A STUDY OF OKLAHOMA STATE UNIVERSITY TECHNICAL EDUCATION GRADUATES

By

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CHAPTER I

INTRODUCTION

Several years have passed since man first harnessed the power of nuclear energy. It was believed the magnitude of this event would never or could never be transcended. On July 20, 1969, this belief was shattered as millions of people the world over sat intently and solemnly before television sets watching American astronaut, Neil Armstrong, leave the first "impressions of mankind" upon the moon.

Just as the sands of Los Alamos have faded away, so has the newness of man's first adventures in outer space. No longer do we look back in awe at the accomplishments we have achieved. Indeed we now tend to <u>expect</u> such progress to continue. Progress, though expected, does not happen by chance; it is the fruit of labor from the countless number of people involved and dedicated to see it through.

The technician is one of the most important elements in the continuation of modern progress as we have come to know it. His skills are relied upon by virtually all phases of science, business, industry, agriculture, and government. The role of the technician is not only an essential one, but also a complex one. No less complex, however, is an understanding of the educational elements needed to elevate the neophyte to the level of proficiency required of a technician.

Quality technician education is dependent upon many factors. These include such things as modern facilities, an updated and

employable curriculum, a supporting administration program, and most importantly, a well-qualified faculty. Faculty members, by necessity, must have not only a high degree of technical competence, but also an understanding of the pedagogical techniques required to successfully communicate this knowledge and skill to others.

The Department of Technical Education at the Oklahoma State University was initiated in the fall semester of the 1959-1960 school year. This department was organized to provide training for teachers of post-high school technician education programs (1, p. 94). In the spring of 1960 the first Bachelor of Science degree in Technical Education was conferred. Since that time, over 400 individuals have been awarded either a Bachelor of Science (B.S.) degree, a Master of Science (M.S.) degree, or both of these degrees, in Technical Education from the Oklahoma State University.

The Problem

Too often, in the realm of education, we see a condition that parallels a rained-out baseball game, where the game is started, but the final outcome is never determined.

In college we expose a student to an array of behavioral and learning stimuli. After the student reaches an educational apex, such as a B.S. or an M.S. degree, and then leaves the institution, we often lose touch with him. Consequently, any valuable feedback he may have been able to contribute is lost.

The need for a continual graduate follow-up survey has long been recognized as an essential ingredient in determining the adequacy and effectiveness of an institution of higher education (2, p. 111).

Purpose of the Study

The specific purpose of this study was to collect and analyze follow-up data on graduates of the Technical Education B.S. and M.S. degree programs of Oklahoma State University. The results of this study will facilitate:

1. The evaluation of the existing Technical Education programs
2. Improvement of existing Technical Education programs
3. The placement and employment of past and future graduates of the Technical Education programs
4. The interpretation of graduate career patterns
5. The recruitment of new students for the Technical Education programs

Scope of the Study

This study was limited to the graduates of Oklahoma State University who have received either a Bachelor of Science degree, a Master of Science degree, or both of these degrees in Technical Education from the year 1960 through the summer of 1975. Only those graduates who are United States citizens were surveyed.

Definitions

At this point, several terms are defined as they appear in the context of this study.

Technician Education: A planned sequence of classroom and laboratory experiences at the post-secondary school level, but below the baccalaureate level which is designed to prepare persons for a cluster

of job opportunities in a specialized field.

Technical Education: A program designed to prepare persons as instructors of post-secondary technician education programs.

Technical Specialty: That area of technology of which a person has gained specialized skills by either academic means, on-the-job training, or a combination of these.

Technical Instructor: Persons teaching in one or more areas of technical specialization in a Technician Education program.

In much of the literature, the term "technical education" is often taken to mean the same as "technician education," as the latter is defined above.

CHAPTER II

REVIEW OF LITERATURE

Institutions offering technician education programs have for many years considered graduate follow-up studies as an essential part of program evaluation. This technique is employed not only for self-evaluation purposes, but the follow-up data is often required by local, state, or federal agencies which support the institutions. These agencies are usually interested in such things as: graduate employment and unemployment, job titles, and salaries.

The necessity of graduate follow-up studies in higher education programs can be extended to include programs in technician education, for technician education is usually offered in higher education. Nelson (2, p. 112) states:

> ... an institution concerned with providing excellence in higher education must necessarily be concerned with its graduates.

Nelson (2, p. 112) further extends this "concern" for graduates into an active suggestion for a continuing, periodic follow-up:

> Generally, a continuing, periodic follow-up procedure as a means of securing evidence pertinent to the evaluation and improvement of various programs in higher education is a wise endeavor. The values accruing to the institution from complete follow-up services for graduates are great. The alumni become more closely connected with and directly interested in their alma mater. The information obtained serves as one of the bases of analysis of the college programs. The college gains fine public relations materials. And the data provide points for comparison with other institutions.

The significance of graduate follow-up studies to the evaluation of vocational teacher education programs is emphasized by Evans and Terry (3, p. 187):

> Many of the intended outcomes of a teacher education program are not observable while the student is in the program. It may be intended, for example, that the student as a teacher will be able to adapt his courses to new job situations. An example of this circumstance is the problem faced by agriculture teachers in adapting their curricula to meet the needs of agri-business occupations. Outcomes such as this are really only observable after the student has had some teaching experience. Consequently, the evaluation should include a systematic follow-up of the graduates of the program.

The Technical Instructor

Prior to the decade of the sixties, little or no formal teacher education was required of the typical technical teacher. It was generally believed that a "good" technician or engineer was in turn a "good" teacher in his or her particular field of expertise. This viewpoint, however, lacks both scientific and empirical validity.

The U. S. Department of Health, Education, and Welfare (4, p. 32) has published a suggested guide to Technician Education which outlines several qualifications needed by the technical instructor. Concerning educational qualifications, the guide suggests:

> The educational qualifications of faculty members require that they have a mastery of their subject which is greater than the subject content they will teach to their students. They must have the knowledge and capability to use all of the appropriate apparatus, materials, equipment, procedures, techniques, measurements, and determinations and to perform the required special services with the confident skill and adequacy required of the skilled technician. They must also be proficient in, and be able to teach the interpersonal relationships and their required skills in their special field.

From this statement it can be seen that a definite dichotomy between

technical competence and teaching competence can exist.

In addition to the educational qualifications, the technical instructor should have recent job experience (4, p. 33). Concerning the employment or experience qualifications, the guide suggests:

> The employment or experience qualifications are important for all of the teaching staff, and for instructors of technical specialty courses there are special requirements. Employment experience recent enough to be valid and representative of current practice, either as a professional or a technician, involving extensive practice of the skills and competencies they will teach, is almost mandatory. The duration of the employment experience should be sufficient for the teachers to have developed the skills and related interpretive judgments and mature capabilities expected of the technicians in a particular field; from 3 to 5 years is the usual duration of such experience.

One significant key to the qualifications required of the technical instructor could be formed by analyzing the specific tasks he is called upon to perform. Recently, Tinnell (3, p. 27) conducted such a study of technical instructors in the state of Oklahoma. His findings show that in the top decile ranking of 200 tasks, the technical instructor must:

1. Read professional journals
2. Administer written tests
3. Attend faculty meetings
4. Read textbooks
5. Determine final grades
6. Prepare lecture outlines
7. Attend professional meetings
8. Give lectures
9. Present lessons with a chalkboard
10. Organize lesson plans
11. Select course content
12. Write student handout sheets
13. Write course objectives
14. Advise students with scholastic problems
15. Set up demonstrations
16. Read technical journals
17. Grade written tests
18. Give homework assignments

19. Present lessons by problem solving
20. Participate in professional organizations

It is reasonable to believe that the well-rounded curriculum in technical teacher education should prepare the prospective technical instructor to perform these tasks

Previous Research

There has been a considerable amount of research performed in the way of follow-up studies of graduates of vocational and technician education programs. This is largely due to the occupational goals incorporated within the stated objectives of these programs.

Unfortunately, however, there is a considerable void in the quality and quantity of research that has been conducted concerning the technical instructor himself. This is not to say that some very meaningful research has not been conducted in this area, but rather that there is a definite need for much more.

In 1969, Ballard (6) conducted a follow-up study of the graduates of the Technical Education program at Oklahoma State University from 1960 to 1968. His study concerned salaries, career information, geographic data, and educational patterns of the graduates. Also analyzed in Ballard's study were questions concerning why the Technical Education program at Oklahoma State University was chosen, and what extra-professional activities the graduate was involved in.

Some of the more significant findings of Ballard's study showed that:

1. Beginning career patterns of Technical Education graduates were evenly divided into careers in industry, business, or the military.

2. The career objectives of all Technical Education graduates were evenly divided into careers in industry, business, or the military.

3. Technical Education graduates pursuing careers in education tended to be as economically successful as those graduates pursuing careers in industry, business, or the military, based on average (mean) salaries.

4. Technical Education graduates pursuing careers in education tended to do more post-graduate study than did Technical Education graduates pursuing careers in industry, business, or the military.

5. Eighty-nine of 101 respondents intended to pursue an advanced degree.

6. Forty-seven of 98 respondents who were either in education, or intended to enter the education profession, made this career decision after entering the Technical Education program.

7. Fifty-four of 106 respondents would ultimately prefer a career in teaching or educational administration.

These results could have significant value when applied to the interpretation of education and career patterns and objectives, but would have limited worth in program evaluation and upgrading applications.

A similar study was conducted by Rutelonis (7) in 1972. This study was an extension and updating of the follow-up study performed by Ballard (6) and included those graduates from 1960 to 1972.

One significant result of Rutelonis' (7, p. 24) study concerned the respondents of Ballard's study who indicated that they intended to pursue an advanced degree. It was found that during the four-year span from 1968 to 1972, only 23.5 percent of 64 respondents actually had

pursued an advanced degree. This may tend to indicate that educational objectives had been superseded by career objectives; or more simply, it may indicate that serious consideration had not been given to further academic advancement at the time the initial response was made.

Some consideration to program improvement was conducted by Rutelonis (7, p. 25). Respondents were asked what additional course work should have been included in the Technical Education curriculum. From 254 respondents, it was found that more course work was felt to be needed in Business (22.1 percent), Computer Science (18.5 percent), Mathematics (6.3 percent), Social Science (3.5 percent), Technical Courses (20.9 percent), Engineering (16.5 percent), and "none of the above" (12.2 percent).

A survey of new graduates is conducted annually by the University Placement Services of Oklahoma State University. Most of the survey data are collected when the prospective graduate receives his cap and gown, preceeding the actual graduation ceremony, or by mail when graduation in absentia is permitted. The latest of these reports shows the average monthly starting salaries for Technical Education B.S. and M.S. graduates to be $1,046.00 and $1,082.00 per month respectively (8, p. 18). The accuracy of these data can be impaired considerably if a significant number of prospective graduates do not, in reality, start at the pay level reported. Such could be the case if graduates report on potential employment instead of actual employment.

One danger involved in using follow-up data in such complex applications as program evaluation and improvement, lies in the probability of a large number of respondents having irrational or unethical views. In a study conducted on the graduates of the School of Education at the

University of Wisconsin-Milwaukee, Haberman (9, p. 12) warns:

> While it is vital and urgent that we begin to involve our graduate classroom teachers, as colleagues in future planning, there is a real safeguard which must be taken. A substantial minority of these graduates may have bizarre or irrational notions of teacher effectiveness.

This hazard could occur in any research involving the survey method; but the effect from it can be minimized if judicious methods are utilized when collecting and analyzing data, and again when the final results are applied to the actual program evluation and improvement process.

Methodology of Previous Research

Research methodology varies considerably from study to study. A review of some of the methods utilized which are relevant to this study are examined here.

The follow-up study performed by Ballard (6) in 1968 made use of a mailed questionnaire as the survey instrument. Data from the questionnaires were divided into three major areas, to include personal data, educational data, and occupational data. These data were then processed by tabulating the responses and presenting these responses on a basis of percentage or average only.

The study conducted by Ballard in 1968 was succeeded by the aforementioned study conducted by Rutelonis (7) in 1972. For this reason, the methodology of Rutelonis' study was similar in nature to the former study. In Rutelonis' (7, p. 4) study, however, two different questionnaires were sent out. One was for the purpose of updating the data from Ballard's study, and the other was used to obtain information from the Technical Education graduates from 1969 to 1972. Nominal

measurement scales and close-ended questions were used extensively by both Ballard and Rutelonis, although many of the questions were of the fill-in variety as discussed by Tuckman (10, p. 178).

Studies involving evaluation techniques have often utilized opinionnaires with Likert-type scalings. Snider (11) used such an instrument combined with a telephone follow-up survey on a small population. Similar methodology was successfully applied by Kinzer (12) in a study conducted to identify and compare information elements deemed appropriate in a professional education course for technical instructors.

Haberman (9, p. 4) made use of a two-by-two grid for ordering the evaluation process. On the vertical axis, a yes or no response was possible under the heading, "Necessary for Teaching Effectiveness." On the horizontal axis, a yes or no response was possible under the heading, "Included in Pre-service Education Program." The results could thus lead to one of four possible conclusions for each element studied. These were:

1. Items are necessary for teaching and were included in the program of preparation.

2. Items are not necessary for teaching and were included in the program of preparation.

3. Items are necessary for teaching, but were not in the program of preparation.

4. Items are not necessary for teaching and were not in the program of preparation.

The process was used in this case for a type of task analysis of classroom teachers, but it could easily be modified for other

evaluation purposes as well. The value of this process lies primarily in its simplicity.

Alternate methods having equal validity have been used in other follow-up surveys. It should be remembered that the specific methodology selected should be a direct function of the stated purpose or purposes of the study. A sampling of questionnaires, utilized for follow-up survey purposes by selected Junior Colleges in the state of California, has been compiled by O'Connor (13, pp. 54-74).

Summary

In this review of the literature the need for a continuing, periodic, graduate follow-up study has been established.

The follow-up study at hand is concerned specifically with the graduates of the Technical Education program at Oklahoma State University from 1960 to 1975. These graduates often receive employment as technical instructors in colleges, universities, junior/community colleges, or technical institutes. An overview of the educational and job experience qualifications needed by the individual to function effectively as technical instructors has been examined.

Previous follow-up research studies of the graduates of the Technical Education program at Oklahoma State University have been conducted by Ballard (6) in 1968 and by Rutelonis (7) in 1972. Their studies dealt primarily with salary analyses and career patterns, although Rutelonis did perform a limited study dealing with program improvement.

Previous research methodology is not limited to any single form. It was found that the instruments used varied from study to study,

dependent upon the purpose or purposes of a given study. Not only did instruments vary, but statistical analyses and rating scales also varied considerably from one study to another. Methodology should be individually devised to suit the specific needs of the given study. A carbon copy of the methodology used in one study will probably be inadequate for use in another study.

CHAPTER III

METHODOLOGY

This study involved the graduates of the Technical Education program, from the first ones in 1960 through the summer of 1975, at Oklahoma State University who have received either a Bachelor of Science degree, a Master of Science degree, or both of these degrees in Technical Education. The survey included all graduates who were U. S. citizens except two who were known to be deceased. The survey size was thus 327 out of a population of size 414, or 79 percent of the total graduates.

Classification of Respondents

The respondents in this study were preclassified according to one of two groups; those who graduated within the last five years and those who graduated more than five years ago. Since changes have occurred in many phases of the Technical Education programs within the last few years, it was decided that those individuals who graduated most recently would contribute more meaningful feedback in certain areas of the study.

Development of the Instrument

The instruments developed for this study were structured to best seek solutions to the problem, and attainment of the purpose previously

stated. Two questionnaires were developed to correspond to the two classifications of respondents. The instruments were approved by a committee of three graduates of the technical education programs. Sample copies of these instruments may be found in Appendix B and Appendix C.

Follow-up studies, for evaluation purposes, have a three dimensional aspect (14, pp. 2-4). These dimensions include:

1. Who or what is evaluated
2. How the evaluation is done
3. Who uses the findings

These three dimensions have been the criteria applied to the structure of the instrument, where evaluation data has been sought.

Success may be measured in many different ways. If graduate salary levels alone are used as a measure of success, it must be assumed the better the program is, the higher the salary levels will be. Salary levels alone, however, may not necessarily be true indicators of success. Many graduates prefer such things as job security, job satisfaction, or geographic location, to higher salaries, when a choice is to be made. For this reason, other considerations must be included. A more direct route to evaluation of the program could be made by asking the graduate outright if the program prepared him for his occupational endeavors, assuming these endeavors are within the scope of the program objectives. Another avenue could be an examination of the perceived essentiality of courses within the curriculum.

In relation to the above discussion, this study was designed to collect the following evaluation data:

1. Salary data

2. Data inquiring graduates perceptions of whether or not the course of study adequately prepared them for their first full-time employment upon graduating

3. Data inquiring perceived essentiality of courses within the curriculum

4. Open-ended responses

Appendix A lists the professional education courses considered, as well as a brief description of each course, as given in the Oklahoma State University Catalog (15).

Curriculum evaluation data was solicited only from those individuals graduating within the last five years, with the guidelines for evaluation being taken from the statement of purpose as it appears in the Oklahoma State University Catalog 1974-75 (15, p. 147):

> The Department of Technical Education is organized to provide professional and technical preparation for instructors of post-high school technical programs offered in technical institutes, community junior colleges, colleges and area vocational schools. Graduates from this department also accept technical employment of various types in business and industry.

Program improvement data was sought in several ways. An extension of the method used by Rutelonis (6) was used, where graduates were asked to indicate what additional courses added to the curriculum would have been beneficial. The results of this question compared with the results of the questions on evaluation are used to give meaningful improvement data.

Data pertinent to career patterns was obtained by studying occupational and educational facts. Additional information was sought to determine what factors influenced individuals to change from an industrial occupation to the field of teaching in higher education. The

1971-75 graduates were asked to indicate their first full-time employment. This latter data had been previously documented by Ballard (6) and Rutelonis (7) on the graduates prior to 1972.

Data of interest for placement and employment information might also have limited application for recruitment purposes. For instance, starting salary information would be of interest to the prospective recruit as well as the graduate candidate.

Question format was composed of both open-ended and close-ended varieties; and selected responses, such as personal data, were handwritten into the questionnaire before being sent to the graduate. It was felt that this approach would add a personal appeal and would require less time on the part of the graduate in completing the form, thus enhancing the probability of a higher percentage of returns. In relation to this, McKinney and Oglesby (16, p. 13) suggest:

> Serious questions should be raised when asking questions about demographic data. Usually information relating to the former student's age, sex and address is in the school files. It needlessly increases the length of the questionnaire thereby increasing the length of time needed to complete it if you ask for information you already have.

Collection of the Data

The instruments developed were mailed to the graduates. Included with the instrument was a letter of transmittal, as included in Appendix D, and a stamped, self-addressed envelope to encourage return. An additional incentive to encourage instrument return was established in the letter of transmittal by a promise to send all respondents a "Directory of Technical Education Graduates."

A follow-up letter was developed and mailed with an additional

questionnaire and envelope to those graduates who had not responded to the original questionnaire within five weeks. A second and final follow-up letter was developed and mailed with an additional questionnaire and a self-addressed return envelope within four weeks of the previous mail-out. Copies of the first and second follow-up letters can be found in Appendix E and Appendix F respectively.

Names, addresses, and other pertinent data on the graduates were obtained from several different sources. These included:

1. The Technical Education Department files
2. The Oklahoma State University Alumni Association files
3. Data collected from previous studies by Ballard (6) and Rutelonis (7)
4. Previous private correspondence to the Technical Education Department
5. Telephone calls
6. Telephone directories
7. Other directories

Analysis of the Data

After the completed questionnaires were received, the data were tabulated and analyzed.

Salary information was grouped according to education or industry employment modes and then analyzed for means and medians. The results were compared to each other and to the results obtained from Ballard's (6) and Rutelonis' (7) studies.

Multi-item questions were listed according to frequency and percentage of the various responses. Conclusions were then drawn from the

results.

An examination was made of the relationships between salary levels and occupational endeavors, as well as the relationships of occupational endeavors to viewed curriculum essentiality. These results are useful for program evaluation and improvement activities.

Pilot Testing the Instrument

A pilot test of the instrument was conducted as suggested by Tuckman (10, pp. 196, 199-200). The pilot test group included selected graduate students. The object of the pilot testing was to determine whether questionnaire items possessed the desired qualities of measurement and discriminability, as well as those of simplicity and clarity of meaning. The feedback from this test was used to construct the refined questionnaire.

Assumptions

The nature of this study necessitated the inclusion of some basic assumptions. These were as listed:

1. Responses were honest and reflected the true facts and feelings of the individuals.

2. A "limited" number of extreme, bizarre, or irrational notions exist, thus having little overall effect on the results of the study.

3. No two persons teach the same course in an identical manner; therefore, it was assumed that variances in instructional techniques, personalities, and subject matter content among those courses having the same designation had a negligible effect on the rating of curriculum essentiality between graduates.

CHAPTER IV

RESULTS

The purpose of this study was to collect and analyze follow-up data on graduates of the Technical Education B.S. and M.S. degree programs of Oklahoma State University. These graduates were pre-classified into one of two groups: those graduating from the spring of 1960 through the summer of 1970 (n = 185) and those graduating from the spring of 1971 through the summer of 1975 (n = 142). A follow-up survey instrument was generated for each of the two group classifications and then mailed in December, 1975. There were a total of 414 persons who had received either a B.S. degree, an M.S. degree, or both of these degrees in Technical Education during these two time spans, but the survey was limited to include only those graduates who were U. S. citizens, giving a survey size of 327 or 79 percent of the total. From the survey size of 327 there were a total of 239 respondents included in the analysis for a return rate of 73.1 percent. These 239 respondents were represented by 140 from the 1960-70 group and 99 from the 1971-75 group. An additional 8 responses were received after the data were analyzed, giving a total response of 247, or 75.1 percent of the sample size.

Five weeks after the first mail-out was initiated a second appeal was made to those graduates who had not responded. At this time 183, or 56 percent of the total, responses had been collected. In another

four weeks the final attempt was made to collect data. At this time there had been 219 respondents, representing 67 percent of the sample. Analysis of the data was started two weeks after this final mail-out.

Analysis of Data

The analysis of the data are herein arranged and presented under four subheadings: General Data, Salary Data, Occupational Data, and Coursework Data.

General Data

The respondents' employment status was analyzed and placed in one of a group of either education-related employment, industry-related employment, or unemployed. Geographic classifications have been designated simply as in-state or out-of-state.

The data in Table I shows that approximately three out of every five Technical Education graduates chose employment in industry over employment in education. Four of the respondents were unemployed.

When the graduates were grouped according to geographic modes, the results show that 45.3 percent of the graduates living in-state are employed in education, or 58 out of 128 in-state graduates; whereas 31.8 percent of the graduates living out-of-state are employed in education-related fields. Overall, 128 out of 238 of the graduates have chosen to live and work in Oklahoma. This represents 53.8 percent of the total 238 respondents. These results are shown in Table II.

The data listed in Table III show the formal educational achievements of the graduates after leaving the Technical Education program. Of the 93 respondents in education-related jobs, 27, or 29 percent,

TABLE I

GRADUATE EMPLOYMENT MODES

Employment Mode	Number Responding	Percent
Overall	238	100
Education	93	39.1
Industry	141	59.2
Unemployed	4	1.7

TABLE II

GRADUATE GEOGRAPHIC MODES

Geographic Mode	Tec-Ed B.S. Degree		Tec-Ed M.S. Degree		Tec-Ed M.S. Degree Holding B.S. Degree in Tec-Ed		Tec-Ed M.S. Degree Holding a B.S. Degree in Tec-Ed	
	Education	Industry	Education	Industry	Education	Industry	Education	Industry
In-State (n = 128)	28 (21.9%)	61 (47.7%)	30 (23.4%)	5 (3.9%)	19 (14.8%)	3 (2.3%)	11 (8.6%)	2 (1.6%)
Out-of-State (n = 110)	15 (13.6%)	65 (59.1%)	20 (18.2%)	10 (9.1%)	13 (11.8%)	6 (5.5%)	7 (6.4%)	4 (3.6%)

TABLE III

GRADUATES RECEIVING A HIGHER DEGREE BEYOND THEIR LAST TECHNICAL EDUCATION DEGREE

Degree Received	Employment Mode	
	Education (n = 93)	Industry (n = 141)
Masters	15	9
Specialist	1	0
Doctorate	11	3
Total	27	12

have pursued and achieved a higher degree. In the industry-related mode, 12, or 8.5 percent, of the 141 respondents have obtained a higher degree.

Salary Data

Salary data were collected on 232 of the 239 returns. From this number, 169 were B.S. degree respondents and 63 were M.S. degree respondents, representing 72.8 percent and 27.2 percent of the total salary data responses respectively. Three of the B.S. degree respondents indicated that they were unemployed, whereas, one of the M.S. degree respondents was unemployed. The remaining three returns were non-respondents.

The data listed in Table IV shows the average B.S. degree graduates' salary to be $1,199.00 per month and the average M.S. degree graduates' salary to be $1,293.00 per month. However, the actual average salaries are greater than those listed because of the large number of graduates who responded to the "over $1,400.00 per month" category.

Monthly salary levels grouped by in-state or out-of-state with subgroupings of education or industry are listed in Table V. With the salary data classified in this manner it can be seen that out-of-state graduates are the most prosperous at $1,317.00 per month average salary, whereas, those graduates living in Oklahoma and working in industry are the least prosperous, with an average monthly salary level of $1,127.00.

A comprehensive breakdown of monthly salaries by degree and date of graduation are presented in Table VI. These data show that 47

TABLE IV

MONTHLY SALARY LEVELS BY B.S. OR M.S. DEGREE

Degree	Number Responding	Mean Salary	Median Salary Range	Mode Salary Range
B.S.	169	$1199	$1100-$1199	Over $1400 (n = 53)
M.S.	63	$1293	$1200-$1299	Over $1400 (n = 31)

Overall Mean Salary = $1225/month

TABLE V

MONTHLY SALARY LEVELS BY GEOGRAPHIC MODES

Geographic Mode	Average Monthly Salary Level		
	Education	Industry	Overall
In-State	$1187 (n = 57)	$1127 (n = 65)	$1155 (n = 122)
Out-of-State	$1270 (n = 35)	$1317 (n = 75)	$1302 (n = 110)

TABLE VI

FREQUENCY OF PRESENT MONTHLY SALARIES BY DEGREE AND DATE OF GRADUATION

Monthly Salary	Tec-Ed B.S. Degree		Tec-Ed M.S. Degree		Tec-Ed M.S. Degree Holding B.S. in Tec-Ed		Tec-Ed M.S. Degree Holding B.S. Other Than in Tec-Ed		Tec-Ed M.S. Degree Holding Higher Degree	
	1960-70	1971-75	1960-70	1971-75	1960-70	1971-75	1960-70	1971-75	1960-70	1971-75
Less Than $600	1	4	1	1	-	1	1	-	-	-
$600-699	1	3	-	-	-	-	-	-	-	-
$700-799	1	5	-	-	-	-	-	-	-	-
$800-899	1	10	1	-	-	-	1	-	-	-
$900-999	1	9	1	1	1	-	-	1	-	-
$1000-1099	10	5	1	4	1	3	-	1	-	-
$1100-1199	11	13	3	6	2	5	1	1	-	-
$1200-1299	14	9	2	3	1	2	-	-	1	1
$1300-1399	15	4	2	6	1	3	1	2	-	1
Over $1400	47	3	24	10	9	5	3	4	12	1

graduates, whose only Technical Education degree is a B.S. degree attained from 1960-70, are making over $1400 per month. This represents the largest single classification from this table. Of the 24 graduates holding a Technical Education M.S. degree and making over $1400 per month, it can be seen that nine of these hold a B.S. degree in Technical Education as well; whereas, three of the graduates holding the Technical Education M.S. degree as their highest degree also hold a B.S. degree in a discipline other than Technical Education; and 12 hold a higher degree beyond the Technical Education M.S. degree.

The average monthly starting salaries of the 1971-75 graduates are listed in Table VII. The validity of these data must be weighed against the number of graduates responding in each classification. For example, the average monthly starting salary of the M.S. degree recipient in 1975 is shown to be $1,000.00, with only one person responding. The data in Table VIII, giving a breakdown by year of B.S. and M.S. degrees conferred, shows that there were 18 M.S. degree recipients in 1975.

Occupational Data

The data presented in Table IX give an overall perspective of graduates' inter-job mobility. These data show that 53.5 percent of the graduates working in industry compared to 57.6 percent of the graduates employed in education have changed employment since their first full-time employment following graduation. Change in employment as used here implies a change of employer but not necessarily a change of job titles. A listing of job titles given by graduates responding to the survey is presented in Appendix G.

TABLE VII

STARTING SALARIES OF 1971-75 GRADUATES

Year	Average Monthly Starting Salary Level			
	B.S.	M.S.	Education	Industry
1971	$651 (n = 10)	$1042 (n = 2)	$730 (n = 7)	$698 (n = 5)
1972	$739 (n = 18)	$867 (n = 4)	$807 (n = 11)	$718 (n = 11)
1973	$732 (n = 10)	$977 (n = 4)	$969 (n = 3)	$756 (n = 11)
1974	$732 (n = 13)	$1006 (n = 3)	$888 (n = 6)	$721 (n = 10)
1975	$803 (n = 9	$1000 (n = 1)	$874 (n = 2)	$809 (n = 8)

TABLE VIII

TECHNICAL EDUCATION GRADUATES 1971-75

Degree	1971	1972	1973	1974	1975
B.S.	20	31	30	23	21
M.S.	12	13	9	35	18

TABLE IX

INTER-JOB MOBILITY OF GRADUATES

Changed Employment	Employment Mode	
	Education (n = 85)	Industry (n = 127)
No	42.4% (n = 36)	46.5% (n = 59)
Yes	57.6% (n = 49)	53.5% (n = 68)

Graduates teaching in industry have been grouped in Table X as teaching part-time or teaching full-time along with the principal employment mode of that graduate. It can be seen that five graduates who are principally employed in education are teaching part-time in industry. There are eleven graduates employed principally in industry who teach at least part-time, and five persons listed teaching in industry as their major duty.

The data shown in Table XI give a breakdown of those graduates teaching in education. These data show that 75 out of 93, or 80.6 percent, of the graduates employed in education list teaching as their major duty. Six persons employed primarily in industry are teaching at least part-time in education.

Of the 75 graduates teaching full-time in education, 51 of these, or 68 percent, indicated that this was their original intention upon graduating. Twenty, or 26.7 percent of these 75 indicated that this was not their original intention upon graduating. The reasons stated as to why these twenty persons changed their minds are listed below from the highest to lowest frequencies:

1. I enjoy working with people and felt that teaching would give me this opportunity. (n = 5)

2. I was not advancing within my job. (n = 4)

3. I wanted to teach but felt I needed industrial experience first. (n = 4)

4. I had worked in industry, but I wasn't satisfied. (n = 3)

5. I wanted a higher degree so I quit my job in industry to teach and take part-time college courses. (n = 3)

6. I was satisfied with my industry job, but I wanted a

TABLE X

GRADUATES TEACHING IN INDUSTRY

Teaching	Principal Employment Mode	
	Education (n = 93)	Industry (n = 141)
Part-Time	5 (5.4%)	11 (7.8%)
Full-Time	-	5 (3.5%)

TABLE XI

GRADUATES TEACHING IN EDUCATION

Teaching	Principal Employment Mode	
	Education (n = 93)	Industry (n = 141)
Part-Time	8 (8.6%)	6 (4.3%)
Full-Time	75 (80.6%)	-

change. (n = 2)

7. I didn't feel like an individual in industry. (n = 1)

In addition to these responses, there were three reasons written in as follows:

1. I didn't like metropolitan life
2. Less hours, more money to teach
3. Couldn't afford to teach until I had other income

Coursework Data

The graduates were asked to respond to whether or not they felt their course of study at Oklahoma State University adequately prepared them for their first full-time employment upon graduation. A comparison of the responses to this question according to the principal mode of employment of the graduates is listed in Table XII.

TABLE XII

GRADUATES' PERCEPTIONS OF WHETHER OR NOT THE COURSE-OF-STUDY ADEQUATELY PREPARED THEM FOR THEIR FIRST FULL-TIME EMPLOYMENT UPON GRADUATING

Prepared for Employment	Employment Mode		
	Education (n = 82)	Industry (n = 132)	Unemployed (n = 4)
Yes	73 (89%)	112 (84.8%)	4 (100%)
No	9 (11%)	20 (15.2%)	0

The rating of specific courses by 1971-75 graduates is listed in Table XIII. The overall rating shows that industry-employed graduates rated the courses more essential than did the education-employed graduates, at 83.8 percent and 81.6 percent respectively. The education-employed graduates gave a more essential rating (94.6 percent) to TECED 3103, whereas, the industry-employed graduates rated OAED 4103 (94.7 percent) as being the most essential course. Both education- and industry-employed graduates gave the lowest rating to TECED 5113, at 33.3 percent and 55.6 percent respectively.

Graduates were asked what additional course or courses would have been beneficial to them. The responses to this inquiry are presented in Table XIV. These data show that 63 (50 percent) of the 126 graduates working in industry and holding a B.S. degree only in Technical Education felt that more coursework in Business was needed. Of the graduates holding the B.S. degree only in Technical Education and employed in education-related jobs, it can be seen that 16 (37.2 percent) of the 43 graduates in this classification felt that more coursework in Educational Administration was needed. The responses written in under "Other" were scattered over a wide range, however, some of the more frequently listed ones included: Management and Supervision (n = 6), Psychology (n = 4), Human Relations (n = 3), Career Guidance (n = 3), and Education courses (n = 3).

When asked what courses should be deleted from the curriculum, there was little agreement among graduates as to which courses to delete. Those courses listed with greatest frequency included: Humanities (n = 7), Social Sciences (n = 2), Advanced Calculus (n = 2), and Instructional Aids (n = 2).

TABLE XIII

RATING OF COURSES BY 1971-75 GRADUATES

Course	Education Employed		Industry Employed	
	Essential	Nonessential	Essential	Nonessential
TECED 3103 (n = 80)	35 (94.6%)	2	36 (83.7%)	7
TECED 4112 (n = 76)	28 (80%)	7	32 (78%)	9
TECED 4223 (n = 78)	33 (89.2%)	4	38 (92.7%)	3
OAED 3012 (n = 69)	22 (71%)	9	33 (86.8%)	5
OAED 4103 (n = 66)	25 (86.2%)	4	35 (94.7%)	2
TECED 5113 (n = 36)	6 (33.3%)	12	10 (55.6%)	8
TECED 5223 (n = 53)	26 (92.9%)	2	21 (84%)	4
TECED 5233 (n = 42)	16 (84.2%)	3	18 (78.3%)	5
Overall	191 (81.6%)	43	223 (83.8%)	43

Percentages listed in parentheses represent the percent of respondents in each employment mode who have rated a given course as being essential.

TABLE XIV

GRADUATES' PERCEPTIONS OF ADDITIONAL COURSEWORK NEEDED

Coursework Needed	Tec-Ed B.S. Degree		Tec-Ed M.S. Degree		Tec-Ed M.S. Degree Holding B.S. Degree in Tec-Ed		Tec-Ed M.S. Degree Holding a B.S. Degree Other Than Tec-Ed	
	Education (n = 43)	Industry (n = 126)	Education (n = 50)	Industry (n = 15)	Education (n = 32)	Industry (n = 9)	Education (n = 18)	Industry (n = 6)
Business	5 (11.6%)	63 (50%)	8 (16%)	5 (33.3%)	5 (15.6%)	3 (33.3%)	3 (16.7%)	2 (33.3%)
Computer Science	12 (27.9%)	37 (29.4%)	9 (18%)	4 (26.7%)	6 (18.8%)	3 (33.3%)	3 (16.7%)	1 (16.7%)
Technical Specialty	15 (34.9%)	22 (17.5%)	10 (20%)	5 (33.3%)	6 (18.8%)	4 (44.4%)	4 (22.2%)	1 (16.7%)
Engineering	12 (27.9%)	31 (24.6%)	9 (18%)	4 (26.7%)	5 (15.6%)	3 (33.3%)	4 (22.2%)	1 (16.7%)
Educational Administration	16 (37.2%)	7 (5.6%)	11 (22%)	4 (26.7%)	7 (21.9%)	2 (22.2%)	4 (22.2%)	2 (33.3%)
Technical Report Writing	7 (16.3%)	23 (18.3%)	7 (14%)	4 (26.7%)	4 (12.5%)	3 (33.3%)	3 (16.7%)	1 (16.7%)
How to Succeed in Industry	2 (4.7%)	22 (17.5%)	2 (4%)	3 (20%)	2 (6.3%)	3 (33.3%)	-	-
Statistics	4 (9.3%)	18 (14.3%)	4 (8%)	2 (13.3%)	3 (9.4%)	1 (11.1%)	1 (5.6%)	1 (16.7%)
Mathematics	4 (9.3%)	5 (4.0%)	4 (8%)	-	2 (6.3%)	-	2 (11.1%)	-
Social Science	-	2 (1.6%)	1 (2%)	2 (13.3%)	1 (3.1%)	1 (11.1%)	-	1 (16.7%)

There was widespread response among graduates as to what activities they felt would have stimulated their interest in Technical Education when they were students. Those activities listed the most frequently were:

1. Field trips to technical schools, junior colleges, and industry (n = 9)
2. Direct involvement in actual training activities (n = 4)
3. Seminars by technical teachers, by past graduates, about jobs and interviewing and in education (n = 4)
4. On-the-job training (n = 3)
5. More interaction with instructors (n = 2)
6. Student clubs and social activities (n = 2)

The remainder of the activities that were listed occurred only one time each.

Comments

No attempt was made in this study to correlate the various comments given to any other aspect of the study. Listed below are some of the comments given by the graduates. Contrasting viewpoints have been presented where applicable. To give perspective to this listing, the year of graduation of the individual who made the comment is given in parentheses following the comment.

> I feel that my Tech. Ed. degree was extremely good preparation for my present employment. The flexibility in the program is the key, but it takes a wise choice of courses to make the best use of that flexibility. (1973)

> The different programs should be set up by the instructors so that the students do not pick and choose what would be good for them to enroll in. The student may not know what kind of courses to select or which ones would give

him the best results. (1975)

I have found that although I have never held a teaching position, my Technical Education degree has provided me with a well-rounded education that has been very beneficial to me in my job in industry. I believe that one of the strongest points is the latitude given students to choose those courses which appeal to them most when selecting electives. (1971)

I feel that the Tech. Ed. courses did not prepare me for employment in industry. (1973)

Although I have not worked in the field of Tech. Ed. within the civilian community, I feel the program has assisted me in my present career. (1972)

I feel that people entering the Technical Education Department need much better counseling than what was available to me. (1972)

I am most appreciative of my experiences in the Tech. Ed. program. The <u>real</u> interest of the Tech. Ed. faculty is a great asset to your program. This is an excellent department and is staffed with very professional men. (1972)

Most of the TECED and OAED courses are not designed to improve the skills that the classroom teacher needs. These curriculums include too many seminars that are filled with empty hours of redundant words about educational philosophy. (1975)

I have found that my B.S. in Tech. Ed. was most adequate for most beginning teacher assignments and I still fully subscribe to theories of the Tech. Ed. Department on training technicians. (1971)

I believe we all need to take a look at what we are doing to see if it is really relevant to the technician and the technical instructor. Maybe some working advisory meetings with new, medium, and old instructors would be in order to see if we are meeting needs. (1966)

I seriously believe that I am a much better teacher-administrator because of acquiring the M.S. in Tech. Ed. at O.S.U. (1971)

Present to the degree candidates an outline of what to expect on the oral defense of their thesis. This would eliminate some of the "rumors" and "horror stories" circulated among graduate students. (1975)

I rated the analysis courses non-essential because I feel they are not flexible enough to stay current with modern industry. I also feel that the Technical Education program could be helped by enabling students to complete their Master's program without the requirement of a thesis. (1972)

I enjoyed teaching but advanced from the classroom to full-time administration and then lost some of my interest. (1966)

I am self-employed at this time because I tired of the political aspects of teaching. Maybe you should add practical politics of holding jobs to your courses. (1965)

I feel that college did not prepare me for the real world--I was snowed into thinking that starting out there would be high pay, many jobs, and not starting at the bottom. (1973)

This list of comments is not exhaustive, but does represent a fairly general cross section of the responses given.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to collect and analyze follow-up data on graduates of the Technical Education B.S. and M.S. degree programs of Oklahoma State University. Two questionnaire types were developed and disseminated to the graduates of the programs. One type was mailed to persons graduating during the period from 1960-1970. The other type was mailed to persons graduating from 1971 through the summer of 1975. Only those students who were U.S. citizens were surveyed. The overall response was 239 out of a total of 327 for a return rate of 73.1 percent.

Previous follow-up studies on graduates of the Technical Education B.S. and M.S. degree programs of Oklahoma State University were conducted by Ballard (6) in 1969 and by Rutelonis (7) in 1972.

Conclusions and Recommendations

Presented below is a listing of the findings from Chapter IV and the subsequent conclusions drawn and recommendations made relating to these results.

Employment Modes

When graduates were grouped under the two broad classifications of education and industry, it was seen that 39.1 percent were in

education-related fields and 59.2 percent work in industry. The remaining 1.7 percent of the graduates were unemployed. Ballard's study in 1969 showed 51.3 percent of the graduates were employed in education and 48.7 percent were employed in industry. Whereas, the study conducted by Rutelonis in 1972 showed 34.9 percent of the graduates were employed in education and 65.1 percent were employed in industry. These latest data show the employment trend to be shifting back toward education-related employment.

Additional data relating to graduate employment modes should be collected in the future. The identification of specific factors which influence graduate employment choices would be beneficial for counseling and placement purposes.

Geographic Modes

The number of graduates who choose to live outside of Oklahoma (n = 110) almost equals the number who choose to live in-state (n = 128). The largest single classification of graduates by academic degree, employment, and geographic modes are those individuals who hold a B.S. degree, work in industry, and live outside of Oklahoma (n = 65). This condition is most likely explained by the higher salaries drawn by out-of-state graduates working in industry. However, further research is needed to identify additional factors influencing graduate out-migration patterns.

Advanced Degrees Attained

Graduates working in education-related fields are found to be more active at seeking advanced degrees. Twenty-nine percent (n = 27) of

the graduates in education compared to 8.5 percent (n = 12) of the graduates employed in industry have obtained higher degrees beyond their last Technical Education degree. This fact is probably due to the pressures applied by institutions of higher education upon its employees to obtain higher degrees.

Further analysis of the factors influencing graduates to pursue higher degrees would be beneficial in identifying the needs of the individuals seeking such degrees. As these needs are identified, graduate program objectives could be reshaped accordingly.

Salary Data

Salary levels of graduates residing in Oklahoma are on the average approximately $150.00 per month less than those graduates living outside of Oklahoma. Graduates living in Oklahoma and working in education receive higher salaries than those graduates living in Oklahoma and working in industry. Of the graduates living outside of Oklahoma, it was found that average salaries ran slightly more for those graduates employed in industry, than those graduates working in education-related jobs. Overall average salaries in 1968 (6) were found to be $736.00 per month and in 1972 (7) to be $878.00 per month. This represents a 19.3 percent increase over the four-year span. The average salaries as of 1975 were found to be over $1,225.00 per month, representing another 39.5 percent increase over the next three years. A comparison of monthly average salaries of years 1968, 1972, and 1975 are given in Table XV.

Some discrepancy exists in the salary data due to the fact that a rather large number of graduates indicated that they were making over

TABLE XV

COMPARISON OF SALARIES, 1968, 1972, 1975

Year	In-State		Out-of-State	
	Education	Industry	Education	Industry
1968	$714	$677	$1010	$784
1972	$947	$830	$1157	$1057
1975	$1187	$1127	$1270	$1317

$1400.00 per month. To eliminate this error, it is recommended that future follow-up questionnaires allow for an open-ended salary range response.

Inter-Job Mobility

It was found that over half of the graduates in both education and in industry have changed employment since their first full-time job following graduation. The education-employed graduates had a higher percentage of change than did the industry-employed graduates. This could be due to the fact that many persons initially enter industry-related jobs for the purpose of gaining practical experience prior to accepting employment in education.

Teaching Positions Held

An analysis was made of the graduates employed in teaching positions. Of the graduates teaching in industry, five listed this as their full-time duty and 16 indicated that they taught in industry at least part-time. Graduates teaching in education consisted of 75 full-time instructors, or 80.6 percent of the total respondents employed in education-related positions. Fourteen graduates indicated they were teaching part-time in education. These data show that by far the largest number of graduates who hold teaching positions are employed in education.

It is recommended that comparative task analyses be conducted between the graduates teaching in education and those graduates teaching in industry. Both the common and unique aspects of pedagogical technique should be noted, with the implication being directed toward

curriculum improvement and revision.

Employment Preparedness and Curriculum Ratings

Graduates were asked whether or not the course of study at Oklahoma State University adequately prepared them for their first full-time employment. An analysis of the responses to this question showed that 89 percent of the education-employed graduates gave an affirmative response compared to an 84.8 percent affirmative response of those graduates employed in industry. A condition opposite to these results was noted in the responses given to the rating of essentiality or non-essentiality of specific courses of the Technical Education curriculum. These courses were rated by 83.8 percent of the industry-employed graduates as being essential. Of the education-employed graduates, 81.6 percent rated the courses as being essential.

Perceptions of Additional Coursework Needed

Graduates were asked what additional course or courses would have been beneficial to them. Industry-employed graduates listed Business and Computer Science courses, respectively, as the areas where more coursework emphasis was needed. The graduates employed in education felt that more coursework in Educational Administration and Technical Specialty courses, respectively, was needed. These data should be used to aid in student counseling when students select elective courses.

Other Recommendations

On the basis of the data compiled and the mechanics involved in conducting this study, the following suggestions are given:

1. The Technical Education Department objectives should be well defined, published, and made known to all students and prospective students. Revisions should be added as they occur.

2. The patterns utilized in this study should serve as guidelines in conducting future follow-up surveys based on the large percentage of returns and the overall responses given.

3. A data bank of graduates' names and addresses should be maintained in the Technical Education Department and an effort should be made to periodically update this file.

4. Diplomas of persons graduating from the Technical Education programs should be distributed from the Technical Education offices instead of the administrative offices of the university. When the student reports to the department to pick up the diploma, or the diploma is mailed, a card listing that graduate's name and address could be placed in the data bank.

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APPENDIX A

COURSE DESCRIPTIONS

TECED 3103 INTRODUCTION TO TECHNICAL EDUCATION. The historical development and the philosophy of technical education.

TECED 4112 INSTRUCTIONAL AIDS. Construction and use of teaching aids such as visuals, mock-ups and models.

TECED 4223 TECHNICAL EDUCATION PROGRAM PLANNING. Prerequisite: 3103. Program and curriculum development in technical institutes, junior colleges and area vocational-technical schools.

OAED 3102 ANALYSIS TECHNIQUES IN INDUSTRIAL EDUCATION. Analysis techniques used in determining instructional content from industrial areas.

OAED 4103 METHODS OF TEACHING INDUSTRIAL EDUCATION. Basic principles of teaching and learning with practical applications and procedures used in industrial education programs.

TECED 5113 COMPARATIVE TECHNICAL EDUCATION. Ideas, practices and systems of technical education in other countries.

TECED 5223 CURRICULUM DEVELOPMENT IN TECHNICAL EDUCATION. A detailed study of curriculum design including the interrelationship of mathematics, science and technical courses in technical curriculums.

TECED 5233 OCCUPATIONAL ANALYSIS. Prerequisite: graduate standing. Techniques for determining educational requirements of technical occupations; special attention is given to emerging fields of technology.

APPENDIX B

THE INSTRUMENT FOR GRADUATES 1960-70

GRADUATE INFORMATION SHEETS
TECHNICAL EDUCATION DEPARTMENT
OKLAHOMA STATE UNIVERSITY

1. _____

2. Present home mailing address_____
(Please make corrections) Street, Rural Route, or Box No.

_____
City State Zip Code Area Code Telephone No.

3. Name and address of someone who
will always know where to reach you_____
Name

_____
Street, Rural Route, or Box No. City State Zip Code

_____
Area Code Telephone No.

4. Present job title_____

5. Name of employer
(Company, Firm, School, etc.)_____

Address_____

6. Immediate supervisor_____
Name Job Title

7. What is your present salary? (Check one):

_____ less than $600 per month
_____ between $600 and $699 per month
_____ between $700 and $799 per month
_____ between $800 and $899 per month
_____ between $900 and $999 per month
_____ between $1000 and $1099 per month
_____ between $1100 and $1199 per month
_____ between $1200 and $1299 per month
_____ between $1300 and $1399 per month
_____ over $1400 per month

8. Educational background (respond to those that apply)

	Date	Major	Institution
a) Associate degree	_____	_____	_____
b) B. S. degree	_____	_____	_____
c) M. S. degree	_____	_____	_____
d) Ed. D. degree	_____	_____	_____
e) Other degree/s	_____	_____	_____
	_____	_____	_____

9. Would you like to receive current information about a higher degree program at O. S. U.? (Check appropriate program/s)

_____ M. S. in Technical Education
_____ Ed. S. in Education
_____ Ed. D. in Vocational-Technical and Career Education
_____ Ed. D. in Higher Education

10. If we should hear of a job or position in a school or industry, for which you may qualify, would you like to be contacted about that vacancy? If so, initial_____

11. Do you feel that your course of study at O. S. U. adequately prepared you for your first full time employment upon graduation? ___no ___yes

12. What additional courses do you feel would have benefited you? (check one or more)

_____Business
_____Computer Programming
_____Mathematics
_____Social Science
_____Educational Administration
_____Technical Report Writing
_____How to Succeed in Industry
_____Technical Specialty Courses
_____Engineering
_____Statistics
_____None of the above
_____Other (name/s)_____
_____
_____

13. What course or courses do you feel should be deleted from the curriculum?

_____

14. Are you presently teaching in industry? ___no ___yes, part-time ___yes, full time

15. Are you presently teaching in a Technical Institute, Community/Junior College, College or University? ___no ___yes, part-time ___yes, full time

16. If your answer to Question 15 was "yes, full time", was this your original intention upon graduating? _____no _____yes

17. If your answer to Question 16 was "no", what caused you to change your mind? (Indicate one or more in order of importance: 1, 2, 3, etc.)

_____I had worked in industry, but I wasn't satisfied.

_____I was satisfied with my industry job, but I wanted a change.

_____I was not advancing within my job.

_____I didn't feel like an individual in industry.

_____I wanted a higher degree so I quit my job in industry to teach and take part-time college courses.

_____I enjoy working with people and felt that teaching would give me this opportunity.

_____I wanted to teach but felt I needed industrial experience first.

_____Other: (please specify)_____

18. The Technical Education Department is planning to make and distribute a "Directory of Technical Education Graduates". If you wish your name, area of specialization, job title, address and firm to appear in this directory, please initial. _____

19. Comments:

Note: If you have a personal resume, would you please enclose a copy with this completed questionnaire? This will help us maintain current files on our graduates.

APPENDIX C

THE INSTRUMENT FOR GRADUATES 1971-75

GRADUATE INFORMATION SHEETS
TECHNICAL EDUCATION DEPARTMENT
OKLAHOMA STATE UNIVERSITY

1. _____

2. Present home mailing address_____
(Please make corrections) Street, Rural Route, or Box No.

_____
City State Zip Code Area Code Telephone No.

3. Name and address of someone who will always know where to reach you_____
Name

_____
Street, Rural Route, or Box No. City State Zip Code

_____
Area Code Telephone No.

4. Present job title_____

5. Name of employer
(Company, Firm, School, etc.)_____

Address_____

6. Immediate supervisor_____
Name Job Title

7. What is your present salary? (Check one):

_____ less than $600 per month
_____ between $600 and $699 per month
_____ between $700 and $799 per month
_____ between $800 and $899 per month
_____ between $900 and $999 per month
_____ between $1000 and $1099 per month
_____ between $1100 and $1199 per month
_____ between $1200 and $1299 per month
_____ between $1300 and $1399 per month
_____ over $1400 per month

8. Educational background (respond to those that apply)

	Date	Major	Institution
a) Associate degree	_____	_____	_____
b) B. S. degree	_____	_____	_____
c) M. S. degree	_____	_____	_____
d) Ed. D. degree	_____	_____	_____
e) Other degree/s	_____	_____	_____
	_____	_____	_____

9. Would you like to receive current information about a higher degree program at O. S. U.? (Check appropriate program/s)

_____ M. S. in Technical Education
_____ Ed. S. in Education
_____ Ed. D. in Vocational-Technical and Career Education
_____ Ed. D. in Higher Education

10. If we should hear of a job or position in a school or industry, for which you may qualify, would you like to be contacted about that vacancy? If so, initial_____

11. What was your first full time employment upon graduation?

Name of Firm_____

Address_____Starting Salary_____

12. Do you feel that your course of study at O. S. U. adequately prepared you for your first full time employment upon graduation? _____no _____yes

13. What additional courses do you feel would have benefited you? (check one or more)

_____Business
_____Computer Programming
_____Mathematics
_____Social Science
_____Educational Administration
_____Technical Report Writing
_____How to Succeed in Industry
_____Technical Specialty Courses
_____Engineering
_____Statistics
_____None of the above
_____Other (name/s)_____
_____
_____

14. What course or courses do you feel should be deleted from the curriculum?

_____

15. On the basis of the experience you now have, please rate the following courses. (rate those courses you took)

				Essential	Non-Essential
a)	TECED	3103	Intro. to Tec. Ed.	_____	_____
b)	TECED	4112	Instructional Aids (AV)	_____	_____
c)	TECED	4223	Tec. Ed. Program Planning	_____	_____
d)	OAED	3012	Analysis Tech. in Ind. Ed.	_____	_____
e)	OAED	4103	Methods of Teaching Ind. Ed.	_____	_____
f)	TECED	5113	Comparative Tec. Ed.	_____	_____
g)	TECED	5223	Curriculum Deve. in Tec. Ed.	_____	_____
h)	TECED	5233	Occupational Analysis	_____	_____

16. What activities do you feel would have stimulated your interest in Technical Education when you were a student?

_____

17. Are you presently teaching in industry? ___no ___yes, part-time ___yes, full time

18. Are you presently teaching in a Technical Institute, Community/Junior College, College or University? ___no ___yes, part-time ___yes, full time

19. If your answer to Question 18 was "yes, full time", was this your original intention upon graduating? ___no ___yes

20. If your answer to Question 19 was "no" what caused you to change your mind? (Indicate one or more in order of importance: 1, 2, 3, etc.)

_____I had worked in industry, but I wasn't satisfied.

_____I was satisfied with my industry job, but I wanted a change.

_____I was not advancing within my job.

_____I didn't feel like an individual in industry.

_____I wanted a higher degree so I quit my job in industry to teach and take part-time college courses.

_____I enjoy working with people and felt that teaching would give me this opportunity.

_____I wanted to teach but felt I needed industrial experience first.

_____Other: (please specify_____

21. The Technical Education Department is planning to make and distribute a "Directory of Technical Education Graduates". If you wish your name, area of specialization, job title, address and firm to appear in this directory, please initial. _____

22. Comments:

Note: If you have a personal resume, would you please enclose a copy with this completed questionnaire? This will help us maintain current files on our graduates.

APPENDIX D

LETTER OF TRANSMITTAL

OKLAHOMA STATE UNIVERSITY • STILLWATER

Department of Technical Education 74074
Classroom Building 406
(405) 372-6211, Ext. 6287

December 5, 1975

GREETINGS FROM THE TECHNICAL EDUCATION DEPARTMENT

We are in the process of conducting a follow-up study of all Technical Education graduates. It is our belief that you can furnish meaningful feedback concerning your educational experiences at O.S.U. Your candid response is needed to evaluate and improve our department.

A follow-up study questionnaire is enclosed which has been partially completed using information on file in our office. Please correct any errors. A self-addressed, stamped envelope is enclosed for your convenience.

Graduates who complete and return the enclosed form by December 31, will be sent free of charge a Directory of Technical Education graduates.

We sincerely appreciate your help in completing the enclosed form which will lead us to provide better service to our majors and graduates.

We wish you and yours a Happy Holiday Season.

Yours truly,

Cecil W. Dugger
Associate Professor

CWD/kp
Enclosure

P.S. If we can be of further assistance to you please feel free to call upon us.

APPENDIX E

FIRST FOLLOW-UP LETTER

OKLAHOMA STATE UNIVERSITY · STILLWATER

Department of Technical Education 74074
Classroom Building 406
(405) 372-6211, Ext. 6287

January 13, 1976

Dear Graduate:

We need your help! A few weeks ago we mailed you a questionnaire which seeks information needed if we are to be of better service to you and at the same time provide a better program for students enrolled in Technical Education.

If your completed questionnaire is already in the mail we appreciate it. If you have misplaced it, or if it never reached you, please take a few minutes to fill out and return the enclosed copy.

We will send you free of charge the Directory of Technical Education Graduates and a Technical Education Newsletter when your questionnaire is returned and the data from the questionnaires are tabulated.

Sincerely,

Cecil W. Dugger
Associate Professor

CWD/kp
Enclosure

APPENDIX F

SECOND FOLLOW-UP LETTER

OKLAHOMA STATE UNIVERSITY • STILLWATER

Department of Technical Education
Classroom Building 406
(405) 372-6211, Ext. 6287

74074

February 10, 1976

DEAR GRADUATE

We sincerely need your help! Before we can complete a follow-up study of all Technical Education graduates we need to receive select information from you.

Too, we would like to publish and send to you a Technical Education Newsletter and a Directory of Technical Education Graduates. But we cannot do this unless we hear from you.

Please complete and return the enclosed questionnaire so we can send you a newsletter which will include a summary of the follow-up study and a directory which will contain your name and latest mailing address.

Yours truly,

Cecil W. Dugger
Associate Professor

CWD/kp
Enclosure

APPENDIX G

JOB TITLES OF GRADUATES

In those instances where a particular job title was given more than once, the frequency of occurrence has been listed in parentheses after that title.

Account Executive

Adjunct Instructor

Air Traffic Control Specialist

Applications Engineer

Area Systems Engineer

Associate Professor (n = 2)

Associate Professor and Assistant Chairman of Technology

Associate Professor General Engineering

Assistant Buyer

Assistant Campus General Manager

Assistant Dean Career Education and Community Service

Assistant Dean Vocational-Technical Division

Assistant Director Academic Affairs

Assistant High School Principal

Assistant Professor (n = 4)

Assistant Professor and Department Head

Assistant Professor Electronics Technology

Assistant Professor Industrial Drafting Technology

Assistant Professor Technical Education

Assistant Professor Vocational-Education, Computer Science

Assistant Superintendent

Assistant Supervisor

Biomedical Instrumentation Technician

Captain, Squadron Section Commander

Carpenter

Chairman, Department of Technology

Chairman, Electronics Technology Department

Chief Estimator

Chief Flight Management Branch

Chief of Plans, Programs and Engineering

Computer Analyst (n = 2)

Computer Implementation Analyst

Computer Programmer Operator

Computer Systems Designer

Coordination Specialist

Corporate Supervisor

Curriculum and Planning Specialist

Customer Engineer

Department Chairman, Electronics Engineering Technology

Department Head, Department of Technology

Design and Development Laboratory Technician

Design Draftsman

Designer Mechanical Systems

Detail Draftsman

Director, Adult and Continuing Education

Director, Career Education

Director, Computer Science Technology

Director, Sanitation and Loss Prevention

Directory Assembly Operator

District Owner Relations Manager

Division Chairman and Instructor

Draftsman (n = 3)

Draftsman and Office Manager

Electricity Instructor

Electronics Apparatus Fabricator

Electronics Engineer

Engineer

Engineer, Research Project

Engineering Aide Associate

Engineering Field Scientist

Engineering Technician (n = 1)

Engineering Technician II (n = 2)

Engineering Writer

Executive Vice-President Special Service Equipment

Faculty Representative, Affirmative Action

Farmer/Rancher

Field Engineer

Field Instructor

Fire Inspector

Fire Protection Engineer

Firefighter (Paramedic)

General Drafter

General Supervisor, Materials and Production Control

Graduate Assistant

Head, Department of Technical Education

Head, Employee Relation Division

Head, General Technology

Industrial Engineer

Industrial Engineering Technician

Inspector

Installation Supervisor

Insurance Agent

Instructional Media Coordinator

Instructor (n = 19)

Instructor, Administrator

Instructor, Aviation Maintenance

Instructor, Department Head

Instructor, Drafting and Design (n = 3)

Instructor, Electromechanical Technology

Instructor, Electronics (n = 19)

Instructor, Electronics and Electromechanics

Instructor, Electronics Engineering

Instructor, Mechanical Technology

Instructor, Small Engine Repair

Instrument Engineer Specialist

Instrumentation Representative

Interviewer, Employment Service

Laboratory Supervisor

Lead Engineer, Sprinkler Department

Lead Programmer

Lieutenant, U. S. N., Maintenance Control Officer

Loss Control Engineer

Major, U. S. Army, Management Specialist

Management Analyst

Manager, Computer Center and Chairman of Computer Technology Dept.

Manager, Correspondence Programs

Manager, Operations

Manager, Repair and Maintenance

Manpower Analyst

Mechanic

Mechanical Engineer (n = 2)

M I S Supervisor

Numerical Control Programmer

New Car Service Manager

Officer, U. S. Army

Officer, U. S. Navy

Parts Manager

Piping Draftsman

Planning Engineer

Plant Engineer

Plant Manager

Plant Superintendent

Postal Clerk

President, Engineer

President, General Manager

President, Technical Institute

Probe Engineer

Production Controller

Production Engineer

Production Supervisor

Professor

Professor, Fire Protection

Professor, Head, Mechanical Engineering Technology (n = 2)

Professor, Mechanical Engineering Technology

Program Chairman, Construction Engineering Technology

Program Chairman, Electronics Technology Department

Programmer I

Project Director

Project Director, Special Service

Project Supervisor

Prove-out Engineer

Quality Control Manager

Quality Engineer

Research Assistant (n = 4)

Resident Loss Control Representative

Results Engineer

ROTC Instructor

Safety Engineer (n = 4)

Sales Engineer

Salesman (n = 2)

Sales Manager, Distributor

Science Teacher

Self-Employed, Business (n = 2)

Senior Associate Professor

Senior Customer Engineer

Senior Designer

Senior Engineering Draftsman (n = 2)

Senior Engineering Technician

Senior Staff Appraiser

Service Manager, Air Conditioning/Heating

Squadron Electronics Warfare Officer

Staff Programmer

Staff Systems Analyst

State Director Vocational Education

Steamfitter

Supervisor

Supervisor, Computer Operations

Systems Engineer

Systems Programmer

Teacher

Technical Engineering Specialist

Technical Products Program Manager

Technical Services Engineer

Technical Writer, Industrial Training Specialist

Vocational Carpentry Instructor

Water Meter Reader

Zone Manager

VITA

Lonnie Dale Roberts

Candidate for the Degree of

Master of Science

Thesis: A STUDY OF OKLAHOMA STATE UNIVERSITY TECHNICAL EDUCATION GRADUATES

Major Field: Technical Education

Biographical:

Personal Data: Born in Chickasha, Oklahoma, July 7, 1948, the son of Mr. and Mrs. Eldon B. Roberts.

Education: Graduated from Cyril High School, Cyril, Oklahoma, in May, 1966; received Associate of Arts degree in Electronics from Cameron University in 1968; received Bachelor of Science degree in Technical Education from Oklahoma State University in 1975; completed requirements for the Master of Science degree with a major in Technical Education in May, 1976.

Professional Experience: Electronics Technician and Nuclear Reactor Operator, United States Navy, 1968-74; Chief Engineer, KVRO Radio Station, 1974-75; Research Assistant, Oklahoma State University, School of Occupational and Adult Education, 1975-76.

Professional Organizations: Phi Delta Kappa, Oklahoma Technical Society, National Association of Industrial and Technical Teacher Educators.