

STRATMORE PARCHEMENT

100 N. 3rd St. U.S.A.

A FOLLOW-UP STUDY

OF STUDENTS OF OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE

WHO RECEIVED TRAINING IN

PUNCH-CARD MACHINE THEORY AND OPERATION

DURING THE YEARS 1938 TO 1946, INCLUSIVE

STRATMORE

WT

100

A FOLLOW-UP STUDY  
OF STUDENTS OF OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE  
WHO RECEIVED TRAINING IN  
PUNCH-CARD MACHINE THEORY AND OPERATION  
DURING THE YEARS 1938 TO 1946, INCLUSIVE

by

OLIVER M. ROBERTSON, JR.

Bachelor of Science

East Central State College

Ada, Oklahoma

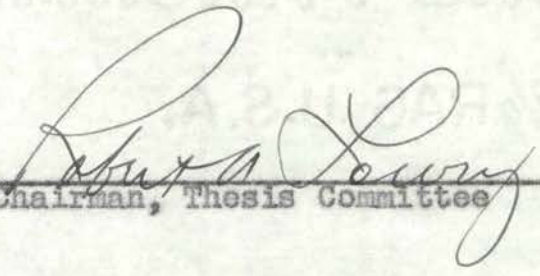
1940

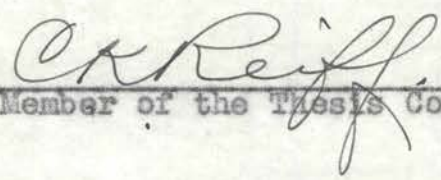
Submitted to the Department of Business Education  
Oklahoma Agricultural and Mechanical College  
In Partial Fulfillment of the Requirements  
for the Degree of  
MASTER OF SCIENCE

1947


OKLAHOMA  
AGRICULTURAL & MECHANICAL COLLEGE  
LIBRARY  
DEC 8 1947

APPROVED BY:

  
Chairman, Thesis Committee

  
Member of the Thesis Committee

  
Head of the Department

  
Dean of the Graduate School

205263

## ACKNOWLEDGMENT

The writer wishes to express his sincere appreciation to Chester L. McCannon and Roy McMillon for their assistance and encouragement.

Most deeply and most directly, the writer is indebted to Robert A. Lowry, Chairman of the Thesis Committee, Department of Business Education, for his guidance and many suggestions so unstintingly given.

Acknowledgment is made to Clarence H. Lundquest for his assistance in the final preparation of the manuscript.

O. M. R., Jr.

TABLE OF CONTENTS

|  | PAGE |
|--|------|
| LIST OF TABLES . . . . .                                 | vi   |
| ABSTRACT . . . . .                                       | x    |
| CHAPTER  |      |
| I. INTRODUCTION . . . . .                                | 1    |
| Need for the Study . . . . .                             | 1    |
| Purpose . . . . .  | 2    |
| Sources of Data . . . . .                                | 3    |
| Scope and Limitations . . . . .                          | 3    |
| Procedure . . . . .                                      | 4    |
| Questionnaire Returns . . . . .                          | 8    |
| II. THE QUESTIONNAIRE AND THE RESPONSE . . . . .         | 15   |
| III. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS . . . . . | 63   |
| Employment Status . . . . .                              | 64   |
| Utilization and Value of Punch-Card                      |      |
| Machine Training . . . . .                               | 65   |
| Income . . . . .   | 65   |
| Education . . . . .                                      | 66   |
| Growth of Enrollment in Punch-Card                       |      |
| Machine Theory and Operation . . . . .                   | 67   |
| Placement Service . . . . .                              | 67   |
| Conclusions . . . . .                                    | 68   |
| Recommendations . . . . .                                | 69   |
| BIBLIOGRAPHY . . . . .                                   | 71   |
| APPENDIX . . . . .                                       | 73   |

## LIST OF TABLES

| TABLE  | PAGE |
|--|------|
| I. REPLIES TO POSTAL REPLY CARDS AND NUMBER OF COMPLETE AND INCOMPLETE QUESTIONNAIRES RETURNED, CLASSIFIED ACCORDING TO YEAR IN WHICH TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION WAS RECEIVED. . . . .            | 9    |
| II. COMPLETE QUESTIONNAIRES RETURNED BY MEN WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE . . . . .  | 11   |
| III. COMPLETE QUESTIONNAIRES RETURNED BY WOMEN WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE . . . . .   | 12   |
| IV. SCHOLASTIC CLASSIFICATIONS OF RESPONDENTS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE . . . . .  | 13   |
| V. PRESENT JOB STATUS OF 70 GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE . . . . .  | 17   |
| VI. PRESENT JOB STATUS OF NON-GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE, AND WHO ATTAINED THE COLLEGIATE SCHOLASTIC RANK OF SENIOR . . . . .     | 19   |
| VII. PRESENT JOB STATUS OF NON-GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE, AND WHO ATTAINED THE COLLEGIATE SCHOLASTIC RANK OF JUNIOR . . . . .    | 21   |
| VIII. PRESENT JOB STATUS OF NON-GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE, AND WHO ATTAINED THE COLLEGIATE SCHOLASTIC RANK OF SOPHOMORE. . . . . | 22   |

## LIST OF TABLES (Continued)

| TABLE  | PAGE |
|--|------|
| IX. PRESENT JOB STATUS OF NON-GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE, AND WHO ATTAINED THE COLLEGIATE SCHOLASTIC RANK OF FRESHMAN . . . . .                                     | 23   |
| X. SUMMARY OF SUPERVISORY JOB CLASSIFICATIONS FOR STUDENTS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE . . . . .   | 25   |
| XI. SUMMARY OF NON-SUPERVISORY JOB CLASSIFICATIONS FOR STUDENTS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE . . . . .  | 26   |
| XII. INCOME STATUS OF 70 GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE . . . . .   | 30   |
| XIII. INCOME STATUS OF NON-GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE, CLASSIFIED ACCORDING TO THE HIGHEST COLLEGIATE SCHOLASTIC RANKS ATTAINED. . . . .                            | 32   |
| XIV. INCOME STATUS OF RESPONDENTS IN ALL COLLEGIATE CLASSIFICATIONS, BASED ON THE NUMBER OF SEMESTER HOURS OF CREDIT IN PUNCH-CARD MACHINES. . . . .   | 33   |
| XV. A COMPARISON OF JOB CLASSIFICATIONS WITH THE NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN ACCOUNTING BY INDIVIDUALS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE. . . . .                   | 35   |
| XVI. A COMPARISON OF JOB CLASSIFICATIONS WITH THE NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN PUNCH-CARD MACHINE COURSES BY INDIVIDUALS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE . . . . . | 36   |

## LIST OF TABLES (Continued)

| TABLE  | PAGE |
|--|------|
| XVII. RELATIONSHIP OF NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN ACCOUNTING TO THE NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN PUNCH-CARD MACHINE COURSES . . . . .   | 39   |
| XVIII. RELATIONSHIP OF NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN BUSINESS ADMINISTRATION TO THE NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN PUNCH-CARD MACHINE COURSES . . . . .   | 40   |
| XIX. RELATIONSHIP OF NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN ECONOMICS TO THE NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN PUNCH-CARD MACHINE COURSES . . . . .   | 41   |
| XX. RELATIONSHIP OF NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN SECRETARIAL ADMINISTRATION TO THE NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN PUNCH-CARD MACHINE COURSES . . . . .   | 42   |
| XXI. RELATIONSHIP OF SCHOLASTIC MAJORS TO THE NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN PUNCH-CARD MACHINE COURSES. . . . .   | 45   |
| XXII. REPLIES TO THE QUESTION, "ARE YOU NOW USING PUNCH-CARD ACCOUNTING MACHINES?" CLASSIFIED ACCORDING TO THE NUMBER OF SEMESTER HOURS OF CREDIT RESPONDENTS EARNED IN PUNCH-CARD MACHINE COURSES . . . . .   | 47   |
| XXIII. REPLIES TO THE QUESTION, "ARE YOU NOW USING PUNCH-CARD ACCOUNTING MACHINES?" CLASSIFIED ACCORDING TO THE JOB CLASSIFICATIONS OF RESPONDENTS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE . . . . . | 49   |
| XXIV. REPLIES TO THE QUESTION, "ARE YOU NOW USING PUNCH-CARD ACCOUNTING MACHINES?" CLASSIFIED ACCORDING TO THE JOB CLASSIFICATIONS OF GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE . . . . .    | 50   |



## LIST OF TABLES (Continued)

| TABLE  | PAGE |
|--|------|
| XXV. SUMMARY OF ANNUAL INCOMES EARNED BY INDIVIDUALS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE, AND WHO ARE NOW USING PUNCH-CARD MACHINE EQUIPMENT. . . . .  | 52   |
| XXVI. REPLIES TO THE QUESTION, "HAVE YOU RECEIVED ADDITIONAL INSTRUCTION IN BUSINESS SUBJECTS SINCE LEAVING A. & M. COLLEGE?" . . . . .  | 53   |
| XXVII. REPLIES TO QUESTIONS CONCERNING A PLACEMENT SERVICE FOR PUNCH-CARD MACHINE OPERATORS, AS GIVEN BY RESPONDENTS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE . . . . .   | 56   |
| XXVIII. REPLIES TO THE QUESTION, "HAS THE TRAINING YOU RECEIVED IN PUNCH-CARD MACHINE OPERATION BEEN OF BENEFIT IN YOUR VOCATIONAL PROGRESS?" CLASSIFIED ACCORDING TO THE JOB CLASSIFICATIONS OF RESPONDENTS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE . . . . . | 59   |
| XXIX. REPLIES TO THE QUESTION, "HAS THE TRAINING YOU RECEIVED IN PUNCH-CARD MACHINE OPERATION BEEN OF BENEFIT IN YOUR VOCATIONAL PROGRESS?" CLASSIFIED ACCORDING TO THE JOB CLASSIFICATIONS OF GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE . . . . .     | 60   |

## ABSTRACT

### The Problem

It is the purpose of this study to ascertain by the normative-survey method the educational and vocational status of students who received training in Punch-Card Machine Theory and Operation during the years 1938 to 1946, inclusive, at Oklahoma Agricultural and Mechanical College.

An incidental purpose of the study is to acquaint the former students of punch-card machine courses with the placement service for punch-card machine operators which was recently established in the Business Machines Section of the Department of Business Administration, Division of Commerce, Oklahoma Agricultural and Mechanical College.

### Procedure and Sources of Data

A list of students who received instruction in Punch-Card Machine Theory and Operation was compiled from the permanent class rolls in the Office of Admissions.

Individual permanent record files in the Office of Admissions furnished information relevant to each individual's scholastic classification, sex, and the number of semester hours of credit in the respective fields of accounting, business administration, business law, intensive business, economics, secretarial administration, and punch-card machine courses.

Records in the files of the Former Students and Alumni Association were consulted for the addresses necessary to complete the mailing list.

A postal card containing an attached perforated card for convenience in replying was mailed to each of the 362 names on the mailing list. An explanatory message containing a request for cooperation in the study was printed on the postal card.

Upon receipt of a respondent's reply indicating a willingness to cooperate in the study, a questionnaire and a self-addressed envelope were mailed to him. Information from the questionnaire was recorded in key-punch cards and tabulated on an electrical alphabetical accounting machine.

Replies to the original requests--postal cards containing a message requesting cooperation--were returned by 148, or 40.88 per cent, of the 362 originally solicited. Questionnaires were returned by 120 of the 148 individuals who had agreed to cooperate in the study. Fourteen of the questionnaires were not usable in the study. Information from the remaining 106 questionnaires, representing replies of 29.28 per cent of the 362 individuals originally solicited, was tabulated.

#### Selected Findings

1. Nineteen, or 17.9 per cent, of the 106 individuals who replied to the questionnaire reported that they were using punch-card machine equipment.

2. Forty-eight, or 48.5 per cent, of the 99 replies received indicated that the training received in Punch-Card Machine Theory and Operation was of value to the individual in his vocational progress.

3. The 70 graduates had an average job tenure of 4.7 years.

4. The median annual income for the graduates who had established credit in B. A. 400 courses was an amount within the \$3000-\$3499 income bracket. The median annual income for non-graduates was an amount within the \$2000-\$2499 income bracket. The 19 punch-card machine operators, including graduates and non-graduates, received a median annual income of approximately \$3000.

5. The data revealed that 12, or 11.3 per cent, of the 106 individuals who participated in the study received additional organized training in business subjects after leaving Oklahoma Agricultural and Mechanical College. Of these, 9 were graduates.

6. The enrollment in B. A. 400 classes for the year 1946 exceeded by 47 per cent the previous peak enrollment established for those classes in 1940.

7. No unemployment existed among the 106 respondents.

#### General Conclusions

1. Approximately 18 per cent of the respondents included in this study are using punch-card machines in their present occupations.

2. Graduates of Oklahoma Agricultural and Mechanical College who received training in Punch-Card Machine Theory and Operation during the period covered by the study receive, on the average, an amount within the \$3000-\$3499 annual income bracket. Non-graduates who were included in the study receive an amount within the \$2000-\$2499 annual income bracket. Non-graduates receive an annual income somewhere between \$500 and \$1500 less than the graduates.

3. Of the respondents included in the study, about one in ten received additional organized training in business subjects after they left Oklahoma Agricultural and Mechanical College.

4. There appears to be little or no relationship between the number of semester hours of credit earned in punch-card machine courses and present job classifications or incomes of the respondents.

5. About one half of the graduates and a little more than one fourth of the non-graduates included in this study are employed in clerical jobs.

6. The principles learned and the skills acquired by students who complete the course B. A. 400, Punch-Card Machine Theory and Operation, enable them to perform the duties of punch-card machine operators in jobs involving the operation of punch-card machines.

7. The replies to the placement service portion of the questionnaire indicated a definite need for services such as those which the placement service was established to provide.

8. Total enrollment in Punch-Card Machine Theory and Operation classes in Oklahoma Agricultural and Mechanical College has almost doubled since 1940.

9. A high degree of job stability has been established by the graduates included in this study.

CHAPTER I  
INTRODUCTION

Need for the Study

It was already known that certain individuals who had completed the requirements of Punch-Card Machine Theory and Operation<sup>1</sup> were employed in industry. It was known also that a few of these former students were employed and enjoying singular success. Aside from this, little was known of their activities and experiences in industry; of the opinions that they had formed relevant to education; and of their training and its relationship and application to their present employment.

In order that a more complete record of these former students might be obtained, and in view of the fact that no previous follow-up survey of these students had been made, it was believed worthwhile to investigate by means of a study of this type the employment and educational status of students who had received punch-card machine training at Oklahoma Agricultural and Mechanical College. It was also thought desirable to acquaint these former students with a placement service for punch-card machine operators.

---

<sup>1</sup>B. A. 400. Class 2, lab. 2, cr. 3. Prerequisite: Junior standing. The theory and application of electrical punch-card machines in the preparation of accounting and statistical reports; card designing; the preparation and use of codes; organization and supervision of the tabulating department. Bulletin, Oklahoma Agricultural and Mechanical College, General Catalog Issue, 1946-1947 Sessions, p. 330.

### Purpose

One purpose of this follow-up study was to make an investigation of the educational and vocational status of students who had received punch-card machine theory and application instruction at the Oklahoma Agricultural and Mechanical College during the years 1938 to 1946, inclusive, and to determine the extent to which this training had been utilized in the students' post-school business activities.

An incidental purpose of the study was to acquaint the former students with the punch-card machine operator placement service which was recently inaugurated in the Business Machines Section of the Department of Business Administration in the Division of Commerce; and to enlist the cooperation of those former punch-card machine students now employed in supervisory positions in listing with the placement service their job opportunities and job vacancies for punch-card machine operators.

It was assumed in this study that former students now employed in industry were in a position to know the actual qualifications and job training demanded of them by industry. These experiences and qualifications should be studied and utilized in determining the efficacy of the training now given by the Department of Business Administration. Some of these students may have been confronted with situations in which they found their training to be inadequate, and the present students and those who enroll in punch-card machine courses in the future should have the advantage of a curriculum so revised, if necessary, as to give them the



benefit of the experiences and suggestions of former students who have had opportunity to make functional application of their college training.

#### Sources of Data

The data used in this study were secured from (1) the permanent record files in the Office of the Dean of Admissions (2) the class records and individual record files in the Office of the Dean of the Division of Commerce (3) the files and records in the Graduate Office (4) selected students who were enrolled in college at the time this study was made (5) the Former Students and Alumni Association's records and (6) the questionnaires returned by former students. As the majority of students who received punch-card machine training were not enrolled in Oklahoma Agricultural and Mechanical College at the time of this study, the only feasible means of reaching them was by use of the questionnaire, "an important device in normative-survey research, being used to gather information from widely scattered sources."<sup>2</sup>

#### Scope and Limitations

This study was limited to individuals who had completed the requirements of B. A. 400, "Punch-Card Theory and Operation,"<sup>3</sup> during the years 1938 to 1946, inclusive.

---

<sup>2</sup>Carter V. Good, A. S. Barr, and Douglas E. Scates, The Methodology of Educational Research, p. 325.

<sup>3</sup>Bulletin, Oklahoma Agricultural and Mechanical College, loc. cit., p. 330.

No attempt was made to secure information from those students who were enrolled in punch-card machine classes under the supervision of the Navy Department of the Federal Government during the years 1942, 1943, and 1944.

No attempt was made to obtain information from those students who had trained to be key-punch machine operators.<sup>4</sup>

Questionnaires were sent directly to the former students, and no attempt was made to secure employers' evaluations of the adequacy of training or the vocational success of the employees.

#### Procedure

The names of former students who had successfully met the requirements in Punch-Card Machine Theory and Operation<sup>5</sup> during the years 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, and 1946, were obtained from the permanent class rolls in the Office of the Dean of Admissions.

Individual permanent record cards were consulted for certain pertinent data; i.e., address, sex, scholastic classification, and the number of semester hours of credit earned in the respective fields of accounting, business administration and business law, intensive business, economics, secretarial administration, and punch-card theory and operation.

The names and addresses thus obtained were compiled into a mailing list. A postal card, containing an attached

---

<sup>4</sup>Ibid., p. 330.

<sup>5</sup>Ibid., p. 398.

perforated card for convenience in replying, was mailed to each of the students whose names and addresses were included in this list.<sup>6</sup> An explanatory message containing a request for cooperation in this study was written on the postal card.<sup>7</sup> This message carried the signature of the head of the Business Machines Section, Department of Business Administration, Division of Commerce. It was thought that the use of this signature would help to impress the recipient with the importance of the study and thus elicit a greater number of replies.

Upon receipt of the respondent's promise of cooperation, a questionnaire and a stamped, self-addressed return envelope were mailed to him.<sup>8</sup> Before the form and the wording of the questionnaire were finally determined, similar studies and literature concerning questionnaires were reviewed. Items which would secure the desired data for this follow-up study were then selected. These items included requests for such information as:

1. Name. (Supplied from class rolls.)
2. Additional instruction in business subjects since leaving Oklahoma Agricultural and Mechanical College.
3. The following information relevant to the service for punch-card machine operators was requested:
  - a. Was the individual aware of the existence of the placement service for punch-card machine operators?

---

<sup>6</sup>See Appendix, p. 73.

<sup>7</sup>Ibid., p. 73.

<sup>8</sup>Ibid., p. 75.

- b. Had the individual previously used the services of this placement service?
- c. Did the individual desire to use the facilities and services of the placement service?
- d. Had the training received in punch-card machine operation been of benefit in the individual's vocational progress?
- e. Was the individual, at the time of this survey, using punch-card accounting machines?

4. A number of courses in the Division of Commerce were listed. The individual was asked to appraise the courses in terms of their usefulness in his business experience, using number 1 for the greatest value, number 2 for minor value, and 0 for no value.

5. Suggestions for improvement in certain courses were solicited.

6. What was the individual's present employment status?
  - a. Type of position, and title, if any?
  - b. What salary was he receiving?
  - c. How long had he held his present job classification?

A tentative questionnaire incorporating the foregoing items was designed and submitted to the study advisor and the seminar class for criticism. A revised questionnaire incorporating the suggestions of the study advisor and the seminar class was approved for mailing. Eleven of the students who were on the campus were given the questionnaire and a personal interview was arranged with each of these eleven students.

Each student was carefully questioned as to his understanding of the questions as presented in the questionnaire. Since none of these students appeared to experience any difficulty in understanding or correctly answering the questions, it was believed feasible to mail the questionnaire to each of the respondents who had indicated a willingness to participate in the study.

A mailing list was prepared from (1) the permanent record files in the Office of the Dean of Admissions (2) the class records and individual record files in the Office of the Dean of the Division of Commerce (3) the files and records in the Graduate School Office and (4) the Former Students and Alumni Association's records.

The total number of individuals who received training in Punch-Card Machine Theory and Operation during the nine-year period covered by this study and who were therefore included in the mailing list was 362.

The questionnaire was completed in December, 1946. The mailing list was completed in March, 1947, and the postal reply cards soliciting the cooperation of these former students were mailed on or before April 5, 1947.

Immediately upon receipt of a reply card, a questionnaire and a self-addressed stamped envelope were mailed to the respondent. Information from the returned questionnaires was recorded on key-punch cards and tabulated on an electrical alphabetical accounting machine.

## Questionnaire Returns

Table I shows, by years, the number of students who received instruction in Punch-Card Machine Theory and Operation, and a tabulation of the replies returned and the number of complete and incomplete questionnaires returned.

An analysis of Table I reveals that a total of 148 reply cards were returned, representing 40.88 per cent of the 362 postal reply cards mailed. Complete questionnaires were returned by 106 individuals, or 29.28 per cent of the total number solicited. Incomplete questionnaires were returned by 14, or 3.87 per cent. The percentage of response to questionnaires in previous studies of this type indicates a range of from 22.5 per cent to 98.0 per cent.<sup>9</sup>

An inspection of the 14 incomplete questionnaires revealed that 11 were from students on the campus who probably interpreted the questionnaire as not being applicable to them in their status as students.

A further analysis of Table I reveals that the enrollment in B. A. 400 for the year 1946 exceeded the previous peak enrollment established for those classes in 1940. In 1940, 64 students received instruction in Punch-Card Machine Theory and Operation, while in 1946, 94 students received this training, representing an increase of 30 students, or 47 per cent.

---

<sup>9</sup>Helen Catherine Sittel, A Follow-Up Study of Selected Graduates of Classen High School, Oklahoma City, Oklahoma, for the Years 1939-1941, Inclusive, (unpublished Master's thesis, Oklahoma Agricultural and Mechanical College, 1943.)

Clarence Cecil Callarman, A Study of Post-High School Activities of the Graduates of Ponca City High School for the Years 1934, 1935, 1936, 1937, and 1938, (unpublished Master's thesis, Oklahoma Agricultural and Mechanical College, 1940.)

TABLE I

REPLIES TO POSTAL REPLY CARDS AND NUMBER OF COMPLETE AND INCOMPLETE QUESTIONNAIRES RETURNED, CLASSIFIED ACCORDING TO YEAR IN WHICH TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION WAS RECEIVED

| Year     | Number Who Did Not Reply to Postal Reply Card | Number Who Replied to Postal Reply Card but Did Not Return Questionnaire | Number Who Replied to Postal Reply Card and Returned Complete Questionnaire | Number Who Replied to Postal Reply Card and Returned Incomplete Questionnaire | Total Postal Reply Cards Mailed |
|----------|---|--|---|---|---------------------------------|
| 1938     | 6   | 1  | 2   |   | 9                               |
| 1939     | 37  | 6  | 10  |   | 53                              |
| 1940     | 36  | 6  | 21  | 1   | 64                              |
| 1941     | 40  | 2  | 14  |   | 56                              |
| 1942     | 20  | 5  | 12  | 1   | 38                              |
| 1943     | 8   | 1  | 8   |   | 17                              |
| 1944     | 4   |  | 9   |   | 13                              |
| 1945     | 6   | 2  | 9   | 1   | 18                              |
| 1946     | 57  | 5  | 21  | 11  | 94                              |
| Total    | 214   | 28   | 106   | 14  | 362                             |
| Per Cent | 59.12   | 7.73   | 29.28   | 3.87  | 100.0                           |

This table should be read as follows: Of 9 former students who received training B. A. 400 during the year 1938, 6 did not reply to the postal reply card; 1 individual who indicated a willingness to cooperate in the study by returning the reply portion of the postal reply card did not return the questionnaire; 2 who replied to the postal reply card returned complete questionnaires. A total of 214 individuals, or 59.12 per cent of the 362 to whom postal reply cards were mailed, did not return the reply cards; 28, or 7.73 per cent, replied to the postal reply card but did not return questionnaires; 106, or 29.28 per cent of the 362 individuals canvassed, returned reply cards and complete questionnaires; and 14, or 3.87 per cent, replied to the request for cooperation and returned questionnaires which were considered as incomplete.

An examination of Table II shows that 239 postal reply cards were mailed to the men who completed the course in Punch-Card Machine Theory and Operation during the years 1938 to 1946, inclusive. Complete questionnaires were received from 67 of these men, representing 28 per cent of the number canvassed.

It should be observed that a relatively small number of men students were enrolled in B. A. 400 during the years 1943, 1944, and 1945, and that the highest percentage of response for all men students who took B. A. 400 during the respective years covered in the study was established for these three years.

The ratio of the number of men responding to the number of women responding was approximately 2 to 1. This ratio is in proportion to the total number of men and women enrolled in the course in the years covered by the study.

Table III is a tabulation of the enrollment of women students in B. A. 400 for the years 1938 to 1946, inclusive, and the number of complete questionnaires returned by these women.

According to the data in Table III, postal reply cards requesting cooperation in this study were mailed to 123 women. Of this number, 39, or 31.7 per cent, returned complete questionnaires.

According to Table IV, cooperation in this study was solicited from 362 punch-card machine students. The number of graduates who responded by returning complete questionnaires



TABLE II

COMPLETE QUESTIONNAIRES RETURNED BY MEN WHO RECEIVED  
TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING  
THE YEARS 1938 TO 1946, INCLUSIVE

| Year in Which<br>Punch-Card Machine<br>Instruction Was<br>Received | Number<br>Canvassed | Number Returning<br>Complete<br>Questionnaires | Per Cent<br>Returning<br>Complete<br>Questionnaires |
|--|---------------------|--|---|
| 1938   | 5                   | 1  | 20.0  |
| 1939   | 41                  | 7  | 17.0  |
| 1940   | 46                  | 14   | 30.0  |
| 1941   | 29                  | 9  | 31.0  |
| 1942   | 21                  | 8  | 38.1  |
| 1943   | 8                   | 4  | 50.0  |
| 1944   | 5                   | 3  | 60.0  |
| 1945   | 8                   | 4  | 50.0  |
| 1946   | 76                  | 17   | 22.4  |
| Total  | 239                 | 67   | 28.0  |
| Per Cent   | 66.02               | 28.0   |   |

This table should be read as follows: For the year 1938, 5 men were canvassed; 1 complete questionnaire was returned, representing 20 per cent of the total men canvassed for that year. Requests for cooperation in this study were mailed to 239 men, or 66.02 per cent of the 362 men and women solicited. Complete questionnaires were returned by 67, or 28 per cent, of the men canvassed.

TABLE III

COMPLETE QUESTIONNAIRES RETURNED BY WOMEN WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE

| Year in Which<br>Punch-Card Machine<br>Instruction Was<br>Received | Number<br>Canvassed | Number Returning<br>Complete<br>Questionnaires | Per Cent<br>Returning<br>Complete<br>Questionnaires |
|--|---------------------|--|---|
| 1938   | 4                   | 1  | 25.0  |
| 1939   | 12                  | 3  | 25.0  |
| 1940   | 18                  | 7  | 38.9  |
| 1941   | 27                  | 5  | 18.5  |
| 1942   | 17                  | 4  | 23.5  |
| 1943   | 9                   | 4  | 44.4  |
| 1944   | 8                   | 6  | 75.0  |
| 1945   | 10                  | 5  | 50.0  |
| 1946   | 18                  | 4  | 22.2  |
| Total  | 123                 | 39   | 31.7  |
| Per Cent   | 33.98               | 31.7   |   |

This table should be read as follows: For the year 1938, 4 women were canvassed; 1 complete questionnaire was returned, representing 25 per cent of the total canvassed for that year. Of the 123 women canvassed, representing 33.98 per cent of the 362 men and women canvassed, 39, or 31.7 per cent, returned complete questionnaires.

TABLE IV

SCHOLASTIC CLASSIFICATIONS OF RESPONDENTS WHO RECEIVED  
TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING  
THE YEARS 1938 TO 1946, INCLUSIVE

|  | Freshmen | Sophomores | Juniors | Seniors | Graduates | Special | Total | Per Cent |
|--|----------|------------|---------|---------|-----------|---------|-------|----------|
| Number Who Returned Complete Questionnaires                              | 3        | 5          | 8       | 20      | 70        |         | 106   | 29.28    |
| Number Who Returned Incomplete Questionnaires                            |          | 1          | 6       | 5       | 2         |         | 14    | 3.87     |
| Number Who Returned Postal Reply Cards but Did Not Return Questionnaires | 1        | 1          | 2       | 4       | 10        | 1       | 28    | 7.73     |
| Number Who Did Not Return Postal Reply Cards                             | 4        | 9          | 22      | 39      | 139       | 10      | 214   | 59.12    |
| Total Number Canvassed   | 8        | 16         | 38      | 68      | 221       | 11      | 362   | 100.0    |

Note: Scholastic classification, as used in this table, refers to the highest academic level achieved by respondent while attending the Oklahoma Agricultural and Mechanical College.

This table should be read as follows: Of the total number of individuals who returned complete questionnaires, 3 were classified as freshmen, 5 as sophomores, 8 as juniors, 20 as seniors, and 70 as graduates. Complete questionnaires were returned by 106, or 29.28 per cent, of the 362 individuals originally canvassed for cooperation in the study.

represented 66.04 per cent of the total number canvassed. The percentage of seniors who responded with complete questionnaires was 15.86 per cent; juniors, 7.55 per cent; sophomores, 4.72 per cent; and freshmen, 2.83 per cent.

A further analysis of Table IV reveals that a total of 106 complete questionnaires were returned by respondents in the various scholastic classifications. These questionnaires represented replies from 29.28 per cent of the total number of individuals canvassed. There were 14, or 3.87 per cent, who returned incomplete questionnaires; 2 were returned by graduates, 5 by seniors, 6 by juniors, and 1 by a sophomore.

Twenty-eight, or 7.73 per cent, of those who returned the reply card did not return the questionnaire. Thus a shrinkage of 7.73 per cent occurred. No responses of either type were received from 139 graduates, constituting 58.8 per cent of the 221 graduates solicited. Of the 68 seniors canvassed, 39, or 57.3 per cent, did not reply. No responses of either type were received from 4 of the 8 freshmen canvassed. The highest percentage of failure to reply appeared in the special student classification with 10 of 11, representing 90.9 per cent of those canvassed, not replying.

No questionnaires were returned by the special students, although a reply card was returned by one individual in this classification. Repeated follow-up efforts were unsuccessful in persuading this individual to return his questionnaire. This scholastic classification was therefore eliminated from further consideration in this study.

## CHAPTER II

### THE QUESTIONNAIRE AND THE RESPONSE

The desirability of a one hundred per cent response in normative-survey studies was recognized. Good, Barr, and Scates state:

"It is true that scientists do not generally regard the questionnaire method of survey as a very high order of research, but that is of little consequence. Research is not necessarily carried on as an intellectual pastime of scientists; it frequently has important practical questions to answer, and it must be appraised in the light of its effectiveness in answering those questions."<sup>1</sup>

Blackstone<sup>2</sup> says that the survey method may be used when a problem is first being attacked, and it is desired to reveal the conditions before attempting to improve them.

It is admitted that those individuals who were enjoying vocational success were more likely to reply to this questionnaire than those who were not so successful or fortunate, and that conditions may have been so unsatisfactory that the recipient did not care to reveal them.

However, the questionnaire method of survey was considered the only feasible means of obtaining the data desired for this study, despite the obvious imperfections of this instrument.

Table I, page 9, revealed that a total of 120 questionnaires were returned. Of this number, 106 were classified as

---

<sup>1</sup>Good, Barr, and Scates, op. cit., p. 294.

<sup>2</sup>E. C. Blackstone, "Evaluation of Research Techniques," The National Business Education Quarterly, 10:7-10, May, 1942.

complete questionnaires and 14 were classified as incomplete. Data presented in this chapter were obtained from the 106 complete questionnaires, except as otherwise noted.

Table V shows the present job status of 70 graduates who received instruction in Punch-Card Machine Theory and Operation during the years 1938 to 1946, inclusive. The various job classifications are composite job classifications as established by the Bureau of Census, Federal Department of Commerce.<sup>3</sup>

An examination of the data reveals that a total of 70 graduates were employed in various positions. Ten per cent, or a total of 7, were classified as professional non-supervisory workers, and 10 per cent, or a total of 7, were classified as professional supervisory workers.

A total of 7 were employed in semi-professional work, as managers, proprietors, or officials, of whom 5, or 7.1 per cent of the 70 graduates, were employed in supervisory employment positions. It is considered significant that 21, or 30 per cent, of the graduates were employed in the professional and semi-professional job classifications.

The greatest percentage of replies was received from those employed in clerical work. There were 36, or 50.2 per cent, in this job classification; 6, or 8.5 per cent, were classified as clerical supervisory employees, and 30, or 42.8 per cent, were in the clerical non-supervisory group.

---

<sup>3</sup>See Appendix, p. 75.

TABLE V

PRESENT JOB STATUS OF 70 GRADUATES WHO RECEIVED TRAINING  
IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS  
1938 TO 1946, INCLUSIVE

| Present<br>Job Classification        | 1938     | 1939     | 1940      | 1941      | 1942     | 1943     | 1944     | 1945     | 1946     | Total     |
|--------------------------------------|----------|----------|-----------|-----------|----------|----------|----------|----------|----------|-----------|
| Professional<br>Non-Supervisory      |          |          |           | 2         |          | 2        | 2        | 1        |          | 7         |
| Professional<br>Supervisory          |          | 2        | 2         |           | 2        |          |          | 1        |          | 7         |
| Semi-Professional<br>Non-Supervisory |          |          |           | 2         |          |          |          |          |          | 2         |
| Semi-Professional<br>Supervisory     |          | 1        | 3         | 1         |          |          |          |          |          | 5         |
| Clerical<br>Non-Supervisory          | 1        | 3        | 3         | 4         | 3        | 1        | 6        | 3        | 6        | 30        |
| Clerical<br>Supervisory              | 1        | 2        | 1         | 1         |          | 1        |          |          |          | 6         |
| Federal<br>Non-Supervisory           |          |          |           |           |          |          |          | 1        |          | 1         |
| Federal<br>Supervisory               |          |          | 1         |           |          |          |          |          |          | 1         |
| Housewife<br>Non-Supervisory         |          | 1        | 3         |           | 1        |          | 1        | 1        |          | 7         |
| Student<br>Non-Supervisory           |          |          | 1         | 1         |          | 1        |          |          |          | 3         |
| Student<br>Supervisory               |          |          |           |           |          |          |          |          | 1        | 1         |
| <b>Total</b>                         | <b>2</b> | <b>9</b> | <b>14</b> | <b>11</b> | <b>6</b> | <b>5</b> | <b>9</b> | <b>7</b> | <b>7</b> | <b>70</b> |

This table should be read as follows: Of the graduates who took course E. A. 400 in 1938, 1 is employed in a non-supervisory clerical position, and 1 is employed in a supervisory clerical position. A total of 2 graduates for the year 1938 took part in the study. As indicated by the respective years, 7 graduates were employed in non-supervisory professional positions.

Only 2 graduates, or 2.9 per cent, classified themselves as Federal employees, one each in the supervisory and non-supervisory employment classifications.

The housewife classification included 7, or 10 per cent, of the graduates.

Questionnaires returned by students revealed that one individual had classified himself as being in supervisory employment. An investigation revealed that this student was employed as a part-time instructor in economics.

A recapitulation of those employed in supervisory employment showed the total number in all supervisory job classifications to be 20, or 28.6 per cent, of the 70 graduates. There were 50 graduates classified as non-supervisory employees, representing 71.4 per cent of the 70 graduates who participated in this survey.

None of the 70 graduates reported as being unemployed.

Table VI shows a tabulation of the present job classifications of non-graduates who received training in Punch-Card Machine Theory and Operation during the years 1938 to 1946, inclusive, and who attained the collegiate scholastic rank of senior. A total of 22, or 20.8 per cent of the 106 individuals who participated in the study, attained the collegiate scholastic classification of senior.

Ten of these respondents were students on the campus at Oklahoma Agricultural and Mechanical College at the time of this survey.



TABLE VI

PRESENT JOB STATUS OF NON-GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE, AND WHO ATTAINED THE COLLEGIATE SCHOLASTIC RANK OF SENIOR

| Present Job Classification        | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | Total | Per Cent |
|-----------------------------------|------|------|------|------|------|------|------|------|------|-------|----------|
| Professional Supervisory          |      |      | 1    |      |      |      |      |      |      | 1     | 4.55     |
| Professional Non-Supervisory      |      |      |      | 1    |      |      |      |      |      | 1     | 4.55     |
| Semi-Professional Supervisory     |      |      | 1    | 1    | 1    |      |      |      | 1    | 4     | 18.18    |
| Semi-Professional Non-Supervisory |      |      |      |      |      |      |      |      |      |       |          |
| Clerical Supervisory              |      |      |      |      |      | 1    |      |      |      | 1     | 4.55     |
| Clerical Non-Supervisory          |      |      | 1    | 1    |      |      |      | 1    |      | 3     | 13.63    |
| Student Non-Supervisory           |      |      | 1    |      | 1    |      |      |      | 10   | 12    | 54.54    |
| Total                             |      |      | 4    | 3    | 2    | 1    |      | 1    | 11   | 22    | 100.0    |

Note: Scholastic classification, as used in this table, refers to the highest academic level achieved by the respondent while attending the Oklahoma Agricultural and Mechanical College.

This table should be read as follows: Of the non-graduates who attained the collegiate scholastic rank of senior, 1, or 4.5 per cent, of the 22 non-graduates attaining the scholastic rank of senior in college is employed in a professional supervisory position.

A total of 4 reported as being in the clerical job classification, 3 as being engaged in non-supervisory employment, and 1 as being engaged in supervisory employment.

Of the number engaged in semi-professional work, 4 were engaged in supervisory employment. The professional job classification was composed of 1 supervisory employee and 1 non-supervisory employee.

The data reveal that, of the seniors who reported, none were unemployed. The two job classifications having the greatest number of seniors were the semi-professional supervisory group with 4 and the clerical non-supervisory group with 3.

Tables VII, VIII, and IX show the present job status of non-graduate punch-card machine students who received instruction during the years 1938 to 1946, inclusive, and who attained the collegiate scholastic rank of junior, sophomore, and freshman, respectively.

An examination of Table VII reveals that 12 of the 106 individuals who participated in this study attained the collegiate scholastic rank of junior. Of these, 2, or 16.67 per cent, were in non-supervisory professional employment; 1 was classified as a non-supervisory clerical employee; 1 as a housewife; and 8 were classified as students.

An analysis of Table VIII shows that 5 of the 106 individuals who participated in this study attained the collegiate scholastic rank of sophomore. Of these, 1 was classified as a skilled worker; 1 as a housewife; 1 as a student; and 2 were in supervisory clerical employment.

TABLE VII

PRESENT JOB STATUS OF NON-GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE, AND WHO ATTAINED THE COLLEGIATE SCHOLASTIC RANK OF JUNIOR

| Present Job Classification   | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | Total | Per Cent |
|------------------------------|------|------|------|------|------|------|------|------|------|-------|----------|
| Professional Non-Supervisory |      |      | 1    |      |      |      |      |      | 1    | 2     | 16.67    |
| Clerical Non-Supervisory     |      |      |      |      |      |      |      |      | 1    | 1     | 8.83     |
| Housewife Non-Supervisory    |      |      |      |      | 1    |      |      |      |      | 1     | 8.83     |
| Student Non-Supervisory      |      |      | 1    |      | 1    |      |      | 1    | 5    | 8     | 66.67    |
| Total                        |      |      | 2    |      | 2    |      |      | 1    | 7    | 12    | 100.0    |

Note: Scholastic classification, as used in this table, refers to the highest academic level achieved by respondent while attending the Oklahoma Agricultural and Mechanical College.

This table should be read as follows: One non-graduate punch-card machine student who received training in Punch-Card Machine Theory and Operation in 1940, and one student who received his training in 1946 are engaged in non-supervisory professional employment. These individuals represent 16.67 per cent of the 12 students who attained the collegiate scholastic rank of junior.

TABLE VIII

PRESENT JOB STATUS OF NON-GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE, AND WHO ATTAINED THE COLLEGIATE SCHOLASTIC RANK OF SOPHOMORE

| Present<br>Job Classification     | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | Total | Per<br>Cent |
|-----------------------------------|------|------|------|------|------|------|------|------|------|-------|-------------|
| Skilled Worker<br>Non-Supervisory |      |      |      |      | 1    |      |      |      |      | 1     | 20.0        |
| Housewife<br>Non-Supervisory      |      | 1    |      |      |      |      |      |      |      | 1     | 20.0        |
| Student<br>Non-Supervisory        |      |      |      |      |      |      |      |      | 1    | 1     | 20.0        |
| Clerical<br>Supervisory           |      |      |      |      |      | 1    |      | 1    |      | 2     | 40.0        |
| Total                             |      | 1    |      |      | 1    | 1    |      | 1    | 1    | 5     | 100.0       |

Note: Scholastic classification, as used in this table, refers to the highest academic level achieved by respondent while attending the Oklahoma Agricultural and Mechanical College.

This table should be read as follows: One non-graduate punch-card machine student who received training in Punch-Card Machine Theory and Operation in 1942 is in employment classified as non-supervisory skilled worker. This one individual represents 20 per cent of the 5 students who attained the collegiate scholastic rank of sophomore.

TABLE IX

PRESENT JOB STATUS OF NON-GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE, AND WHO ATTAINED THE COLLEGIATE SCHOLASTIC RANK OF FRESHMAN

| Present<br>Job Classification | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | Total | Per<br>Cent |
|-------------------------------|------|------|------|------|------|------|------|------|------|-------|-------------|
| Clerical<br>Non-Supervisory   |      |      | 2    |      |      |      |      |      |      | 2     | 66.67       |
| Clerical<br>Supervisory       |      |      |      | 1    |      |      |      |      |      | 1     | 33.33       |
| Total                         |      |      | 2    | 1    |      |      |      |      |      | 3     | 100.0       |

Note: Scholastic classification, as used in this table, refers to the highest academic level achieved by respondent while attending the Oklahoma Agricultural and Mechanical College.

This table should be read as follows: Two non-graduate punch-card machine students who received training in Punch-Card Machine Theory and Operation in 1940 are engaged in non-supervisory clerical employment. These two individuals represent 66.67 per cent of the 3 non-graduates who attained the collegiate scholastic rank of freshman.

Table IX shows that 3 of the 106 individuals who participated in this study attained the collegiate scholastic rank of freshman. Of this number, 2 are in non-supervisory clerical employment and 1 is in supervisory clerical employment.

It is believed that certain lower classmen are allowed to take course B. A. 400 as vocational preparation. Special students are admitted to classes of B. A. 400 for vocational training. No conclusions can be reached as to why the special students, whose purpose in taking B. A. 400 was definitely vocational, and the freshmen, whose purpose in taking B. A. 400 was assumed to be vocational, did not respond to the request for cooperation in this survey. Follow-up efforts to secure such participation were unsuccessful.

According to the data in Table X, 7 of the individuals who received punch-card machine instruction and who replied to the questionnaire, were engaged in professional supervisory vocational endeavor. There were 9 engaged in semi-professional supervisory employment, and 10 were in the clerical supervisory job classification.

A total of 28 were engaged in work requiring supervision of other workers. A ratio of 1 to 3 exists in relationship to the number employed in supervisory and non-supervisory vocational pursuits.

Table XI shows a summary of the non-supervisory job classifications for the years 1938 to 1946, inclusive.

TABLE X

SUMMARY OF SUPERVISORY JOB CLASSIFICATIONS FOR STUDENTS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE

| Present<br>Job Classification | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | Total | Per<br>Cent |
|-------------------------------|------|------|------|------|------|------|------|------|------|-------|-------------|
| Professional                  |      | 2    | 2    |      | 2    |      |      | 1    |      | 7     | 25.00       |
| Semi-Professional             |      | 1    | 4    | 2    | 1    |      |      |      | 1    | 9     | 32.15       |
| Clerical                      | 1    | 2    | 1    | 2    |      | 3    |      | 1    |      | 10    | 35.71       |
| Federal                       |      |      | 1    |      |      |      |      |      |      | 1     | 3.57        |
| Student                       |      |      |      |      |      |      |      |      | 1    | 1     | 3.57        |
| Total                         | 1    | 5    | 8    | 4    | 3    | 3    | 2    | 2    | 2    | 28    | 100.0       |

This table should be read as follows: Of those individuals in supervisory professional employment, 2 received their training in B. A. 400 in 1939, 2 in 1940, 2 in 1942, and 1 in 1945. Seven, or 25 per cent of the 28 individuals in supervisory employment, are in the professional job classification.

TABLE XI

SUMMARY OF NON-SUPERVISORY JOB CLASSIFICATIONS FOR STUDENTS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE

| Present<br>Job Classification | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | Total | Per<br>Cent |
|-------------------------------|------|------|------|------|------|------|------|------|------|-------|-------------|
| Professional                  |      |      | 1    | 2    | 1    | 2    | 2    | 1    | 1    | 10    | 11.91       |
| Semi-Professional             |      |      |      | 2    |      |      |      |      |      | 2     | 2.38        |
| Clerical                      | 1    | 3    | 6    | 5    | 3    | 1    | 6    | 4    | 7    | 36    | 42.86       |
| Skilled Worker                |      |      |      |      | 1    |      |      |      |      | 1     | 1.19        |
| Federal                       |      |      |      |      |      |      |      | 1    |      | 1     | 1.19        |
| Housewife                     |      | 2    | 3    |      | 2    |      | 1    | 1    |      | 9     | 10.71       |
| Student                       |      |      | 3    | 1    | 2    | 1    |      | 1    | 17   | 25    | 29.76       |
| Total                         | 1    | 5    | 13   | 10   | 9    | 4    | 9    | 8    | 25   | 84    | 100.0       |

This table should be read as follows: Of those individuals in non-supervisory professional employment, 1 received training in B. A. 400 in 1940, 2 in 1941, 1 in 1942, 2 in 1943, 2 in 1944, 1 in 1945, and 1 in 1946. Ten, or 11.91 per cent, of the 84 individuals in non-supervisory job classifications are in the non-supervisory professional group.



An examination of the data reveals that 84, or 75 per cent, were employed in non-supervisory job classifications. A breakdown of the respective classifications revealed that the clerical classifications of non-supervisory employees included 36, or 42.86 per cent, of the total number in non-supervisory job classifications; 25, or 29.76, indicated their job status as that of student in non-supervisory work; and 10, or 11.91 per cent, were classified as professional workers.

Individual types of jobs for those in the professional non-supervisory group included 1 land trainee, 1 social service worker, 1 certified public accountant, 1 salesman, 1 field scout executive, 1 industrial engineer, and 4 instructors employed at Oklahoma Agricultural and Mechanical College.

In the semi-professional non-supervisory category, there were 2 who received their training in B. A. 400 in 1941. One was a partner in a general country store and 1 was a book-keeper-partner in an auto supply store. It was assumed that these semi-professional workers were operating businesses in which they and their partners comprised the entire personnel.

The significant factor, as shown by the data, is that very few of those individuals who took B. A. 400 entered semi-professional non-supervisory activity.

Thirty-six, or 42.86 per cent, of the number surveyed were employed in non-supervisory clerical positions. An analysis of the questionnaires revealed the following

individual types of jobs for those in the clerical job classification: 1 stores accounting clerk, 1 purchasing clerk, 1 clerk, 1 accounts payable clerk, 1 junior accounting clerk, 5 accounting clerks, 1 fiscal accounts clerk, 2 accountants (as interpreted by the respondents), 1 cost clerk, 2 bookkeepers, 1 secretary, 1 assistant secretary, 1 secretary stenographer, 7 secretaries (these were secretaries to corporation executives), 2 stenographer clerks, 1 stenographer, 2 assistant cashiers, 1 PEX operator, 1 dairy equipment salesman, and 1 who classified himself as "Trainee, I guess." Two failed to indicate their job titles.

A factor of note was that, with few exceptions, those individuals in the clerical classifications were engaged in recording information pertinent to business transactions.

One respondent stated that his job classification was that of a skilled worker in a non-supervisory capacity. Comments contained in his questionnaire revealed that he was formerly night shift supervisor in the Central Machines Branch of the 19th Machines Records Unit (Mobile) of the United States Army, in charge of electrical accounting and tabulating machines. At the time of this study, he was employed as a tabulating machine operator for an Oklahoma oil company.

The respondent in the non-supervisory Federal employment category was engaged as a junior physicist for the Federal Government. There were 9 who stated that they were engaged in domestic duties with the classification of housewife.

An examination of Table XII shows that 10, or 14.3 per cent of the graduates who returned questionnaires, did not report their incomes. It would appear that the statement on the questionnaire, "This information which is to be used in a summary statistical report will be held STRICTLY CONFIDENTIAL"<sup>4</sup> failed to engender their confidence. "I'll hold it confidential, too," replied one of the graduates who did not give the amount of his income.

Four of the respondents who were engaged in duties which characterized them as housewives reported incomes of relatively small amounts. It may be that these housewives had sources of income other than those shared with their husbands; however, the data revealed that their job classification was that of housewife and the source of their income is purely a matter of conjecture.

The data revealed that 3 of the graduates were in the \$5000 or more per year income bracket. An investigation revealed that 1 of these was holding the position of Director of Flight Training in a large southern university; 1 gave his title as Chief Accountant (no company identification was given); and the other was an electric accounting machine salesman for a well-known firm that manufactures, distributes, and services electric accounting and tabulating equipment throughout the world.

It was further disclosed by the data that the median annual salary was in the \$3000-\$3499 income bracket. The

---

<sup>4</sup>See Appendix, p. 75.

TABLE XII

INCOME STATUS OF 70 GRADUATES WHO RECEIVED TRAINING IN  
PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS  
1938 TO 1946, INCLUSIVE

| Annual Income<br>Derived Directly<br>from Occupation<br>or Profession | Number of Years on the Job |   |    |   |    |   |   |   |    |   | Total | Per<br>Cent |       |
|---|----------------------------|---|----|---|----|---|---|---|----|---|-------|-------------|-------|
|   | Less<br>Than<br>1 Year     | 1 | 2  | 3 | 4  | 5 | 6 | 7 | 8  | 9 |       |             |       |
| \$5000--or more   |                            | 1 |    |   | 1  |   | 1 |   |    |   |       | 3           | 4.3   |
| 4500--4999  |                            |   |    |   |    |   |   | 1 |    |   |       | 1           | 1.4   |
| 4000--4499  |                            |   |    |   |    |   |   |   |    |   |       |             |       |
| 3500--3999  |                            |   |    |   | 1  | 1 |   |   |    | 1 |       | 3           | 4.3   |
| 3000--3499  |                            |   | 1  |   | 4  | 2 | 3 |   |    |   |       | 10          | 14.3  |
| 2500--2999  |                            |   | 3  |   | 4  | 3 |   | 2 | 1  |   |       | 13          | 18.5  |
| 2000--2499  | 1                          |   | 4  | 3 | 2  |   | 1 | 2 | 5  |   |       | 18          | 25.7  |
| 1500--1999  |                            |   |    | 1 |    |   | 3 | 3 | 1  |   |       | 8           | 11.5  |
| 1000--1499  |                            |   | 1  |   |    |   |   |   | 1  |   |       | 2           | 2.9   |
| 500-- 999   |                            |   |    |   | 1  |   |   |   |    |   |       | 1           | 1.4   |
| 0-- 499   |                            |   |    |   |    | 1 |   |   |    |   |       | 1           | 1.4   |
| No Income Reported  | 3                          |   | 1  | 1 | 2  | 1 | 1 |   |    | 1 |       | 10          | 14.3  |
| <b>Total</b>  |                            | 5 | 10 | 5 | 15 | 8 | 9 | 8 | 10 |   |       | 70          | 100.0 |

This table should be read as follows: In the annual income bracket of \$5000 or more, 1 graduate had a job tenure of 1 year; 1 graduate reported a job tenure of 4 years; and 1 graduate indicated that he had been on the same job for 6 years. These 3 graduates represent 4.3 per cent of the 70 graduates participating in the study.

graduates had accumulated 330 years of service on the jobs for an average tenure of 4.7 years.

Table XIII presents a tabulation of the present income status of non-graduate punch-card machine students during the years 1938 to 1946, inclusive, who attained the collegiate scholastic rank of senior, junior, sophomore, or freshman.

An examination of table XIII reveals that the median annual income for non-graduates who attained the collegiate scholastic rank of senior was in the \$1500-\$1999 income classification.

Only 3 individuals who reported had attained the collegiate scholastic rank of freshman. These individuals had incomes of \$1500-\$1999, \$2500-\$2999, and \$3000-\$3499, respectively. The median income for the non-graduates was an amount within the \$2000-\$2499 annual income bracket.

One individual who had attained the collegiate scholastic rank of senior reported an income of \$5000 or more per year. An investigation revealed that this individual held an active partnership in a well-established pioneer hardware business.

Table XIV presents a summary of the income status for all individuals in the various scholastic classifications, based on the number of semester hours of credit earned in punch-card machine courses.

An examination of Table XIV reveals that 89 of the 106 individuals included in the study reported incomes. The data reveal that 53 of these reporting incomes were receiving incomes within the \$2000-\$3499 classifications. These individuals, on the average, had earned 3 semester hours of credit in punch-card machine courses.

TABLE XIII

INCOME STATUS OF NON-GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE, CLASSIFIED ACCORDING TO THE HIGHEST COLLEGIATE SCHOLASTIC RANKS ATTAINED

| Annual Income<br>Derived Directly<br>from Occupation<br>or Profession | Collegiate Scholastic Rank Attained |           |           |          | Total     |
|---|-------------------------------------|-----------|-----------|----------|-----------|
|   | Senior                              | Junior    | Sophomore | Freshman |           |
| \$5000--or more   | 1                                   |           |           |          | 1         |
| 4500--4999  | 1                                   |           |           |          | 1         |
| 4000--4499  | 1                                   |           |           |          | 1         |
| 3500--3999  |                                     | 1         |           |          | 1         |
| 3000--3499  | 2                                   | 2         |           | 1        | 5         |
| 2500--2999  | 1                                   |           | 1         | 1        | 3         |
| 2000--2499  |                                     | 1         | 3         |          | 4         |
| 1500--1999  | 1                                   |           |           | 1        | 2         |
| 1000--1499  | 3                                   |           |           |          | 3         |
| 500-- 999   | 3                                   |           |           |          | 3         |
| 0-- 499   | 2                                   | 3         |           |          | 5         |
| No Income<br>Reported   | 3                                   | 4         |           |          | 7         |
| <b>Total</b>  | <b>18</b>                           | <b>11</b> | <b>4</b>  | <b>3</b> | <b>36</b> |

Note: Scholastic classification, as used in this table, refers to the highest academic level achieved by respondent while attending the Oklahoma Agricultural and Mechanical College.

This table should be read as follows: Eighteen persons who received instruction in Punch-Card Machine Theory and Operation during the years 1938 to 1946, inclusive, and who attained a collegiate scholastic rank of senior, participated in the study. One of these reported an annual income of \$5000 or more.

TABLE XIV

INCOME STATUS OF RESPONDENTS IN ALL COLLEGIATE SCHOLASTIC CLASSIFICATIONS, BASED ON THE NUMBER OF SEMESTER HOURS OF CREDIT IN PUNCH-CARD MACHINES

| Annual Income<br>Derived Directly<br>from Occupation<br>or Profession | Semester Hours of Credit<br>in Punch-Card Machines |           |           |          |          |           |          |          |          | Average<br>No. of<br>Total Semester<br>Hours |             |
|---|--|-----------|-----------|----------|----------|-----------|----------|----------|----------|--|-------------|
|   | 1  | 2         | 3         | 4        | 5        | 6         | 7        | 8        | 9        |  |             |
| \$5000--or more   | 1  | 2         |           |          |          | 1         |          |          |          | 4  | 2.7         |
| 4500--4999  |  | 1         | 1         |          |          |           |          |          |          | 2  | 2.5         |
| 4000--4499  |  | 1         |           |          |          |           |          |          |          | 1  | 2.0         |
| 3500--3999  | 1  | 2         | 1         |          |          |           |          |          |          | 4  | 2.0         |
| 3000--3499  | 3  | 6         | 2         | 1        |          | 3         |          |          |          | 15   | 2.8         |
| 2500--2999  | 2  | 7         | 4         | 1        |          | 2         |          |          |          | 16   | 2.8         |
| 2000--2499  |  | 6         | 11        |          |          | 4         |          |          | 1        | 22   | 3.5         |
| 1500--1999  |  | 3         | 4         |          |          | 3         |          |          |          | 10   | 3.6         |
| 1000--1499  | 1  |           | 3         |          |          | 1         |          |          |          | 5  | 3.2         |
| 500-- 999   |  | 2         | 2         |          |          |           |          |          |          | 4  | 2.5         |
| 0-- 499   |  | 2         | 4         |          |          |           |          |          |          | 6  | 2.7         |
| No Income<br>Reported   | 1  | 6         | 7         |          | 1        | 1         | 1        |          |          | 17   | 3.0         |
| <b>Total</b>  | <b>9</b>   | <b>38</b> | <b>39</b> | <b>2</b> | <b>1</b> | <b>15</b> | <b>1</b> | <b>1</b> | <b>1</b> | <b>106</b>                                   | <b>3.02</b> |

Note: Scholastic classification, as used in this table, refers to the highest academic level achieved by respondent while attending the Oklahoma Agricultural and Mechanical College.

This table should be read as follows: One individual with 1 semester hour of credit in punch-card machines earned \$5000 or more per year; 2 individuals with 2 semester hours of credit had incomes of \$5000 or more per year; and 1 individual with 6 semester hours of credit reported an income of \$5000 or more per year. These 4 respondents had an average of 2.7 semester hours of credit in punch-card machines.

In the extreme upper income classification, 4 who reported incomes of \$5000 or more annually had completed an average of 2.9 semester hours of credit in punch-card machines. No significant differences were apparent in the average number of semester hours completed by the various income groups.

Table XV shows a comparison of job classifications with the number of semester hours of credit earned in accounting by individuals who received training in Punch-Card Machine Theory and Operation during the years 1938 to 1946, inclusive.

The mean average for those in the clerical job classification was found to be 15 semester hours of credit in accounting, while a mean average of 12 semester hours of credit was found for the 99 individuals who had taken one or more accounting courses.

No significant calculations may be made. These data were recorded to show that the individual who takes courses in Punch-Card Machine Theory and Operation completes, on an average, 12 semester hours of accounting. However, the mean average for the job classifications of professional, semi-professional, and clerical was slightly higher than the average for the entire group surveyed. A mean average of 15 semester hours of credit in college accounting was indicated for these groups.

Table XVI presents a comparison of job classifications with the number of semester hours of credit earned in punch-card machine courses by individuals during the years 1938 to 1946, inclusive.



TABLE XV

A COMPARISON OF JOB CLASSIFICATIONS WITH THE NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN ACCOUNTING BY INDIVIDUALS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE

| Number of Semester Hours in Accounting | Job Classification |                   |          |                |         |           |         |              | Total |
|--|--------------------|-------------------|----------|----------------|---------|-----------|---------|--------------|-------|
|  | Professional       | Semi-Professional | Clerical | Skilled Worker | Federal | Housewife | Student | Unclassified |       |
| 36                                     |                    |                   | 1        |                |         |           |         |              | 1     |
| 34                                     | 1                  |                   |          |                |         |           |         |              | 1     |
| 33                                     | 1                  |                   |          |                |         |           |         |              | 1     |
| 30                                     | 1                  | 1                 | 4        |                |         |           |         | 1            | 7     |
| 27                                     | 1                  | 1                 | 2        |                |         |           |         |              | 4     |
| 24                                     | 1                  |                   | 2        |                | 1       |           | 3       |              | 7     |
| 22                                     |                    |                   |          |                |         |           | 1       |              | 1     |
| 21                                     | 1                  | 1                 | 3        |                |         |           |         |              | 5     |
| 18                                     | 1                  |                   | 3        |                |         |           |         |              | 4     |
| 15                                     | 1                  |                   | 2        |                |         |           | 1       | 1            | 5     |
| 14                                     |                    |                   | 1        |                |         |           | 1       |              | 2     |
| 12                                     |                    |                   | 3        |                | 1       |           | 2       | 1            | 7     |
| 11                                     |                    |                   | 1        |                |         |           | 1       |              | 2     |
| 10                                     |                    |                   |          |                |         |           | 1       |              | 1     |
| 9                                      | 3                  | 6                 | 8        |                |         |           | 2       | 2            | 22    |
| 6                                      | 4                  | 1                 | 9        |                |         |           | 4       | 1            | 25    |
| 3                                      |                    | 1                 | 1        |                |         | 1         |         | 1            | 4     |
| 0                                      | 2                  |                   | 4        | 1              |         |           |         |              | 7     |
| Total                                  | 17                 | 11                | 44       | 1              | 2       | 8         | 16      | 7            | 106   |
| Mean Average                           | 17                 | 13                | 15       | 0              | 18      | 6         | 13      | 12           | 12    |

This table should be read as follows: One respondent had earned 36 semester hours of credit in accounting and was employed in a clerical job. A mean average of 17 semester hours of credit was earned by the 17 respondents in the professional job classification.

TABLE XVI

A COMPARISON OF JOB CLASSIFICATIONS WITH THE NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN PUNCH-CARD MACHINE COURSES BY INDIVIDUALS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE

| Present Job Classification | Semester Hours of Credit in Punch-Card Machines |    |    |   |   |    |   |   |   | Total in Classification | Average No. of Semester Hours |
|----------------------------|---|----|----|---|---|----|---|---|---|-------------------------|-------------------------------|
|                            | 1   | 2  | 3  | 4 | 5 | 6  | 7 | 8 | 9 |                         |                               |
| Professional               | 5   | 5  | 3  |   |   | 4  |   |   |   | 17                      | 2.8                           |
| Semi-Professional          |   | 9  | 2  |   |   |    |   |   |   | 11                      | 2.2                           |
| Clerical                   | 2   | 14 | 18 | 1 |   | 8  |   |   | 1 | 44                      | 3.4                           |
| Skilled Worker             | 1   |    |    |   |   |    |   |   |   | 1                       | 1.0                           |
| Federal                    |   | 1  |    |   |   | 1  |   |   |   | 2                       | 4.0                           |
| Housewife                  |   | 4  | 2  |   |   | 1  | 1 |   |   | 8                       | 3.3                           |
| Student                    | 1   | 4  | 11 |   | 1 |    |   |   |   | 17                      | 2.7                           |
| Unclassified               |   | 1  | 3  | 1 |   | 1  |   |   |   | 6                       | 3.5                           |
| Total                      | 9   | 38 | 39 | 2 | 1 | 15 | 1 |   | 1 | 106                     | 3.02                          |

This table should be read as follows: Of the 106 cases studied, 17 were classified as professional workers. Five of the 17 had earned 1 semester hour of credit in punch-card machine courses; 5 had earned 2 semester hours of credit; 3 had earned 3 semester hours of credit; and 4 had earned 6 semester hours of credit in punch-card machine courses. An average of 2.8 semester hours of credit in punch-card machine courses was earned by individuals classified as professional workers.

The data presented in Table XVI reveal that the 17 professional workers had completed an average of 2.8 semester hours of credit in punch-card machine courses, and the 11 semi-professional workers had completed an average of 2.2 semester hours of such credit.

The 44 individuals classified as clerical workers in industry completed an average of 3.4 semester hours of credit in punch-card machine courses.

The 2 Federal workers who replied to the questionnaire had an earned average of 4 semester hours of credit in punch-card machine courses.

Individuals in the housewife classification had, on an average, earned 3.3 semester hours of credit in punch-card machine courses.

Seventeen students, all of whom were enrolled in Oklahoma Agricultural and Mechanical College at the time these data were gathered, had completed an average of 2.7 semester hours in punch-card machine courses.

The average number of semester hours in punch-card machine courses completed by the 106 individuals who participated in this study was 3.02. Forty-four, or 41.5 per cent, of the total number of individuals reporting were in the clerical job classification, with a mean average of 3.4 semester hours of credit completed in punch-card machine courses.

Some of the courses in punch-card machines related to B. A. 400<sup>5</sup> are described as follows:

---

<sup>5</sup>Bulletin, Oklahoma Agricultural and Mechanical College, loc. cit., p. 330.

"B. A. 440. Punch-Card Machines. Class 2, lab. 2, cr. 3. Prerequisite: B. A. 400. An intensive study of the application of punch-card accounting machines; preparation and presentation of reports; advanced theory and practice; flow charts and organization. Credit will not be given in both B. A. 440 and Accounting 403."<sup>6</sup>

"Accounting 403. Punch-Card Machine Accounting. Class 2, lab. 2, cr. 3. Prerequisites: B. A. 400 and 12 semester hours of accounting. Advanced theory and practice for application of punch-card accounting machines to accounting functions; general accounting; sales analysis; accounts receivable and payable; pay roll and labor accounting; inventory; internal and independent audit procedures; extensive practice in preparing and analyzing accounting statements. Credit will not be given in both B. A. 440 and Accounting 403."<sup>7</sup>

"I. B. 120. Punch-Card Machine Operation. Lab. 2 to 10, cr. 1 to 4. Prerequisite: I. B. 110 (Typing). Training in the operation of key-punch equipment; theory and practice in the operation of punch-card machines."<sup>8</sup>

Inasmuch as course B. A. 400 is being offered as an elective to any student of junior standing, and by special permission to lower classmen and special students, it was believed that information relative to the average number of semester hours of credit earned by punch-card machine students in the fields of accounting, business administration, economics, and secretarial administration would be desirable. Accordingly, Tables XVII, XVIII, XIX, and XX were designed to reveal the relationship of the selected fields of study to the number of semester hours of credit earned by those individuals who received instruction in Punch-Card Machine Theory and Operation during the years 1938 to 1946, inclusive.

---

<sup>6</sup>Ibid., p. 330.

<sup>7</sup>Ibid., p. 309.

<sup>8</sup>Ibid., p. 398.

TABLE XVII

RELATIONSHIP OF NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN ACCOUNTING TO THE NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN PUNCH-CARD MACHINE COURSES

| Number of Semester Hours in Accounting | Semester Hours of Credit in Punch-Card Machines |           |           |          |          |           |          |   |          | Total No. of Students | Average No. of Semester Hours |
|--|---|-----------|-----------|----------|----------|-----------|----------|---|----------|-----------------------|-------------------------------|
|  | 1   | 2         | 3         | 4        | 5        | 6         | 7        | 8 | 9        |                       |                               |
| 36                                     | 1   |           |           |          |          |           |          |   |          | 1                     | 1.0                           |
| 34                                     |   | 1         |           |          |          |           |          |   |          | 1                     | 2.0                           |
| 33                                     |   |           | 1         |          |          |           |          |   |          | 1                     | 3.0                           |
| 30                                     | 1   | 2         | 3         | 1        |          |           |          |   |          | 5                     | 3.5                           |
| 27                                     |   | 4         |           |          |          |           |          |   |          | 4                     | 2.0                           |
| 24                                     |   | 1         | 5         |          |          |           |          |   | 1        | 7                     | 3.5                           |
| 22                                     |   | 1         |           |          |          |           |          |   |          | 1                     | 2.0                           |
| 21                                     | 1   | 2         | 1         |          |          | 1         |          |   |          | 5                     | 2.8                           |
| 18                                     |   | 1         | 2         |          |          | 1         |          |   |          | 4                     | 2.5                           |
| 15                                     | 1   | 2         |           |          | 1        | 1         |          |   |          | 4                     | 2.5                           |
| 14                                     |   |           | 1         |          |          | 1         |          |   |          | 2                     | 4.5                           |
| 12                                     |   | 1         | 4         |          |          | 2         |          |   |          | 7                     | 2.7                           |
| 11                                     |   |           | 1         |          |          | 1         |          |   |          | 2                     | 4.5                           |
| 10                                     |   |           | 1         |          |          |           |          |   |          | 1                     | 3.0                           |
| 9                                      |   | 2         | 10        |          |          | 3         | 1        |   |          | 22                    | 2.0                           |
| 8                                      | 2   | 10        | 7         | 1        |          | 4         |          |   |          | 24                    | 2.5                           |
| 3                                      |   | 3         | 1         |          |          |           |          |   |          | 4                     | 2.2                           |
| 0                                      | 3   | 2         | 2         |          |          | 1         |          |   |          | 8                     | 2.5                           |
| <b>Total</b>                           | <b>9</b>  | <b>36</b> | <b>39</b> | <b>2</b> | <b>1</b> | <b>15</b> | <b>1</b> |   | <b>1</b> | <b>106</b>            | <b>3.02</b>                   |

This table should be read as follows: One student who earned one semester hour of credit in punch-card machine courses during the years 1938 to 1946, inclusive, completed 36 semester hours of credit in accounting. The student who attained the 36 semester hour level in accounting averaged one semester hour of credit in punch-card machine courses.

TABLE XVIII

RELATIONSHIP OF NUMBER OF SEMESTER HOURS OF CREDIT EARNED  
IN BUSINESS ADMINISTRATION TO THE NUMBER OF SEMESTER HOURS  
OF CREDIT EARNED IN PUNCH-CARD MACHINE COURSES

| Number of<br>Semester Hours in<br>Business<br>Administration | Semester Hours of Credit<br>in Punch-Card Machines |    |    |   |   |    |   |   |   | Total<br>No. of<br>Students | Average<br>No. of<br>Semester<br>Hours |
|--|--|----|----|---|---|----|---|---|---|-----------------------------|--|
|  | 1  | 2  | 3  | 4 | 5 | 6  | 7 | 8 | 9 |                             |  |
| 44   |  |    | 1  |   |   |    |   |   |   | 1                           | 3.0                                    |
| 35   |  | 2  |    |   |   |    |   |   |   | 2                           | 2.0                                    |
| 34   |  | 1  |    |   |   |    |   |   |   | 1                           | 2.0                                    |
| 33   |  | 2  |    |   |   |    |   |   |   | 2                           | 2.0                                    |
| 31   |  | 1  |    |   |   |    |   |   |   | 1                           | 2.0                                    |
| 30   |  | 1  | 1  |   |   |    |   |   |   | 2                           | 2.5                                    |
| 29   |  | 1  |    |   |   | 1  |   |   |   | 2                           | 4.0                                    |
| 28   |  |    | 1  |   |   | 1  |   |   |   | 2                           | 4.5                                    |
| 27   | 1  | 1  | 2  |   |   |    |   |   |   | 4                           | 2.2                                    |
| 26   |  | 2  | 2  |   |   |    |   |   |   | 4                           | 2.5                                    |
| 25   |  | 2  | 3  |   |   | 1  |   |   |   | 6                           | 3.1                                    |
| 24   |  | 4  | 3  |   |   |    |   |   |   | 7                           | 2.4                                    |
| 23   |  | 1  | 2  | 1 |   |    |   |   |   | 4                           | 3.0                                    |
| 22   |  | 1  | 1  |   |   | 2  |   |   |   | 4                           | 4.2                                    |
| 21   | 1  | 2  | 3  |   |   | 2  |   |   |   | 8                           | 3.2                                    |
| 20   |  |    | 1  |   |   |    |   |   |   | 1                           | 3.0                                    |
| 19   | 1  | 1  |    | 1 |   | 1  |   |   |   | 4                           | 3.2                                    |
| 18   |  | 2  |    |   |   |    |   |   |   | 2                           | 2.0                                    |
| 17   |  | 1  | 2  |   |   |    |   |   |   | 3                           | 2.6                                    |
| 16   |  |    | 1  |   | 1 | 1  |   |   |   | 3                           | 4.6                                    |
| 15   | 1  | 2  | 2  |   |   | 1  |   |   |   | 7                           | 3.7                                    |
| 14   |  | 2  |    |   |   |    |   |   | 1 | 2                           | 2.0                                    |
| 13   | 1  |    | 2  |   |   |    |   |   |   | 3                           | 2.3                                    |
| 12   |  | 1  | 1  |   |   |    |   |   |   | 2                           | 2.5                                    |
| 11   |  | 2  |    |   |   |    |   | 1 |   | 3                           | 3.6                                    |
| 8  |  |    | 2  |   |   | 1  |   |   |   | 3                           | 4.0                                    |
| 7  |  |    | 2  |   |   | 1  |   |   |   | 3                           | 4.0                                    |
| 6  |  | 2  |    |   |   | 1  |   |   |   | 3                           | 3.3                                    |
| 4  |  |    | 1  |   |   |    |   |   |   | 1                           | 3.0                                    |
| 3  |  |    | 3  |   |   | 1  |   |   |   | 4                           | 3.7                                    |
| 2  |  | 1  | 1  |   |   |    |   |   |   | 2                           | 2.5                                    |
| 1  | 1  |    |    |   |   |    |   |   |   | 1                           | 1.0                                    |
| 0  | 3  | 3  | 2  |   |   | 1  |   |   |   | 9                           | 2.3                                    |
| Total  | 9  | 38 | 39 | 2 | 1 | 15 | 1 |   | 1 | 106                         | 3.02                                   |

This table should be read as follows: One student who earned 3 semester hours of credit in punch-card machine courses during the years 1938 to 1946, inclusive, completed 44 semester hours of credit in Business Administration courses. An average of 3 semester hours of credit in punch-card machine courses is indicated for the students in the 44 semester hour level of credit in Business Administration.

TABLE XIX

RELATIONSHIP OF NUMBER OF SEMESTER HOURS OF CREDIT EARNED  
IN ECONOMICS TO THE NUMBER OF SEMESTER HOURS OF CREDIT  
EARNED IN PUNCH-CARD MACHINE COURSES

| Number of<br>Semester Hours<br>in Economics | Semester Hours of Credit<br>in Punch-Card Machines |    |    |   |   |    |   |   |   | Total<br>No. of<br>Students | Average<br>No. of<br>Semester<br>Hours |
|---|--|----|----|---|---|----|---|---|---|-----------------------------|--|
|   | 1  | 2  | 3  | 4 | 5 | 6  | 7 | 8 | 9 |                             |  |
| 36  |  | 1  |    | 1 |   |    |   |   |   | 2                           | 3.0                                    |
| 32  |  |    | 1  |   |   |    |   |   |   | 1                           | 3.0                                    |
| 31  | 1  |    |    |   |   |    |   |   |   | 1                           | 1.0                                    |
| 30  |  | 3  |    |   |   |    |   |   |   | 3                           | 2.0                                    |
| 28  |  |    |    |   |   | 1  |   |   |   | 1                           | 6.0                                    |
| 27  | 1  | 2  |    |   |   |    |   |   |   | 3                           | 1.6                                    |
| 26  |  | 3  | 1  |   |   |    |   |   |   | 4                           | 2.2                                    |
| 25  |  | 1  |    |   |   |    |   |   |   | 1                           | 2.0                                    |
| 24  |  | 1  | 1  |   |   | 1  |   |   |   | 3                           | 3.6                                    |
| 23  |  |    | 1  |   |   | 1  |   |   |   | 2                           | 4.5                                    |
| 21  | 1  | 4  | 3  |   |   | 2  |   |   |   | 10                          | 3.0                                    |
| 20  |  | 1  |    |   |   |    |   |   |   | 1                           | 2.0                                    |
| 19  |  |    |    |   |   | 1  |   |   |   | 1                           | 6.0                                    |
| 18  |  | 3  | 6  | 1 | 1 |    | 1 |   | 1 | 13                          | 3.7                                    |
| 17  |  | 1  |    |   |   |    |   |   |   | 1                           | 2.0                                    |
| 15  | 1  | 10 | 7  |   |   | 3  |   |   |   | 21                          | 2.3                                    |
| 14  |  | 1  |    |   |   |    |   |   |   | 1                           | 2.0                                    |
| 13  |  |    | 1  |   |   |    |   |   |   | 1                           | 3.0                                    |
| 12  | 2  | 1  | 5  |   |   | 1  |   |   |   | 9                           | 2.7                                    |
| 11  |  | 1  | 2  |   |   |    |   |   |   | 3                           | 2.6                                    |
| 9   |  | 1  | 6  |   |   | 2  |   |   |   | 9                           | 2.8                                    |
| 8   |  |    | 1  |   |   |    |   |   |   | 1                           | 3.0                                    |
| 6   |  |    | 2  |   |   | 1  |   |   |   | 3                           | 4.0                                    |
| 5   |  | 1  | 1  |   |   |    |   |   |   | 2                           | 2.5                                    |
| 3   |  |    |    |   |   | 1  |   |   |   | 1                           | 6.0                                    |
| 0   | 3  | 3  | 1  |   |   | 1  |   |   |   | 8                           | 2.2                                    |
| Total                                       | 9  | 38 | 39 | 2 | 1 | 15 | 1 |   | 1 | 106                         | 3.02                                   |

This table should be read as follows: Of the students who received training in punch-card machine courses during the years 1938 to 1946, inclusive, 2 earned 36 semester hours of credit in economics. These 2 individuals earned 2 semester hours and 4 semester hours of credit, respectively, in punch-card machine courses. An average of 3 semester hours of credit in punch-card machine courses is indicated for the students in the 36 semester hour level of credit in economics.

TABLE XX

RELATIONSHIP OF NUMBER OF SEMESTER HOURS OF CREDIT EARNED  
IN SECRETARIAL ADMINISTRATION TO THE NUMBER OF SEMESTER  
HOURS OF CREDIT EARNED IN PUNCH-CARD MACHINE COURSES

| Number of<br>Semester Hours<br>in Secretarial<br>Administration | Semester Hours of Credit<br>in Punch-Card Machines |    |    |   |   |    |   |   |   | Total<br>No. of<br>Students | Average<br>No. of<br>Semester<br>Hours |
|---|--|----|----|---|---|----|---|---|---|-----------------------------|--|
|   | 1  | 2  | 3  | 4 | 5 | 6  | 7 | 8 | 9 |                             |  |
| 29  |  | 1  |    |   |   |    |   |   |   | 1                           | 2.0                                    |
| 28  |  | 1  |    |   |   |    |   |   |   | 1                           | 2.0                                    |
| 27  |  | 1  |    |   |   | 1  |   |   |   | 2                           | 4.0                                    |
| 26  |  |    | 1  |   |   | 1  |   |   |   | 2                           | 4.5                                    |
| 24  |  |    | 1  |   |   |    |   |   |   | 1                           | 3.0                                    |
| 23  |  | 1  |    |   |   | 1  |   |   |   | 2                           | 4.0                                    |
| 22  |  |    | 1  |   |   |    |   |   |   | 1                           | 3.0                                    |
| 21  |  | 2  |    |   |   |    |   |   |   | 2                           | 2.0                                    |
| 20  |  |    | 1  |   |   |    |   |   |   | 1                           | 3.0                                    |
| 19  |  |    | 1  |   |   |    | 1 |   |   | 2                           | 5.0                                    |
| 18  |  | 1  | 2  |   |   |    |   |   |   | 3                           | 2.6                                    |
| 17  | 1  |    |    |   |   |    |   |   |   | 1                           | 1.0                                    |
| 16  |  | 1  | 1  |   |   |    |   |   |   | 2                           | 2.5                                    |
| 15  |  |    |    | 1 |   |    |   |   |   | 1                           | 4.0                                    |
| 14  |  | 1  |    |   |   | 1  |   |   |   | 2                           | 4.0                                    |
| 12  |  | 1  |    |   |   | 2  |   |   |   | 3                           | 4.6                                    |
| 11  |  |    |    |   |   | 1  |   |   |   | 1                           | 6.0                                    |
| 10  |  | 1  | 1  |   |   |    |   |   |   | 2                           | 2.5                                    |
| 9   |  |    | 1  |   |   |    |   |   |   | 1                           | 3.0                                    |
| 7   |  |    | 1  |   |   |    |   |   |   | 1                           | 3.0                                    |
| 6   | 1  |    | 4  |   |   |    |   |   |   | 5                           | 2.6                                    |
| 4   |  |    | 1  |   |   | 1  |   |   |   | 2                           | 4.5                                    |
| 3   | 1  | 10 | 4  | 1 |   | 2  |   |   |   | 18                          | 2.3                                    |
| 2   |  | 1  | 1  |   |   |    |   |   |   | 2                           | 2.5                                    |
| 1   |  |    |    |   |   | 1  |   |   |   | 1                           | 6.0                                    |
| 0   | 6  | 16 | 18 |   | 1 | 4  |   |   | 1 | 46                          | 2.8                                    |
| Total   | 9  | 38 | 39 | 2 | 1 | 15 | 1 |   | 1 | 106                         | 3.02                                   |

This table should be read as follows: Of the students who received training in punch-card machine courses during the years 1938 to 1946, inclusive, one earned 29 semester hours of credit in Secretarial Administration courses. This individual earned 2 semester hours of credit in punch-card machine courses. The average number of semester hours of credit earned in punch-card machine courses by students in the 29 semester hour level in Secretarial Administration was 2.0.



An analysis of the data in Table XVII reveals that an average of 13.9 semester hours of credit in Accounting was earned by the students who received punch-card machine training. The average number of semester hours of credit in punch-card machine courses earned by students who pursued Accounting courses was 3.4. One or more courses in Accounting were studied by 98 of the 106 individuals who were included in this survey.

An examination of the data in Table XVIII shows that an average of 18.8 semester hours of credit in Business Administration courses was earned by the participants in this study. The data further reveal that 95 of the 106 individuals had completed one or more courses in Business Administration. The average number of semester hours of credit earned in punch-card machine courses by the 95 students was 3.12.

An examination of the data in Table XIX shows that the students who received punch-card machine training during the years 1938 to 1946, inclusive, had earned an average of 17.6 semester hours of credit in Economics. The 98 individuals who completed one or more courses in Economics earned an average of 3.09 semester hours of credit in punch-card machine courses.

The data in Table XX reveal that of the 106 cases studied, 60 students had earned a mean average of 11.3 semester hours of credit in Secretarial Administration courses, while 46 individuals received no credit in that field of study. A mean average of 3.5 semester hours of

credit in punch-card machine courses was earned by the 60 students who received credit in Secretarial Administration courses.

Table XXI shows a distribution of collegiate scholastic majors of the 106 individuals participating in the survey according to the number of semester hours of credit in punch-card machine courses.

According to Table XXI, 28, or 26.4 per cent, of those individuals who majored in General Business completed an average of 3.5 semester hours of credit in punch-card machine courses.

In the Secretarial Administration category of majors, 16 cases, representing 15 per cent, were listed. The average number of semester hours of credit in punch-card machine courses completed by the Secretarial Administration majors was 3.1.

Twenty, or 18.8 per cent, of the total number of cases studied were in the field of Accounting. An average of 2.9 semester hours in punch-card machine courses was completed by individuals in this group.

There appeared to be no significant differences in the various major fields with respect to the average number of semester hours completed in punch-card machine courses.

However, those individuals in the General Business field of study had received, on the average, one-half semester hour of credit in punch-card machine courses in excess of the three hours of credit available in the basic course,

B. A. 400.

TABLE XII

## RELATIONSHIP OF SCHOLASTIC MAJORS TO THE NUMBER OF SEMESTER HOURS OF CREDIT EARNED IN PUNCH-CARD MACHINE COURSES

| Major                      | Semester Hours of Credit in Punch-Card Machines |           |           |          |          |           |          |   |          | Total No. of Students | Average No. of Semester Hours |
|----------------------------|---|-----------|-----------|----------|----------|-----------|----------|---|----------|-----------------------|-------------------------------|
|                            | 1   | 2         | 3         | 4        | 5        | 6         | 7        | 8 | 9        |                       |                               |
| Accounting                 | 2   | 7         | 9         | 1        |          |           |          |   | 1        | 20                    | 2.9                           |
| Agricultural Economics     |   | 1         |           |          |          |           |          |   |          | 1                     | 2.0                           |
| Arts and Sciences          |   |           |           |          |          | 1         |          |   |          | 1                     | 6.0                           |
| Business Education         | 1   | 1         | 2         |          |          | 2         |          |   |          | 6                     | 2.5                           |
| Banking and Finance        |   | 2         | 1         |          |          | 1         |          |   |          | 4                     | 3.2                           |
| Economics                  | 1   | 2         |           | 1        |          |           |          |   |          | 4                     | 2.2                           |
| Engineering                |   | 1         |           |          |          | 1         |          |   |          | 2                     | 4.0                           |
| General Business           | 2   | 8         | 11        |          |          | 7         |          |   |          | 28                    | 3.5                           |
| Home Economics             | 1   | 1         |           |          |          |           |          |   |          | 2                     | 1.5                           |
| Intensive Business         |   |           | 1         |          |          |           |          |   |          | 1                     | 3.0                           |
| Marketing                  | 4   |           | 1         |          |          |           |          |   |          | 5                     | 1.4                           |
| Personnel Administration   | 1   |           |           |          |          |           |          |   |          | 1                     | 1.0                           |
| Secretarial Administration |   | 7         | 6         |          |          | 2         | 1        |   |          | 16                    | 3.1                           |
| Sociology                  |   | 1         |           |          |          |           |          |   |          | 1                     | 2.0                           |
| Unclassified               | 2   | 2         | 7         |          | 1        | 1         |          |   |          | 13                    | 2.9                           |
| <b>Total</b>               | <b>9</b>  | <b>38</b> | <b>39</b> | <b>2</b> | <b>1</b> | <b>15</b> | <b>1</b> |   | <b>1</b> | <b>106</b>            | <b>3.02</b>                   |

This table should be read as follows: Of the 106 students who received training in punch-card machine courses during the years 1938 to 1946, inclusive, 20 majored in Accounting. Two students each earned one semester hour of credit in punch-card machine courses; each of 7 students earned 3 semester hours of credit; one earned 4 semester hours of credit; and one earned 9 semester hours of credit in punch-card machine courses. An average of 2.9 semester hours of credit in punch-card machine courses is indicated for Accounting majors.

Table XXII presents a tabulation of 103 replies to the question, "Are you now using punch-card accounting machines?" analyzed according to the number of semester hours of credit respondents had earned in punch-card machine courses.

The replies to the question, "Are you now using punch-card accounting machines?" indicated that 19, or 17.9 per cent, of those individuals replying were engaged in business endeavor requiring the use of punch-card equipment. This tends to emphasize the vocational nature of punch-card machine courses. Since 17.9 per cent of the respondents replied that they were using punch-card machine equipment, this may be indicative of the importance of this type of vocational training.

All equipment used in training the students in the various punch-card machine courses at Oklahoma Agricultural and Mechanical College during the years 1938 to 1946, inclusive, was supplied by the International Business Machines Corporation. As the training was given on equipment manufactured by the International Business Machines Corporation, it was anticipated that no replies would be received from operators of equipment manufactured by other companies; and no such replies were received. All of the 19 operators of punch-card machine equipment who replied to the questionnaire were using equipment made by the manufacturer of the machines on which they had received their training.

A further analysis of data presented in Table XXII reveals that the average number of semester hours of credit

TABLE XXII

REPLIES TO THE QUESTION, "ARE YOU NOW USING PUNCH-CARD ACCOUNTING MACHINES?" CLASSIFIED ACCORDING TO THE NUMBER OF SEMESTER HOURS OF CREDIT RESPONDENTS EARNED IN PUNCH-CARD MACHINE COURSES

| "Are You Now<br>Using Punch-Card<br>Accounting<br>Machines?" | Semester Hours of Credit<br>in Punch-Card Machines |    |    |   |   |    |   |   |   | Number<br>of<br>Replies | Per<br>Cent<br>of<br>Total<br>Replies |
|--|--|----|----|---|---|----|---|---|---|-------------------------|---------------------------------------|
|  | 1  | 2  | 3  | 4 | 5 | 6  | 7 | 8 | 9 |                         |                                       |
| Yes  |  | 5  | 8  | 1 | 1 | 4  |   |   |   | 19                      | 17.9                                  |
| No   | 8  | 32 | 31 | 1 |   | 11 |   |   | 1 | 84                      | 79.3                                  |
| No Reply   | 1  | 1  |    |   |   |    |   | 1 |   | 3                       | 2.8                                   |
| Total  | 9  | 38 | 39 | 2 | 1 | 15 | 1 |   | 1 | 106                     | 100.0                                 |

This table should be read as follows: Nineteen, or 17.9 per cent, of the 103 respondents stated that they were using punch-card accounting machines; 5 of whom had earned 2 semester hours of credit in punch-card machine courses; 8 of whom had earned 3 semester hours of credit in punch-card machine courses, etc.

earned in punch-card machine courses by the 19 who reported as being users of this equipment was 3.5.

The data presented in Table XXIII reveal that 19 of the former students of punch-card machine courses who received their training during the years 1938 to 1946, inclusive, were actually engaged in jobs requiring the operation of punch-card machine equipment.

It was believed that the data would be more meaningful if specific employment situations were supplied. Accordingly, the questionnaires were further analyzed for the purpose of securing this information.

An examination of the data in Table XXIII reveals that 5 individuals in the professional job classification answered "yes" to the question, "Are you now using punch-card accounting machines?" Of these 5 individuals, 4 were graduates, as shown in Table XXIV. Jobs held by these graduates included 1 Chief Accountant, 1 Statistician, 1 Instructor at Oklahoma Agricultural and Mechanical College, and 1 Electric Accounting Machines Salesman. The non-graduate was employed as an Assistant Instructor at Oklahoma Agricultural and Mechanical College.

A further analysis of the data in Table XXIII reveals that 13 respondents were in the clerical job classification, and Table XXIV shows that 10 of these were graduates. Jobs held by these graduates include 1 Partnership Distribution Clerk, 2 Accounting Clerks, 1 Secretary, 2 Accountants, 1 Assistant Supervisor of Electric Accounting Machines, 1 Accounts Payable Clerk, 1 Auditor at Oklahoma Agricultural

TABLE XXIII

REPLIES TO THE QUESTION, "ARE YOU NOW USING PUNCH-CARD ACCOUNTING MACHINES?" CLASSIFIED ACCORDING TO THE JOB CLASSIFICATIONS OF RESPONDENTS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1936 TO 1946, INCLUSIVE

| "Are You Now<br>Using Punch-Card<br>Accounting<br>Machines?" | Job Classification |                   |          |                |                |           |         | Number<br>of<br>Replies | Per Cent<br>of<br>Total<br>Replies |
|--|--------------------|-------------------|----------|----------------|----------------|-----------|---------|-------------------------|------------------------------------|
|  | Professional       | Semi-Professional | Clerical | Skilled Worker | Federal Worker | Housewife | Student |                         |                                    |
| Yes  | 5                  | 13                | 1        |                |                |           |         | 19                      | 17.9                               |
| No   | 17                 | 11                | 31       |                | 2              | 7         | 14      | 82                      | 77.4                               |
| No Reply   | 1                  |                   |          |                |                | 1         | 3       | 5                       | 4.7                                |
| Total  | 23                 | 11                | 44       | 1              | 2              | 8         | 17      | 106                     | 100.0                              |

This table should be read as follows: Of the 19 respondents who replied affirmatively to the question, "Are you now using punch-card accounting machines?" 5 were employed in professional vocations; 13 were employed in clerical positions; and 1 was classified as a skilled worker. Of the 106 cases studied, 17.9 per cent were using punch-card accounting machines.

TABLE XXIV

REPLIES TO THE QUESTION, "ARE YOU NOW USING PUNCH-CARD ACCOUNTING MACHINES?" CLASSIFIED ACCORDING TO THE JOB CLASSIFICATIONS OF GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE

| "Are You Now Using Punch-Card Accounting Machines?" | Job Classification |                   |          |                |           |         | Number of Replies | Per Cent of Total Replies |
|---|--------------------|-------------------|----------|----------------|-----------|---------|-------------------|---------------------------|
|   | Professional       | Semi-Professional | Clerical | Federal Worker | Housewife | Student |                   |                           |
| Yes   | 4                  |                   | 10       |                |           |         | 14                | 20.0                      |
| No  | 10                 | 7                 | 25       | 2              | 6         | 3       | 53                | 75.7                      |
| No Reply  |                    |                   | 2        |                | 1         |         | 3                 | 4.3                       |
| Total   | 14                 | 7                 | 37       | 2              | 7         | 3       | 70                | 100.0                     |

This table should be read as follows: Of the 70 graduates surveyed, 67 replied to the question, "Are you now using punch-card accounting machines?" Fourteen, or 20 per cent, replied affirmatively; 4 of whom were in professional employment, and 10 of whom were in clerical employment.



and Mechanical College, and 1 Stenographer. The 3 non-graduates were employed in the clerical job classifications as follows: 1 Electric Accounting Machine Operator and Supervisor, 1 Assistant Instructor at Oklahoma Agricultural and Mechanical College, and 1 Chief Yeoman in the United States Navy.

One respondent in the skilled worker job classification was employed in a clerical job with the specific employment title of Tabulating Machine Operator.

The desirability of knowing the annual income and the income range of punch-card machine operators was acknowledged. Omitting the 2 assistant instructors who replied that they were using punch-card machines, the data in Table XIV reveal that 17 of the punch-card machine operators were receiving annual incomes ranging from \$1500 to \$5000 or more. The median annual salary for the 17 operators of punch-card machine equipment was approximately \$3000.

An analysis of Table XVI reveals that 12, or 11.3 per cent, of the 106 cases studied indicated an affirmative reply to the question, "Have you received additional instruction in business subjects since leaving Oklahoma Agricultural and Mechanical College?" Of this number, 9 were graduates, 2 were classified as seniors, and 1 had attained the collegiate scholastic rank of junior.

A tabulation of the individuals and the types of institutions attended shows that 2 respondents were enrolled for work with correspondence schools, 2 had enrolled for work in business colleges, 2 had received additional training in

TABLE XXV

SUMMARY OF ANNUAL INCOMES EARNED BY INDIVIDUALS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE, AND WHO ARE NOW USING PUNCH-CARD MACHINE EQUIPMENT

| Present<br>Job Title                                    | Annual Income Derived<br>from Occupation |            |            |            |            |            |            |            |            | Total |           |           |
|---|--|------------|------------|------------|------------|------------|------------|------------|------------|-------|-----------|-----------|
|   | \$5000 or more                           | 4500--4999 | 4000--4499 | 3500--3999 | 3000--3499 | 2500--2999 | 2000--2499 | 1500--1999 | 1000--1499 |       | 500-- 999 | 0-- 499   |
| Accountant  |  |            |            | 1          | 1          |            |            |            |            |       |           | 2         |
| Accounting Clerk  |  |            |            | 1          | 1          |            |            |            |            |       |           | 2         |
| Accounting Machine Salesman                             | 1  |            |            |            |            |            |            |            |            |       |           | 1         |
| Accounts Payable Clerk                                  |  |            |            | 1          |            |            |            |            |            |       |           | 1         |
| Assistant Instructor                                    |  |            |            |            |            |            |            |            | 2          |       |           | 2         |
| Assistant Supervisor of<br>Electric Accounting Machines |  |            |            |            |            | 1          |            |            |            |       |           | 1         |
| Auditor   |  | 1          |            |            |            |            |            |            |            |       |           | 1         |
| Chief Accountant  |  |            | 1          |            |            |            |            |            |            |       |           | 1         |
| Chief Yeoman, U. S. Navy                                |  | 1          |            |            |            |            |            |            |            |       |           | 1         |
| Electric Accounting Machines<br>Operator and Supervisor |  |            |            |            |            | 1          |            |            |            |       |           | 1         |
| Instructor  |  |            |            |            | 1          |            |            |            |            |       |           | 1         |
| Partnership Distribution Clerk                          |  |            |            |            | 1          |            |            |            |            |       |           | 1         |
| Secretary   |  |            |            |            |            |            |            | 1          |            |       |           | 1         |
| Statistician  |  |            |            |            | 1          |            |            |            |            |       |           | 1         |
| Stenographer  |  |            |            |            |            |            | 1          |            |            |       |           | 1         |
| Tabulating Machine Operator                             |  |            |            |            |            | 1          |            |            |            |       |           | 1         |
| <b>Total</b>  | <b>1</b>                                 | <b>2</b>   | <b>1</b>   | <b>1</b>   | <b>5</b>   | <b>5</b>   | <b>1</b>   | <b>1</b>   | <b>2</b>   |       |           | <b>19</b> |

This table should be read as follows: Of the 19 respondents who indicated that they were using punch-card machine equipment, 1 was an accountant receiving an annual income of \$3000-\$3499 from his occupation, and 1 was an accountant who reported an annual income of \$2500-\$2999 from his occupation. Only one respondent reported an annual income of \$5000 or more.

TABLE XXVI

REPLIES TO THE QUESTION, "HAVE YOU RECEIVED ADDITIONAL INSTRUCTION IN BUSINESS SUBJECTS SINCE LEAVING A. & M. COLLEGE?"

| "Have You Received<br>Additional Training<br>In Business Subjects?" |     | Highest Collegiate<br>Scholastic Rank<br>Attained |    |    |    |    | Institution<br>Attended             | Subjects<br>Studied      | Time in<br>Attendance<br>and/or<br>Credit Earned |
|---|-----|---|----|----|----|----|-------------------------------------|--------------------------|--|
| No  | Yes | Gr  | Sr | Jr | So | Fr |                                     |                          |  |
|   | 1   | 1   |    |    |    |    | International<br>Accounting Society | Accounting               | Not stated                                       |
|   | 1   | 1   |    |    |    |    | International<br>Business Machines  | IBM Service              | 130 clock<br>hours                               |
|   | 1   | 1   |    |    |    |    | Univ. of Illinois                   | Mathematics<br>Economics | 32 semester<br>hours                             |
|   | 1   |   | 1  |    |    |    | Business College                    | Review of<br>Secretarial | Not stated                                       |
|   | 1   |   |    | 1  |    |    | International<br>Business Machines  |                          | 1 month  |
|   | 1   | 1   |    |    |    |    | Tulsa University                    | CPA Coaching             | Not completed                                    |
|   | 1   | 1   |    |    |    |    | Tulsa University                    | Secretarial              | 6 semester<br>hours                              |
|   | 1   | 1   |    |    |    |    | Business College                    | Bookkeeping<br>Shorthand | 14 months  |
|   | 1   | 1   |    |    |    |    | St. Mary's                          | Accounting               | 8 semester<br>hours                              |

TABLE XXVI (Continued)

REPLIES TO THE QUESTION, "HAVE YOU RECEIVED ADDITIONAL INSTRUCTION IN BUSINESS SUBJECTS SINCE LEAVING A. & M. COLLEGE?"

| "Have You Received Additional Training In Business Subjects?" |     | Highest Collegiate Scholastic Rank Attained |    |    |    |    | Institution Attended              | Subjects Studied                          | Time in Attendance and/or Credit Earned      |
|---|-----|---|----|----|----|----|-----------------------------------|---|--|
| No  | Yes | Gr  | Sr | Jr | So | Fr |                                   |   |  |
|   | 1   | 1   |    |    |    |    | International Accountants Society | Accounting                                | 72 of 90 assignments                         |
|   | 1   | 1   |    |    |    |    | General Motors Accounting School  | Accounting                                | 1 week                                       |
|   | 1   |   | 1  |    |    |    | Tulane University                 | Advertising<br>Salesmanship<br>Accounting | 4 sem. hours<br>4 sem. hours<br>6 sem. hours |
| 94  | 12  | 9   | 2  | 1  |    |    |                                   |   |  |

This table should be read as follows: One graduate indicated that, at the time of the study, additional instruction in business subjects had been received since leaving Oklahoma A. & M. College. This training was taken in correspondence study in accounting. The amount of credit or the time spent in study of this subject was not stated. Of the 106 cases studied, 94 indicated that no additional training in business subjects had been received since leaving Oklahoma A. & M. College. Of the 12 who received additional training, 9 were graduates, 2 had attained the collegiate scholastic rank of senior, and 1 had attained the collegiate scholastic rank of junior.

service schools operated by an electric accounting machine manufacturer and distributor, 5 had attended other universities, and 1 had attended a short-course sponsored by General Motors Corporation for its employees and representatives.

A placement service for punch-card machine operators was established on the Oklahoma Agricultural and Mechanical College campus during the latter part of 1946.

It was believed that, based upon the affirmative replies received to the questions in the placement service portion of the questionnaire, a greater use will be made of the services and facilities offered by the placement service for punch-card machine operators.

According to the data in Table XXVII, 19, or 18.2 per cent, of those individuals returning questionnaires knew that a placement service for punch-card machine operators had been established in the Business Machines Section of the Department of Business Administration in the Division of Commerce at Oklahoma Agricultural and Mechanical College.

The data show that 2 respondents had used the services of the placement service. It is believed that those individuals who replied to the question, "Have you used the services of the bureau?" interpreted it to mean, "Has the placement service been of benefit to you in obtaining employment?"

It is evident that the inauguration of the placement service for those who received training in punch-card machines will satisfy a definite need, inasmuch as 17, or 17.1 per cent,

TABLE XXVII

REPLIES TO QUESTIONS CONCERNING A PLACEMENT SERVICE FOR PUNCH-CARD MACHINE OPERATORS, AS GIVEN BY RESPONDENTS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE

| Question  | No  | Yes | Total Number of Replies |
|---|-----|-----|-------------------------|
| Did you know that a placement service has been set up for punch-card machine operators? | 85  | 19  | 104                     |
| Have you used the services of the placement service?                                    | 102 | 2   | 104                     |
| Do you desire to use the services of the placement service?                             | 82  | 17  | 99                      |
| Would you like to list your job vacancies and opportunities with the placement service? | 68  | 15  | 83                      |

This table should be read as follows: The question, "Did you know that a placement service has been set up for punch-card machine operators?" was answered affirmatively by 19 of the respondents, and negatively by 85 of the respondents. The total number of respondents checking this question was 104.

of the 99 respondents replied affirmatively to the question, "Do you desire to use the services of the placement service?"

The question, "Would you like to list your job vacancies and opportunities with the placement service?" was designed to elicit replies from individuals in supervisory positions requiring the selection and hiring of punch-card machine operator personnel. Of the 83 respondents who answered this question, 15 stated that they would like to use this service in locating punch-card machine operator personnel.

The questionnaires were investigated with the view of determining the job classifications of the respondents who had indicated a willingness to list their job vacancies and job opportunities with the placement service. Job classifications, as revealed by the questionnaires, included 1 statistician in a supervisory professional position; 1 non-supervisory accounting clerk; 1 secretary to an executive; 1 supervisory professional chief accountant; 2 non-supervisory clerical bookkeepers; 1 non-supervisory fiscal accounts payable clerk; 1 supervisory clerical senior stock clerk; 1 supervisory auditor; 1 semi-professional supervisory office manager; 1 supervisory clerical assistant supervisor of electrical accounting machines; 1 supervisory clerical Accounting Machines Operator and Supervisor; and 3 students indicated a willingness to list their job opportunities.

It is believed that these three students interpreted the question, "Would you like to list. . ." as meaning, "Do you desire to use the services of the placement service?" as an

examination of the questionnaires revealed that these three respondents answered both questions affirmatively.

It is acknowledged that some of the individuals who indicated a willingness to list job vacancies and job opportunities with the placement service might not have been, at the time of the study, in a position to employ punch-card machine personnel immediately. However, it should be pointed out that these respondents exhibited a positive attitude of cooperation with the placement service.

An analysis of Tables XXVIII and XXIX reveals that 45.3 per cent of the 106 cases studied indicated that the training they received in punch-card machine courses was of benefit to them in their vocational progress. There appeared to be no significant difference between the replies received from the graduates and the non-graduates. Of the 70 graduates who participated in the study, 42.8 per cent stated that the training they had received in punch-card machine courses had been of benefit to them in their vocational progress.

No explanation is offered for the fact that 9 students who were still enrolled in Oklahoma Agricultural and Mechanical College replied, "Yes" to the question "Has the training you received in Punch-Card Machine Operation been of benefit in your vocational progress?"

Each individual participating in the study was asked to make comments and suggestions for the improvement of selected subjects and courses contained in the questionnaire. Many interesting comments about the general nature and value of



TABLE XXVIII

REPLIES TO THE QUESTION, "HAS THE TRAINING YOU RECEIVED IN PUNCH-CARD MACHINE OPERATION BEEN OF BENEFIT IN YOUR VOCATIONAL PROGRESS?" CLASSIFIED ACCORDING TO THE JOB CLASSIFICATIONS OF RESPONDENTS WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE

| Present Job Classification | Yes | No | No Reply | Total Number of Replies |
|----------------------------|-----|----|----------|-------------------------|
| Professional               | 10  | 12 | 1        | 23                      |
| Semi-Professional          | 6   | 4  | 1        | 11                      |
| Clerical                   | 21  | 21 | 2        | 44                      |
| Skilled Worker             | 1   |    |          | 1                       |
| Federal Employee           |     | 2  |          | 2                       |
| Housewife                  | 1   | 6  | 1        | 8                       |
| Student                    | 9   | 6  | 2        | 17                      |
| Total                      | 48  | 51 | 7        | 106                     |

This table should be read as follows: Twenty-three respondents in the professional job classification replied to the question, "Has the training you received in Punch-Card Machine Operation been of benefit in your vocational progress?" Ten stated that it had been of benefit to them in their vocational progress, while 12 stated that the training had been of no benefit to them in their vocational progress. Of the 106 cases studied, 48 indicated that the training was of benefit, while 51 indicated that the training was of no benefit to them in their vocational progress. Seven did not reply to the question.

TABLE XXIX

REPLIES TO THE QUESTION, "HAS THE TRAINING YOU RECEIVED IN PUNCH-CARD MACHINE OPERATION BEEN OF BENEFIT IN YOUR VOCATIONAL PROGRESS?" CLASSIFIED ACCORDING TO THE JOB CLASSIFICATIONS OF GRADUATES WHO RECEIVED TRAINING IN PUNCH-CARD MACHINE THEORY AND OPERATION DURING THE YEARS 1938 TO 1946, INCLUSIVE

| Present Job Classification | Yes | No | No Reply | Total Number of Replies |
|----------------------------|-----|----|----------|-------------------------|
| Professional               | 6   | 6  | 2        | 14                      |
| Semi-Professional          | 4   | 2  | 1        | 7                       |
| Clerical                   | 17  | 17 | 2        | 36                      |
| Federal Employee           |     | 2  |          | 2                       |
| Housewife                  | 1   | 5  | 1        | 7                       |
| Student                    | 2   | 2  |          | 4                       |
| Total                      | 30  | 34 | 6        | 70                      |

This table should be read as follows: Fourteen graduates in the professional job classification replied to the question, "Has the training you received in Punch-Card Machine Operation been of benefit in your vocational progress?" Six of the graduates stated that the training had not been of benefit, six graduates stated that the training had been of benefit to them, while 2 did not reply to the question. Of the 70 graduates, 30 indicated that the training had been of benefit, 34 stated that the training had been of no value, and six did not reply to the question.

the courses were received. However, only one individual offered concrete suggestions for the improvement of punch-card machine courses. These suggestions, which are quoted in their entirety, have already been put into effect.

"There are only two suggestions that I could offer for the improvement of your punch-card machine courses. First, if possible, have complete book-keeping records made up and then have students work accounting problems by using these records to get their information. By records, I mean all the various journal and ledgers and stock records, etc. Second, if a student intended to be a machine operator I would suggest that he get more practical work on the machines. I believe that next to accounting I have benefitted more by the machines courses than any other."

Each recipient of the questionnaire was requested to "Please mark the following courses in the order of their usefulness in your business experiences. (Use the fig. 1 for greatest value; use the fig. 2 for minor value; use the fig. 0 for no value.)"<sup>9</sup>

In analyzing the data received from the questionnaires, it was noted that the respondents were comparing the three punch-card machine courses individually with such fields of study as accounting, business administration, economics, and business law, each of which would include all of the courses offered in those respective fields of study. An analysis of the questionnaires revealed that a number of the respondents did not comply with the instructions in indicating their answers to this request. Therefore, because of (1) the use of unsatisfactory terminology in instructions (2) failure of the respondent to comply with instructions, and (3) the

---

<sup>9</sup>See Appendix, p. 75.

faulty construction of the questionnaire, replies to this section of the questionnaire were considered invalid and are not included in the study.

### CHAPTER III

#### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study, as set forth in Chapter I, is to make an investigation of the educational and vocational status of individuals who received instruction in Punch-Card Machine Theory and Operation (B. A. 400) at Oklahoma Agricultural and Mechanical College during the years 1938 to 1946, inclusive, and to determine the extent of the utilization of this training by these individuals in their post-college business activities. It is an incidental purpose of this study to acquaint these former students with the placement service for punch-card machine operators which was established in the Business Machines Section of the Department of Business Administration, Division of Commerce, Oklahoma Agricultural and Mechanical College, during the fall of 1946.

The data used in this study were obtained from (1) the permanent record files in the Office of Admissions (2) the class records and individual personnel files in the Office of the School of Commerce (3) the files and records in the Graduate Office (4) students who were enrolled in college at the time of this study, and (5) questionnaires returned by former students who had received instruction in Punch-Card Machine Theory and Operation. These data were presented and analyzed in Chapter II.

Of the 362 individuals originally canvassed, 148, or 40.88 per cent, returned postal reply cards expressing their willingness to cooperate in this study. To each of these 148 individuals a questionnaire was mailed. One hundred twenty, or 33.15 per cent, returned questionnaires; however, 14, or 3.87 per cent, of these returned questionnaires were incomplete and were not used in compiling the data for this study, except as noted. Follow-up efforts were unsuccessful in securing questionnaires from 28 of those who had indicated their willingness to participate in the study. Data for use in this study were obtained from 106 complete questionnaires, representing replies from 29.28 per cent of the total number of individuals originally canvassed for cooperation.

A summary of the findings is presented in the paragraphs that follow.

Employment Status of Respondents. No unemployment existed among the 106 individuals who replied to the questionnaire. Thirty-six, or 50.2 per cent, of the 70 graduates were employed in clerical jobs. Twenty-one, or 30 per cent, of the graduates were employed in professional or semi-professional vocational endeavor. Two of the graduates were employed in Federal Civil Service. Of the 11 respondents who were not directly employed, 4 were students and 7 were housewives.

Ten, or 27.8 per cent, of the 36 non-graduates were employed in clerical jobs. Eight, or 22.3 per cent, of the non-graduates were employed in professional and semi-professional positions. One non-graduate was employed as

a skilled worker. Two, of the 17 respondents who were not directly employed, were classified as housewives and 15 were classified as students.

The 70 graduates had accumulated approximately 330 years of service in the various job classifications for an average job tenure of 4.7 years.

Utilization and Value of Punch-Card Machine Training.

Nineteen, or 17.9 per cent, of the 106 individuals who replied to the questionnaire reported that they were using punch-card machines in their employment. Fourteen, or 20 per cent, of the graduates were using punch-card machines. A breakdown of the job classifications shows that, of the 19 individuals using punch-card machines, 5 are classified as professional employees, 13 are classified as clerical employees, and 1 is classified as a skilled worker.

Forty-eight, or 48.5 per cent, of the 99 individuals who replied to the question, "Has the training you received in Punch-Card Machine Operation been of benefit in your vocational progress?" indicated that they considered the training in punch-card machines of value to them in their vocational progress.

Income. Fifty-three, or 59.5 per cent, of the individuals participating in the study were receiving annual incomes within the range of \$2000 to \$3500. There were 4, or 4.7 per cent, receiving incomes of \$5000 or more per year. The data disclosed that the median income for the graduates was within

the \$3000-\$3499 annual income bracket. The median annual income for the non-graduates was within the \$2000-\$2499 annual income bracket. The graduates who had received training in Punch-Card Machine Theory and Operation during the years 1938 to 1946, inclusive, received, on the average, somewhere between \$500 and \$1500 more per year than the non-graduates.

The median annual income for persons who reported that they were using punch-card machines on their present jobs was approximately \$3000.

Education. The data revealed that 12, or 11.3 per cent, of the 106 individuals who participated in this survey had received additional organized training in business subjects after they left Oklahoma Agricultural and Mechanical College. Of these 12, 9 were graduates, 2 had attained the collegiate scholastic rank of senior, and 1 had attained the collegiate scholastic rank of junior. A tabulation of the types of institutions attended showed that 2 individuals had enrolled in correspondence schools, 2 attended business colleges, 2 attended service schools conducted by the International Business Machines Corporation, 5 attended other universities, and 1 received additional training in a General Motors Corporation service school.

At the time that they terminated their study at the Oklahoma Agricultural and Mechanical College, 96, or 90 per cent, of the 106 respondents had received an average



of 13.9 semester hours of credit in Accounting courses; 98, or 92 per cent, of the 106 respondents had received an average of 17.6 semester hours of credit in Economics courses; and 95, or 89 per cent, of the 106 respondents had received an average of 18.8 semester hours of credit in Business Administration courses. Sixty, or 58 per cent, of the 106 respondents had received an average of 11.3 semester hours of credit in Secretarial Administration courses.

Growth of Enrollment in Punch-Card Machine Theory and Operation. Classes for the year 1946 exceeded the previous peak enrollment established for these classes in 1940. In 1940, 64 individuals received training and instruction in Punch-Card Machine Theory and Operation, while in 1946, 94 individuals received this training, representing an increase of 47 per cent.

Placement Service. Nineteen, or 18.2 per cent, of 104 replies from former punch-card machine students indicated a knowledge of the establishment of a placement service for punch-card machine operators. Eighty-five, or 81.8 per cent, replied that they were not previously aware of the existence of the placement service.

Fifteen, or 55.6 per cent, of the 27 individuals employed in supervisory job classifications expressed a willingness to list their job vacancies and job opportunities with the placement service.

### Conclusions

1. Approximately 18 per cent of the respondents included in this study are using punch-card machines in their present occupations.
2. Graduates of Oklahoma Agricultural and Mechanical College who received training in Punch-Card Machine Theory and Operation during the period covered by the study receive, on the average, an amount within the \$3000-\$3499 annual income bracket. Non-graduates who were included in the study receive an amount within the \$2000-\$2499 annual income bracket. Non-graduates receive an annual income somewhere between \$500 and \$1500 less than the graduates.
3. Of the respondents included in the study, about one in ten received additional organized training in business subjects after they left Oklahoma Agricultural and Mechanical College.
4. There appears to be little or no relationship between the number of semester hours of credit earned in punch-card machine courses and present job classifications or incomes of the respondents.
5. About one half of the graduates and a little more than one fourth of the non-graduates included in this study are employed in clerical jobs.
6. The principles learned and the skills acquired by students who complete the course B. A. 400, Punch-Card Machine Theory and Operation, enable them to perform the duties of punch-card machine operators in jobs involving the operation of punch-card machines.

7. The replies to the placement service portion of the questionnaire indicated a definite need for services such as those which the placement service was established to provide.

8. Total enrollment in Punch-Card Machine Theory and Operation classes in Oklahoma Agricultural and Mechanical College has almost doubled since 1940.

9. A high degree of job stability has been established by the graduates included in this study.

#### Recommendations

The following recommendations, which are based on the findings and conclusions in this study, appear to be warranted:

1. As the scope of this study was limited to students who had received credit in B. A. 400 during the nine-year period covered by this survey, it is recommended that a similar study be made of students who have established credit in I. B. 120, Punch-Card Machines. Students in the latter course receive, in addition to key-punch machine training, training in the theory and operation of punch-card machines. Such students are qualified by training to perform the duties of punch-card machine operators.

This follow-up study should be made with a view to (1) evaluating the present instructional program in I. B. 120, Punch-Card Machine classes, and (2) determining, if possible, the extent of job satisfaction.

2. As 45.3 per cent of the respondents in this study reported that the training they received in Punch-Card Machine Theory and Operation has been of value to them in their vocational progress, and as only 17.9 per cent reported that they are now using punch-card machines, it is recommended that a study of the vocational values attributed to punch-card machines courses by former students who have received training in punch-card machine courses be made.

3. It is recommended that a "machine load factor" study be made to determine the adequacy of the present punch-card machine equipment with reference to the optimum practice time necessary to develop the degree of skill required for efficient job performance.

4. In order that the placement service established in the Business Machines Section of the Department of Business Administration, Oklahoma Agricultural and Mechanical College, may better serve both employers and punch-card machine operators, it is recommended that more employers of punch-card machine personnel be encouraged to use the facilities of the placement service.

BIBLIOGRAPHY

## BIBLIOGRAPHY

Books

- Abelson, Harold H. The Art of Educational Research.  
New York: World Book Company, 1933.
- Baehne, G. W. The Punch Card Method in Colleges and Universities. New York: Columbia University Press, 1935.
- Campbell, William Giles. A Form Book for Thesis Writing.  
New York: Houghton Mifflin Company, 1939.
- Good, Carter V., A. S. Barr, and Douglas E. Scates. The Methodology of Educational Research. New York: D. Appleton-Century, 1938.

Periodicals

- Bain, Read, "Stability of Questionnaire Responses,"  
American Journal of Sociology, 37:445-453, November, 1931.
- Benson, Dudley W., "Follow-Up--How? How Much?" The Balance Sheet, 24:14-16, September, 1942.
- Blackstone, E. C., "Evaluation of Research Techniques,"  
The National Business Education Quarterly, 10:7-10, May, 1942.
- Pavan, Ann, "What Can Follow-Up Studies Contribute to Business Education?" The Journal of Business Education, Vol. XV, No. 4, December, 1939.

Bulletins

- Oklahoma Agricultural and Mechanical College Bulletin--  
General Catalog Issue, 1946-1947 Sessions. Stillwater, Oklahoma.

Unpublished Materials

- Callarman, Cecil Clarence, "A Study of the Post-High School Activities of the Graduates of Ponca City High School for the Years 1934, 1935, 1936, 1937, and 1938," Unpublished Master's thesis, Oklahoma Agricultural and Mechanical College, 1940.
- Morgan, Corra Lucille, "A Follow-Up Study of the Graduates of Jay High School for the Years 1935, 1936, 1937, 1938, 1939, 1940, and 1941," Unpublished Master's thesis, Oklahoma Agricultural and Mechanical College, 1942.
- Randol, Cora, "A Follow-Up Study of the Commercial Graduates of Cameron State Agricultural College for the Years 1936, 1937, 1938, 1939, and 1940," Unpublished Master's thesis. Norman, Oklahoma: University of Oklahoma, 1941.
- Saye, Sue, "An Occupational Survey of the Former Business Students of Arkansas Polytechnic College for the Years 1937, 1938, 1939, 1940, and 1941," Unpublished Master's thesis, Oklahoma Agricultural and Mechanical College, 1943.
- Sittel, Helen Catherine, "A Follow-Up Study of Selected Graduates of Classen High School, Oklahoma City, Oklahoma, for the Years 1939-1941, Inclusive," Unpublished Master's thesis, Oklahoma Agricultural and Mechanical College, 1943.

100 руб. пр.в.

ВАНКОВЕ БУВШИМЕНТ

APPENDIX

100 руб.

21 ВАНКОВЕ



Dear Aggie:

We are making a follow-up study of students who enrolled in Punch-Card and Business Machines courses while attending A. & M. College. This information will be used to determine the efficacy of the program.

The best way we know to find how well the department is succeeding is to find out how well it is aiding former students. A questionnaire, calling for some facts about what you have been doing since leaving school, will be mailed to you upon our receipt of the attached card. Your reply on this card will indicate your willingness to aid in this study. May we count on your cooperation?

Sincerely yours,

(C. L. McCAMMON)

-----

Yes, sir, Mr. McCammon, I certainly do wish to cooperate in the follow-up study of your former students. You may mail my questionnaire to the address as correctly shown below.

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Number)

\_\_\_\_\_  
(Street)

\_\_\_\_\_  
(City)

\_\_\_\_\_  
(State)

-----

(A copy of the postal card used to invite each of the 362 individuals who had received instruction in punch-card machine theory and operation during the years 1938 to 1946, inclusive, to participate in the study. At the bottom is a copy of the postal reply card attached to the request for participation.)

April 30, 1947

Dear Aggie:

You are being missed.

Several days have gone by since we sent you a card seeking your cooperation in our IBM study. Even though you are not presently using IBM equipment, we still need your participation.

Your questionnaire will be mailed to you immediately upon our receipt of your reply indicating your willingness to aid in this study. May we count on you?

(C. L. McCAMMON)

(A copy of the postal card used to follow up the original request for participation in the study.)

TO: \_\_\_\_\_

(Check "X" in the column that applies to your answer.)

YES \_\_\_\_\_ NO \_\_\_\_\_ HAVE YOU RECEIVED ADDITIONAL INSTRUCTION IN BUSINESS SUBJECTS SINCE LEAVING A & M COLLEGE? (If so, please indicate below.)

| NAME OF INSTITUTION | DATE FROM--TO | MONTHS ATTENDED | DEGREE RECEIVED | SUBJECTS COMPLETED | SEMESTER HOURS |
|---------------------|---------------|-----------------|-----------------|--------------------|----------------|
|                     |               |                 |                 |                    |                |

YES \_\_\_\_\_ NO \_\_\_\_\_ DID YOU KNOW THAT A PLACEMENT BUREAU HAS BEEN SET UP FOR PUNCH CARD MACHINE OPERATORS?

YES \_\_\_\_\_ NO \_\_\_\_\_ HAVE YOU USED THE SERVICES OF THE PLACEMENT BUREAU?

YES \_\_\_\_\_ NO \_\_\_\_\_ DO YOU DESIRE TO USE THE SERVICES OF THE BUREAU? (If your reply is yes, an application will be mailed you.)

YES \_\_\_\_\_ NO \_\_\_\_\_ WOULD YOU LIKE TO LIST YOUR JOB VACANCIES AND OPPORTUNITIES WITH THE PLACEMENT BUREAU? (If your reply is yes, further information will be mailed you.)

YES \_\_\_\_\_ NO \_\_\_\_\_ HAS THE TRAINING YOU RECEIVED IN PUNCH CARD MACHINE OPERATION BEEN OF BENEFIT IN YOUR VOCATIONAL PROGRESS?

YES \_\_\_\_\_ NO \_\_\_\_\_ ARE YOU NOW USING PUNCH CARD ACCOUNTING MACHINES? (If so, please check the make.)

1. \_\_\_\_\_ INTERNATIONAL BUSINESS MACHINES    2. \_\_\_\_\_ REMINGTON RAND

PLEASE MARK THE FOLLOWING COURSES IN THE ORDER OF THEIR USEFULNESS IN YOUR BUSINESS EXPERIENCES. (Use the Fig. 1 for greatest value; use the Fig. 2 for minor value; use the Fig. 0 for no value.)

- |  |  |
|--|--|
| 1. _____ ACCOUNTING                      | 6. _____ ECONOMICS                     |
| 2. _____ BOOKKEEPING                     | 7. _____ PUNCH CARD MACHINES           |
| 3. _____ BUSINESS ADMINISTRATION COURSES | 8. _____ PUNCH CARD MACHINE ACCOUNTING |
| 4. _____ BUSINESS LAW                    | 9. _____ PUNCH CARD MACHINE OPERATION  |
| 5. _____ BUSINESS MACHINE OPERATION      |  |

YOUR SUGGESTIONS FOR IMPROVEMENT OF THE COURSES YOU HAVE CHECKED WILL BE VERY HELPFUL. (Please use the reverse side of this form for your comments.)

PRESENT EMPLOYMENT STATUS

JOB CLASSIFICATION (If your duties are of a supervisory nature, mark the proper column with an "S"; otherwise mark with an "X".)

- |  |                                 |
|--|---------------------------------|
| 1. _____ PROFESSIONAL  |                                 |
| 2. _____ PROPRIETOR, MANAGER, OR OFFICIAL  |                                 |
| 3. _____ CLERKS AND KINDRED WORKERS (This includes the so-called white-collar workers. They are the clerical assistants to executives, officials, or business and professional men. They comprise office assistants, sales workers, typists, stenographers, secretaries, shipping and receiving clerks, accounting clerks, office machine operators, etc.) |                                 |
| 4. _____ SKILLED WORKERS AND FOREMEN   |                                 |
| 5. _____ SEMISKILLED WORKER  | 8. _____ HOUSEWIFE              |
| 6. _____ LABORER   | 9. _____ STUDENT                |
| 7. _____ FEDERAL EMPLOYEE  | 10. _____ UNEMPLOYED AT PRESENT |

HOW LONG HAVE YOU HELD YOUR PRESENT JOB CLASSIFICATION?

BALTIMORE PARISHMENT

100 YEARS U.S.A.

Typist:

C. H. Lundquest

BALTIMORE PARISHMENT

100 YEARS U.S.A.