which was detected by chi
square. Despite the chi square value of 5.8, the relationship for all practical purposes would not be statistically significant, and null Hypothesis II cannot be rejected.

**Hypothesis III -- Sex (Male and Female)**

There is no statistically significant relationship between males and females concerning completion of on-the-job training.

Of the sixty trainees, thirty-eight or sixty-three per cent were women; twenty-two or thirty-seven per cent were men. Thirty-four of the trainees or fifty-seven per cent completed the ninety-day on-the-job training program. Of the thirty-four who completed the project, seven or twenty-one per cent were men, and twenty-seven or seventy-nine per cent were women.

**TABLE 8**

<table>
<thead>
<tr>
<th>Male and Female Trainees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>TOTALS</td>
</tr>
</tbody>
</table>

If a comparison of the successful male and female trainees is made to the total sixty participants, the seven men make up eleven per cent.
The twenty-seven women represent forty-five per cent of the thirty-four trainees who completed the ninety-day on-the-job training period. If the seven successful men are averaged with the total of twenty-two men who participated in the project, there are thirty-two per cent successful. If the twenty-two successful women are averaged with the total of thirty-eight women in the project, there are seventy-one per cent who are successful.

In the data above, the males are represented by smaller percentages of success than are the female trainees. If a comparison is made to the total sixty participants, there is a difference of thirty-four per cent between the eleven per cent for the seven successful men and the forty-five per cent for the twenty-seven successful women. If a comparison is made on the basis of percentages of the seven successful men to the total twenty-two men as to the twenty-seven successful females to the total thirty-eight women, the difference is forty-eight per cent in favor of the women, when the thirty-three per cent of the successful men is subtracted from the seventy-one per cent representing the successful women.

Since sex constitutes qualitative rather than quantitative information and is treated in a nominal manner, a correlation analysis has no meaning. No coefficient of correlation was calculated by the computer, and no analysis of correlation was used to test null Hypothesis III.
Analysis of Variance for Sex

An analysis of variance was computed to test null Hypothesis III, which states that there is no statistically significant relationship between males and females concerning completion of on-the-job training. The analysis of variance table is as follows:

| TABLE 9 |
|------------------|------------------|------------------|------------------|
| Variance of Sex  |                  |                  |                  |
| Groups           | Sum of Squares   | Degree of Freedom| Mean Square      | F Statistic      |
| Between          | 2.0284           | 1                | 2.0284           | 9.8820           |
| Within           | 11.9050          | 58               | 0.2053           |                  |
| TOTAL            | 13.9334          | 59               |                  |                  |

The ratio of the between group to the within group mean square gives a value to F of 9.8820. The tabulated F ratio for 1 and 58 degrees, respectively, is 4.00 at ninety-five per cent confidence level. Since the computed value of 9.8820 exceeds the tabulated value of 4.00, the null hypothesis that there is no statistically significant relationship between males and females concerning completion of on-the-job training is rejected. Sex of the trainees does make a difference, and the data as shown in Table 4 indicates that the training program was more effective with women than with men in accomplishing its objectives.

37 Dixon and Massey, op. cit., p. 388 (Table 7A).
Chi Square Test for Sex

There were thirty-eight women and twenty-two men who completed the educational component of the project. Twenty-seven women and seven men completed the on-the-job training program. Eleven women and fifteen men were terminated prior to completing on-the-job training.

TABLE 10

<table>
<thead>
<tr>
<th></th>
<th>Completed OJT</th>
<th>Terminated OJT</th>
<th>TOTALS</th>
<th>x²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above</td>
<td>27 (21.4)</td>
<td>11 (16.6)</td>
<td>38</td>
<td>9.1</td>
</tr>
<tr>
<td>Below</td>
<td>7 (12.6)</td>
<td>15 (9.4)</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>TOTALS</td>
<td>34</td>
<td>26</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

The value of chi square was computed and found to be 9.1. According to the Fisher probability table, in order to be significant at the .05 level with one degree of freedom, a chi square of 3.84 is required. With a value of 9.1, the decision was to reject null Hypothesis III that there is no statistically significant relationship between males and females concerning completion of on-the-job training. Sex of the trainees does make a difference, and the data as shown in Table 4 indicates that the training program was more effective with women than with men in accomplishing its objectives.

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38 Siegel, op. cit., p. 107.
39 Johnson, op. cit., p. 212.
Summary of Statistical Analysis of Data on Hypothesis III

1. The computed F ratio of 9.8820 from the analysis of variance table was sufficient to establish a statistically significant relationship at the ninety-five per cent level, so Hypothesis III is rejected.

2. The computed chi square of 9.1 from the two-way table was sufficient to establish a statistically significant relationship for null Hypothesis III to be rejected.

The parametric statistical test for analysis of variance and the nonparametric test, chi square, both established a statistically significant relationship that sex did influence the completion of on-the-job training. In all the data presented, females were more successful than males.

Hypotheses IV -- Project Attendance

There is no statistically significant relationship between attendance during the project and completion of on-the-job training.

The sixty trainees missed an average of three days during the eight-week educational component training period. The thirty-eight women averaged 3.13 days absent, and the twenty-two men averaged 2.17 days absent. The seven men who successfully completed the ninety-day on-the-job training period had the least number of days absent, with
a mean of 1.71 days, while the twenty-seven successful women averaged 2.88 days absent during the eight-week program.

The thirty-four trainees who completed the on-the-job training program were absent, on the average, 2.65 days. The twenty-six participants who were terminated during the on-the-job training were absent an average of 3.46 days. Those who did not complete the training period missed, on the average, .71 days more than those who completed on-the-job training.

**TABLE II**

*Project Attendance Record*

<table>
<thead>
<tr>
<th>Days Absent</th>
<th>0-1</th>
<th>2-3</th>
<th>4-5</th>
<th>6-7</th>
<th>8-9</th>
<th>10-11</th>
<th>12-13</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed</td>
<td>10</td>
<td>13</td>
<td>8</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>34</td>
</tr>
<tr>
<td>Trainees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terminated</td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>TOTALS</td>
<td>18</td>
<td>21</td>
<td>12</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>60</td>
</tr>
</tbody>
</table>

**Analysis of Correlation for Attendance**

The coefficient of correlation for days absent during the eight-week educational component part of the project as calculated by the computer was -0.1962. From Table 27A of Dixon and Massey, a sample correlation of -0.1962 is not sufficiently different from zero to reject a hypothetical population correlation of zero with ninety-five
Null Hypothesis IV, which states that there is no statistically significant relationship between attendance during the project and completion of on-the-job training, cannot be rejected, based on a correlation of -0.1962 at a confidence level of ninety-five per cent.

Analysis of Variance for Attendance

An analysis of variance was also computed to test null Hypothesis IV that there is no statistically significant relationship between attendance during the project and completion of on-the-job training. The analysis of variance table is as follows:

<table>
<thead>
<tr>
<th>Groups</th>
<th>Sum of Squares</th>
<th>Degree of Freedom</th>
<th>Mean Square</th>
<th>F Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>9.7738</td>
<td>1</td>
<td>9.7738</td>
<td>1.3055</td>
</tr>
<tr>
<td>Within</td>
<td>434.2262</td>
<td>58</td>
<td>7.4867</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>444.0000</td>
<td>59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The ratio of the between groups to the within groups mean square gives a value to F of 1.3055. The tabulated F ratio for 1 and 58

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40 Dixon and Massey, *op. cit.*, p. 464 (Table 27A).
degrees, respectively, is 4.00 at ninety-five per cent confidence level. Since the computed value 1.3055 does not exceed the tabulated value of 4.00, the null Hypothesis IV that there is no statistically significant relationship between attendance during the project and completion of on-the-job training cannot be rejected.

Chi Square Test for Attendance

The sixty trainees were absent an average of three days during the project. Of the thirty-four participants who completed on-the-job training, fifteen were above the average of three days absent and nineteen were below this average. Of the twenty-six trainees who terminated prior to completing the on-the-job training period, eleven were above the three-day average and fifteen were below this average.

TABLE 13
Chi Square for Attendance

<table>
<thead>
<tr>
<th>Average</th>
<th>Completed OJT</th>
<th>Terminated OJT</th>
<th>TOTALS</th>
<th>$x^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
<td>15 (17)</td>
<td>11 (9)</td>
<td>26</td>
<td>1.0</td>
</tr>
<tr>
<td>Below</td>
<td>19 (17)</td>
<td>15 (17)</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>TOTALS</td>
<td>34</td>
<td>26</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

41 Ibid., p. 388 (Table 7A).
The value of chi square was computed and found to be +1.0.\textsuperscript{42} According to the Fisher probability table, in order to be significant at the .05 level with one degree of freedom, a chi square of 3.84 is required.\textsuperscript{43} With a value of +1.0, the decision was made not to reject null Hypothesis IV that there is no statistically significant relationship between attendance during the project and completion of on-the-job training.

**Summary of Statistical Analysis of Data on Hypothesis IV**

1. The computed coefficient of correlation of -0.1962 was found not to be significantly different than zero with ninety-five per cent confidence.

2. The computed F ratio of +1.3055 from the analysis of variance table was not sufficient to establish a statistically significant relationship at the ninety-five per cent confidence level.

3. The computed chi square of +1.0 from the two-way contingency table was not sufficient to establish a statistically significant relationship to project attendance and the success of on-the-job training.

   All three statistical tests have uniformly failed to reject as statistically significant the null Hypothesis IV that there is no statistically significant relationship between attendance during the project and completion of on-the-job training.

\textsuperscript{42}Siegel, \textit{op. cit.}, p. 107.

\textsuperscript{43}Johnson, \textit{op. cit.}, p. 212.
Hypothesis V -- Age

There is no statistically significant relationship in age between trainees who complete on-the-job training and those who do not.

There were thirty-eight women and twenty-two men enrolled in the project. Sixty-three per cent were women, while thirty-seven per cent of the sixty participants were men. The mean age for the sixty participants was 25.1 years. The average age for the twenty-two men, 25.3 years, was slightly higher than the average age for the thirty-eight women, which was 25.0 years.

The average age for the seven successful men was 26.8 years, as compared to 24.5 years for those who did not complete the ninety-day training period. The twenty-seven successful women had an average age of 23.6 years, while the unsuccessful women averaged 28.5 years of age. This shows that the older men and the younger women were more successful in the ninety-day follow-up study.

The average age for the thirty-four successful trainees in the project was 24.3 years. The twenty-six unsuccessful participants had an average age of 26.2. The unsuccessful trainee was, on the average, 1.9 years older than the successful trainee.
TABLE 14

Age as Compared to On-the-Job Training

<table>
<thead>
<tr>
<th>Years of Age</th>
<th>16-19</th>
<th>20-23</th>
<th>24-27</th>
<th>28-31</th>
<th>32-35</th>
<th>36-39</th>
<th>40-up</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>34</td>
</tr>
<tr>
<td>Terminated</td>
<td>9</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>26</td>
</tr>
<tr>
<td>TOTAL</td>
<td>18</td>
<td>14</td>
<td>11</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>60</td>
</tr>
</tbody>
</table>

Analysis of Correlation for Age

The coefficient of correlation for the significance of age between trainees who completed on-the-job training and those who did not, as calculated by the computer, was -0.1350. From Table 27A of Dixon and Massey, a sample correlation of -0.1350 is not sufficiently different from zero to reject a hypothetical population correlation of zero with ninety-five per cent confidence. Null Hypothesis V concerning age cannot be rejected, based on a correlation of -0.1350 at a confidence level of ninety-five per cent.

Analysis of Variance for Age

An analysis of variance was computed to test null Hypothesis V that there is no statistically significant relationship in age between

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44 Dixon and Massey, *op. cit.*, p. 464 (Table 27A).
trainees who complete on-the-job training and those who do not. The analysis of variance table is as follows:

**TABLE 15**

**Variance of Age**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Sum of Squares</th>
<th>Degree of Freedom</th>
<th>Mean Square</th>
<th>F Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>54.7435</td>
<td>1</td>
<td>54.7435</td>
<td>1.0293</td>
</tr>
<tr>
<td>Within</td>
<td>3084.6559</td>
<td>58</td>
<td>53.1837</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>3139.3994</td>
<td>59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The ratio of the between groups to the within groups mean square gives a value to F of +1.0293. The tabulated F ratio for 1 and 58 degrees, respectively, is 4.00 at a ninety-five per cent confidence level. Since the computed value of +1.0293 does not exceed the tabulated value of 4.00, null Hypothesis V that there is no statistically significant relationship in age between trainees who complete on-the-job training and those who do not cannot be rejected.

**Chi Square Test for Age**

The sixty participants were, on the average, 25.1 years of age. Of the thirty-four who completed on-the-job training, nine were above

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Ibid., p. 388 (Table 7A).
the average age of 25.1 years and twenty-five were below this average age. Of the twenty-six who were unsuccessful and were terminated prior to completing on-the-job training, twelve were above and fourteen below the average of 25.1 years.

TABLE 16

Chi Square for Age

<table>
<thead>
<tr>
<th>Average</th>
<th>Completed OJT</th>
<th>Terminated OJT</th>
<th>TOTALS</th>
<th>x²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
<td>9 (11.9)</td>
<td>12 (9.1)</td>
<td>21</td>
<td>2.5</td>
</tr>
<tr>
<td>Below</td>
<td>25 (22.1)</td>
<td>14 (16.9)</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>34</td>
<td>26</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

The value of chi square was computed and found to be +2.5. According to the Fisher probability table, in order to be significant at the .05 level with one degree of freedom, a chi square value of 3.84 is required. With a value of +2.5, the decision was made not to reject null Hypothesis V that there is no statistically significant relationship in age between trainees who complete on-the-job training and those who do not.

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46 Siegel, op. cit., p. 107.
47 Johnson, op. cit., p. 212.
Summary of Statistical Analysis
of Data on Hypothesis V

1. The computed coefficient of correlation of -0.1350 was found not to be significantly different than zero with ninety-five per cent confidence.

2. The computed F ratio of +1.0293 from the analysis of variance table was not sufficient to establish a statistically significant relationship at the ninety-five per cent confidence level.

3. The computed chi square of +2.5 from the two-way contingency table was not sufficient to establish a statistically significant relationship to age and success of on-the-job training.

All three statistical tests have uniformly failed to reject as statistically significant the null Hypothesis V that there is no statistically significant relationship in age between trainees who complete on-the-job training and those who do not.

Hypothesis VI -- Project Achievement

There is no statistically significant relationship between the pre and post Metropolitan Achievement Test scores and completion of the on-the-job training period.

The mean score on the Metropolitan Achievement Test was determined for both the pre and the post test by adding the grade level of achievement for word knowledge, reading ability, arithmetic computation,
and arithmetic problem-solving and determining the average for each participant. For the sixty trainees, the average achievement was .445 grade level, or from grade level 7.09 to 7.53. Traditionally, use of grade equivalents has been the most common method of interpreting results of achievement tests.

The thirty-eight women in the project averaged a gain of .507 grade level, from 7.14 to 7.65, during the eight weeks of training. The twenty-two men improved .336 grade level, from 7.00 to 7.34. The seven successful men had the lowest pre-test grade level of 6.94, but increased this .442 grade level for a post-score of 7.42. The fifteen unsuccessful men had the least grade level achievement of all the participants, with a .286 increase, or from 7.01 to 7.30 grade level.

The twenty-seven successful women had a mean pre-grade level of 7.43 and a mean post-grade level of 7.87, or a gain of .433 grade level. The eleven unsuccessful women had the greatest increase in grade level achievement of all the participants, with an average gain of .690 in grade level, or from grade 6.41 to 7.10. These data for the trainees indicate that the unsuccessful women had the greatest average grade level achievement of .690, while the unsuccessful men had the least gain of .286 grade level.
TABLE 17

Project Achievement as Measured by Grade Level Increase on the Pre and Post Metropolitan Achievement Test Scores

<table>
<thead>
<tr>
<th>Sex</th>
<th>Successful</th>
<th>Unsuccessful</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Average</td>
<td>Number</td>
</tr>
<tr>
<td>Female</td>
<td>27</td>
<td>+.433</td>
<td>11</td>
</tr>
<tr>
<td>Male</td>
<td>7</td>
<td>+.442</td>
<td>15</td>
</tr>
<tr>
<td>TOTAL</td>
<td>34</td>
<td>+.438</td>
<td>26</td>
</tr>
</tbody>
</table>

The thirty-four participants who completed the ninety-day on-the-job training program increased their achievement .438 grade level. The twenty-six unsuccessful trainees who did not complete the on-the-job training program increased their achievement during the eight-week project by an average of .489, an increase of .051 grade level more than the successful trainees. The twenty-six unsuccessful trainees achieved slightly better academically during the eight-week program than the thirty-four successful participants, as measured by grade-level placement on the Metropolitan Achievement Test.

Analysis of Correlation for Achievement

The coefficient of correlation for achievement as measured by the pre and post Metropolitan Achievement Test scores as calculated by the computer was -0.0490. From Table 27A of Dixon and Massey, a sample
correlation of -0.0490 is not sufficiently different from zero to reject a hypothetical population correlation of zero with ninety-five per cent confidence. Null Hypothesis VI that there is no statistically significant relationship between the pre and post Metropolitan Achievement Test scores and completion of the on-the-job training period cannot be rejected, based on a correlation of -0.0490 at a confidence level of ninety-five per cent.

**Analysis of Variance for Achievement**

An analysis of variance was computed to test null Hypothesis VI concerning achievement. The analysis of variance table is as follows:

<table>
<thead>
<tr>
<th>Groups</th>
<th>Sum of Squares</th>
<th>Degree of Freedom</th>
<th>Mean Square</th>
<th>F Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>.0074</td>
<td>1</td>
<td>.0074</td>
<td>.0157</td>
</tr>
<tr>
<td>Within</td>
<td>27.7412</td>
<td>58</td>
<td>.4783</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>27.7486</td>
<td>59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The ratio of the between groups to the within groups mean square gives a value to F of .0157. The tabulated F ratio for 1 and 58

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48 Dixon and Massey, *op. cit.*, p. 464 (Table 27A).
degrees, respectively, is 4.00 at a ninety-five per cent confidence level.\textsuperscript{49} Since the computed value of +.0157 does not exceed the tabulated value of 4.00, null Hypothesis VI that there is no statistically significant relationship between pre and post Metropolitan Achievement Test scores and completion of the on-the-job training period cannot be rejected.

**Chi Square Test for Achievement**

The sixty participants completed an average of +.445 grade level between the pre and post Metropolitan Achievement Test scores. Of the thirty-four trainees who completed on-the-job training, fifteen were above the average and nineteen were below the average of +.445. Of the twenty-six who did not complete on-the-job training, thirteen were below the average and thirteen were above the average of +.445.

**TABLE 19**

**Chi Square for Achievement**

<table>
<thead>
<tr>
<th>Average</th>
<th>Completed OJT</th>
<th>Terminated OJT</th>
<th>TOTALS</th>
<th>$x^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
<td>15 (15.9)</td>
<td>13 (12.1)</td>
<td>28</td>
<td>.28</td>
</tr>
<tr>
<td>Below</td>
<td>19 (8.1)</td>
<td>13 (13.9)</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>34</td>
<td>26</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{49}Ibid., p. 388 (Table 7A).
The value of chi square was computed and found to equal +.28.\(^50\) In order to be significant, according to the Fisher probability table, at the .05 level with one degree of freedom, a chi square value of 3.84 is required.\(^51\) With a value of +.28, the decision was made not to reject null Hypothesis VI that there is no statistically significant relationship between the pre and post Metropolitan Achievement Test scores and completion of the on-the-job training period.

**Summary of Statistical Analysis of Data on Hypothesis VI**

1. The computed coefficient of correlation of -0.0490 was found not to be significantly different from zero with ninety-five per cent confidence.

2. The computed F ratio of +.0157 from the analysis of variance table was not sufficient to establish a statistically significant relationship at the ninety-five per cent confidence level.

3. The computed chi square of +.28 from the two-way contingency table was not sufficient to establish a statistically significant relationship between the pre and post Metropolitan Achievement Test scores and completion of the on-the-job training period.

All three statistical tests have uniformly failed to reject as statistically significant null Hypothesis VI that there is no

\(^{50}\) Siegel, *op. cit.*, p. 107.

\(^{51}\) Johnson, *op. cit.*, p. 212.
statistically significant relationship between the pre and post
Metropolitan Achievement Test scores and completion of the on-the-job
training period.

**Summary and Conclusions**

Hypothesis Number I states that there is no statistically signifi­
cant relationship between grade level completed in school and the
success of participants during on-the-job training. Hypothesis Num­
ber I is not rejected by the statistical analysis in this research.

Hypothesis Number II states that there is no statistically signifi­
cant relationship in the amount of previous work experience between
trainees who complete on-the-job training and those who do not.
Hypothesis Number II is not rejected on the basis of the statistical
analysis in this research.

Hypothesis Number III, which states that there is no statistically
significant relationship between males and females concerning comple­
tion of on-the-job training, is rejected. Based upon the statistical
analysis of this research, females were more successful than males
during this project.

Hypothesis IV states that there is no statistically significant
relationship between attendance during the project and completion of
on-the-job training. Hypothesis IV concerning attendance is not re­
jected by the statistical analysis of this research.
Hypothesis Number V is concerned with the relationship in age between trainees who complete on-the-job training and those who do not. Hypothesis Number V is not rejected by the statistical analysis of this research.

Hypothesis Number VI, which states that there is no relationship between the pre and post Metropolitan Achievement Test scores and completion of on-the-job training by the participants, is not rejected. The difference between those successful and unsuccessful trainees was negligible and is insufficient to disprove Hypothesis Number VI.

A summary of the findings shows:

1. Grade level completed by the trainee had no relationship to success during the ninety-day on-the-job training period.

2. Work experience by the trainee prior to the eight-week educational period had no relationship to his success during the follow-up ninety-day on-the-job training period.

3. Females were more successful than males, based upon the data collected during the project.

4. The number of days absent during the eight-week training period had no relationship to success by the trainee during the ninety-day on-the-job training program.

5. Age of the trainees in the project had no relationship to success in the on-the-job training period.

6. Achievement as measured during the eight-week program and post Metropolitan Achievement Test scores had no relationship to the success or failure of completion of the ninety-day on-the-job training period.
A check of all sixty participants in the Manpower Training Project in October of 1969 revealed that twenty-nine were still working for their original employer. This means that thirty-one trainees had been terminated. Six of the original seven men who completed the ninety-day on-the-job training program and twenty-three of the original twenty-seven women were still working for the companies which had hired them from the project.

The Columbus Urban League officials report that, in their routine employment practices, there is a forty per cent retention of those placed without any preparation or training. The Ohio State Project had a forty-eight per cent retention for the trainees, most of whom had a negative educational and occupational background before participating in the eight-week program. These data indicate that the participants in the project were more successful than the routine worker placed in on-the-job training by the Columbus Urban League employment service without pre--on-the-job training.\(^52\)

Chilson, in his dissertation on the same project but concerned with only twenty-one trainees in the first section, arrived at similar conclusions. Chilson concluded that:

1. There was no significant difference in age between trainees who completed on-the-job training and those who did not.

2. Women were more likely to complete on-the-job training than men.

\(^{52}\) Columbus Urban League, op. cit., p. 3.
3. There was no significant difference in educational development between trainees who complete on-the-job training and those who do not.

4. Trainees with less work experience are more likely to complete on-the-job training.\textsuperscript{53}

\textsuperscript{53} Chilson, \textit{op. cit.}, pp. 76-84.
IV.

IMPLICATIONS FOR FUTURE RESEARCH

The time, money, and effort that was spent by the Manpower Training Project at The Ohio State University can be justified in terms of the success of the trainees who completed the program. According to the Columbus Urban League, the retention of the trainees employed was eight per cent greater than the normal employment practices. This could be the greatest measure of the success of the project. The fact that eighty-five per cent of those participants who completed the ninety-day training period were still employed by the original employer in October of 1969 indicates the degree of success of the original program.

The program initially was organized around an academic educational component in order to increase the literacy level of the participants. The results of this study indicate that this area is not that important and that grade level achievement as measured by the pre and post Metropolitan Achievement Test scores was not significant in success on the ninety-day on-the-job training period.

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54 Columbus Urban League, op. cit., p. 3.
More attention and research in the future need to be given to such factors as attitudes, habits, customs, mores, and patterns of behavior that are learned early in life. These appear to have greater relationship to success or failure on the job than age, sex, or education. Future projects should also spend more time working in areas to see what can be done to develop proper relationships between employers and employees.

Eight weeks was a very short time in which to accomplish the objectives undertaken by the staff and participants of The Ohio State Manpower Project. A longer period of training is essential to the success of such educational projects. A longer work-study plan could be effectively used in future training programs of this kind.

The problems created in the recruiting and placing of trainees by an agency other than the one that was actually doing the educational training during the eight-week period should also be resolved in future projects and research efforts. Results might be improved if all aspects of such a program were controlled by one organization.

There is still much to be done in this area. Any additional research done in this area can profit from the experience that has been gained by the data and analysis recorded by the Manpower Training Project at The Ohio State University in 1969. This research lays the foundation from which future projects may profit and upon which they may build.
APPENDIX A

QUESTIONNAIRE FOR
DEMOGRAPHIC DATA CONCERNING TRAINEES
The Ohio State University
Manpower Development and Training
Research Program

QUESTIONNAIRE

Directions: Please complete the following items. The information you provide will be kept confidential and will only be used by the staff to identify and serve the groups participating in the program. Thank you for your cooperation.

Part I - General Information

1. Name ____________________________________ 2. Date __________________
   Last    First    Middle

3. Address ____________________________________
   Street
   ____________________________________
   City  State  Zip Code

4. Telephone No.__________________________ 5. Social Sec. No.__________________________
6. Date of Birth__________________________ 7. Place of Birth__________________________
8. Height_______ 9. Weight__________ 10. Sex: Male____ Female____
11. Are you a veteran of the military? Yes_____ No_____ 
12. If a veteran, what were the dates of service? From____ To_____ 
13. What is your present draft status? __________________________
14. Are you the head of your household? __________________________
15. Present Source of Income__________________________ Amount________________________
16. Have you ever been hospitalized? _________ If so, when? ________
   For what purposes? Operations? _________ Other _________

17. Have you had any major illnesses in the last year? ___________
   2 years ________, 3 years ________. Indicate illness________

18. Have you ever been convicted of a crime? Yes____ No____ If so, 
   what was the nature of the crime? __________________________
Part II - Family History

1. Are your parents: (check the appropriate blank)
   - living together______
   - divorced______
   - separated______
   - remarried______
   - deceased______ (specify father, mother, or both and date)

2. Please provide the following information about your parents.
   - Father's name_____________________
   - Mother's name_____________________
   - Address___________________________
   - Address___________________________
   - Father's occupation:_________________
   - Mother's occupation:_________________
   - Father's education:_________________
     (Grade achieved by father)
   - Mother's education:_________________
     (Grade achieved by mother)

3. How many sisters do you have? ___________ brothers? ___________

4. What are their ages? _________________________________

5. What is your marital status? (check one)
   - single______
   - married______
   - divorced______
   - separated______
   - widowed______
   - remarried______

6. Do you have any children? Yes______ No______

7. If so, how many children do you have? ___________.
   Please list their names and ages: ______________________________

8. If there are children living in your home other than your own, please indicate their ages:____________________________

9. List the addresses where you have lived in the past two years and the dates living at each residence:

   From___________________________ To ________________________________
10. How many adults live in your home? __________________________

Part III - Education

1. What is the highest grade level you have completed? __________
2. Where did you receive your elementary and secondary education?

3. If you are married, what is the highest grade your spouse has completed? __________

4. If you completed high school, in what year did you graduate? ______

5. (a) If you did not complete high school, in what year did you leave school? ______

(b) What was your reason for leaving school? ________________

6. Have you ever received any occupational or vocational training?

   Yes ______   No ______

7. If you have received such training, please describe the training by providing the following information.

   Type of Training    School or Agency    Date Completed
   
   A. ____________________________

   B. ____________________________

(If you need additional space, please use the back of page.)
Part IV - Occupational Experience

1. How many jobs have you held in the past year? ____________
   2 years?__________  5 years?__________

2. Describe the three most recent jobs held by providing the following information. (List most recent job first.)

<table>
<thead>
<tr>
<th>Date</th>
<th>Type of Job</th>
<th>Rate of Pay</th>
<th>Reason for Leaving</th>
<th>Beginning-Ending</th>
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</tr>
<tr>
<td>B</td>
<td></td>
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<td>C</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   (If you need additional space, please use the back of this page.)

3. Did you receive unemployment compensation during the period of your unemployment? ____________

4. (a) If you are married, is your spouse employed?

   Yes_______ No_______

   (b) If so, what is your spouse's occupation? ________________
APPENDIX B

QUESTIONNAIRE FOR SUPERVISORS OF ON-THE-JOB TRAINEES
Overview

This is an evaluation report to be completed by the employee's immediate supervisor. The purpose for the report is to assess employee progress in the hope of modifying our pre-employment training program to facilitate on-the-job success.

The report consists of several questions and ratings pertaining to the employee's performance as compared to that of employees starting at a comparable level without extensive training or work experience. If questions arise, please don't hesitate to call the Columbus Urban League, 252-5266.
1. How many days, if any, has the employee been absent from work? List any reasons given for being absent.

2. How many times, if any, has the employee been late in reporting to work, including after breaks and lunch? List any reasons given for being late.

3. Rate the employee's:
   a. Personal appearance and neatness on the job.

   / / / 
   excellent above av. average below av.

   b. Personal conduct while at work.

   / / / 
   excellent above av. average below av.

   c. Ability to follow directions.

   / / / 
   excellent above av. average below av.

   d. Willingness to ask questions whenever in doubt about the job.

   / / / 
   excellent above av. average below av.

   e. Willingness to accept and carry out job responsibilities, especially in the absence of supervision.

   / / / 
   excellent above av. average below av.

   f. Ability to get along with the employer and other employees in completing work assignments.

   / / / 
   excellent above av. average below av.
g. Initiative in seeking additional assignments when the need arises.

   _______/_______
   excellent  above av. average below av.

h. Willingness to accept constructive criticism.

   _______/_______
   excellent  above av. average below av.

i. Attitude and interest toward work.

   _______/_______
   excellent  above av. average below av.

4. In considering all of the items above, would you recommend that this employee be:

   _________/_______
   promoted retained retained but dismissed on probation

5. At this stage of development, does the employee possess the information needed in performing the job?

   Yes__  No___

   If not, what additional information or special training should the employee have received prior to employment?

6. List any personal characteristics which you feel should be improved in order to enhance the employee's chances for success and advancement.
APPENDIX C

SUMMARY CHART OF
PROJECT DATA
## SUMMARY CHART OF PROJECT DATA

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<thead>
<tr>
<th>Student Number</th>
<th>Age</th>
<th>Sex</th>
<th>Grade Level</th>
<th>Achievement</th>
<th>Project in Project</th>
<th>Months of Prior</th>
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<td></td>
<td></td>
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### SUMMARY CHART OF PROJECT DATA, continued

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**TOTALS** 1506 651 26.7 180 2290 3709

**AVERAGE** 25.1 years 10.85 grade .445 imp. 3 days 38.1 months 61.8 days

22 men 27 women completed OJT
38 women 34 completed OJT = 90 days 7 men completed OJT

---

81
APPENDIX D

SUMMARY CHART FOR
CORRELATION AND MEANS
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<th>Total Project</th>
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<th>Post-Test</th>
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BIBLIOGRAPHY


Task Force on Job Opportunities and Welfare. "Barriers to Jobs."


