

A STUDY OF OKLAHOMA HIGH SCHOOL SENIORS WHO
INDICATED ENGINEERING TECHNOLOGY AS
THEIR EDUCATIONAL ASPIRATION

By

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TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION TO THE PROBLEM	1
Statement of the Problem	1
Purpose of the Study	3
Need of the Study.	4
Limitation of the Study.	5
Definition of Terms.	5
II. REVIEW OF LITERATURE.	7
Technical Education.	7
Technical Education in Oklahoma.	12
Identifying Engineering Technology	15
Vocational Counseling.	17
III. PROCEDURES AND BACKGROUND INFORMATION	20
General Plan of the Procedure.	20
Population	22
Instrument, Letters and Card	22
The Nature of the Population	23
Grades in High School	24
Courses Completed	24
Vocational Aspirations.	25
Discussion of Career Choice With Teachers and Counselors.	26
IV. RESULTS OF THE STUDY.	27
Educational Pursuits	28
Types of Programs Attended.	28
Educational Aspiration.	30
Counseling Received	31
Knowledge of Engineering Technology.	34
Responses Compared With Technology Students	38
Knowledge of Technical Programs.	38
When The Decision To Enroll Was Made	38
Source of Encouragement To Attend School	39
Student's Confidence Concerning Ability To Complete Program.	40

Chapter	Page
V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.	41
Findings	42
Conclusions.	44
Recommendations.	44
BIBLIOGRAPHY.	46
APPENDIX A - The Instrument	48
APPENDIX B - The R.C.U. Questionnaire	52
APPENDIX C - The Instrument of Phillips' Study.	61
APPENDIX D - Letters And Card Used In The Study	71
APPENDIX E - Summary Report Of The R.C.U. Study	75

LIST OF TABLES

Table	Page
I. Active Post-High School Technical Programs In Oklahoma, Fall 1966	14
II. High School Grades	24
III. Nonrequired Academic Credits Completed in High School	25
IV. Number of Rejects on Questionnaire Items	27
V. Type of Educational Institutions Attended.	28
VI. Type of Program Attended	29
VII. Highest Education Degree Expected To Complete. . .	30
VIII. Counseling Received, By Subject Area	32
IX. Students Receiving Counselors Advice, By Subject Major	33
X. Per Cent of Students Receiving Counselors Advice, By Subject Major	33
XI. Frequency Count For Responses To Questions One and Two.	34
XII. Responses To Questions One and Two in Percentages	35
XIII. Participants Response As To Length Of An Engineering Technology Program	36
XIV. Participants Responses As To The Degree Awarded Upon Completion Of An Engineering Technology Program	36

CHAPTER I

INTRODUCTION TO THE PROBLEM

An industrial society such as that in existence in the United States today poses special demands of a very complex nature upon the educational system of the country. These demands have invoked many transfigurations in the educational system and will undoubtedly continue to exert an influence inducing more changes. Automation and computers have produced a vast modification in the skills and knowledges of the workers needed in industry generating a shift in the occupational distribution of the labor force. Professional, technical and kindred workers in 1963 constituted 11.2% of the total labor force or 7,475,000 workers, 12.3% or 8,883,00 in 1965 with projected numbers of 13.5% or 11,000,000 in 1970 and 14.5% or 12,900,000 in 1975.¹

Statement of the Problem

If the school systems and training institutions are to serve the needs of people who are going out into the world of work then education and educational planning must keep pace with industrial developments. The changing skills and knowledges needed by industry

¹U. S. Department of Labor, Manpower Report of the President, (Transmitted to the Congress, Washington, 1967), pp. 274.

should be the concern of all educational institutions. In educational planning the problem goes deeper. Educational institutions must consider programs based on industrial and sociologic needs and the availability of students qualified for and desirous of the programs.

The Vocational Research Coordinating Unit of the Research Foundation, Oklahoma State University, made a study of graduating seniors in Oklahoma in the spring of 1967. The study is titled "Plans of High School Seniors, 1967" of which there were a total of 34,580 students making up the population. There were 29,798 usable responses to the study which constitutes 86% of the total population. One item on the questionnaire creates some interesting speculation and presents many questions that need answering. The item appears in the section titled, "Graduates Who Plan Further Education," under the sub heading of a major of Engineering, Agriculture and Technology, where 274 (1.18 per cent) stated they planned to take "Engineering Technology".

The problem of this study was to determine with what degree of confidence educational planners concerned with engineering technician education could view the 274 Oklahoma high school seniors who stated they would enroll in post-high school engineering technology programs and how well they understand the engineering technology job classification.

Purpose of the Study

The following four statements describe the purpose of the study:

A. To compare scholastic standing, school subject interests, vocational aspirations and discussion of career choice with teachers or counselors with the total population of the Research Coordinating Unit Study to determine the type of student responding.

B. Determine if these 274 individuals had sufficient knowledge and counseling to know what engineering technology was.

C. To find out what the respondents actually did about their educational aspirations.

D. Compare the subjects of the study with those in certain technical programs in Oklahoma who were not a part of the 274 as to their source of encouragement to attend school, counseling received, when the decision to enroll was made and their confidence concerning ability to complete the chosen program.

The overall hypothesis of this thesis was that the 274 of the 34,580 seniors who answered the R.C.U. questionnaire saying they planned to take engineering technology did not know what engineering technology was and had not discussed the choice with their high school counselor. Further, the students had very little information upon which to base their decision to take engineering technology and did not pursue an engineering technology program in any educational institution.

Need of the Study

Educational planning in Oklahoma and the nation today is a problem of considerable magnitude. Specifically, in post-high school technical education there is a question about who is to be served. When agreement is reached about who should be served, how do educators go about getting the proper students with the right qualifications into the programs where they can profit greatest?

Education in general suffers from a lack of definitive research.² Before school systems can function to guide students effectively, more knowledge is needed to determine the factors and forces that formulate student opinions, and what individuals or groups contribute most to causing students to make certain choices. Of great importance is some indication of the effectiveness of present efforts to channel students into the technical program when it is best suited to their talents and when there is so vast a need for manpower in technical occupations. By 1970 the technical, highly skilled occupations will account for more than half of all job opportunities.³

A composite picture of these 274 people and a profile derived from their responses on other items in the questionnaire present valuable information to help fill the aforementioned gap in

²Maurice W. Roney, Curriculum Design in Technical Education, School of Industrial Education, Oklahoma State University publication (Stillwater, Oklahoma: 1961), pp. 1.

³Grant Venn, Man, Education and Work, American Council on Education, (Washington, 1964), pp. 135.

educational research. The study gives insights into some of the motivational forces affecting high school seniors and assists in educational planning.

Limitation of the Study

This study was limited to those of the 274 respondents to the questionnaire given by the Research Coordinating Unit who indicated engineering technology as their educational aspiration and who returned the questionnaire sent them as part of this study.

The data for graduates in engineering technology not a part of the 274 came from the following post-high-school institutions:

- A. Oklahoma State University Technical Institute, Oklahoma City, Okla.
- B. Oklahoma State Tech., Okmulgee, Okla.
- C. Northeastern Oklahoma A & M College, Miami, Okla.
- D. Oklahoma State University Technical Institute, Stillwater, Okla.

These institutions draw students from all of Oklahoma and are representative of the students of technology in Oklahoma.

Definitions of Terms

Research Coordinating Unit Questionnaire given to all high school students in Oklahoma titled "Plans of High School Seniors 1967" by R.C.U., Research Foundation, Oklahoma State University, Stillwater, Oklahoma.

Engineering technology as used in this study is defined as that portion of engineering science which requires the individual to apply engineering and scientific principles with related and supporting

technical skills. The occupation lies near the engineering end of the occupational spectrum between engineering and the skilled craftsman.

The engineering technician is a product of some engineering technology training program and often serves as a liaison between engineers and scientists on one hand and skilled craftsmen on the other.

The technicians whose jobs cover relatively wide scopes, and which require a high level of mathematical, scientific and applied technological ability are frequently classified as engineering technicians. Such jobs as engineering aide, tool designer, instrumentation technician, and electronics technician are in this category. The education of the engineering technician is broad enough to prepare him for handling a considerable range of tasks within his general field as assistants to engineers or scientists, or in work of a varied type. Frequently the work of the technical specialist deals with one facet of the broader scope of the work of the engineering technician.⁴

⁴Lynn A. Emerson, "Technical Training in the United States," Education For A Changing World Of Work, (U. S. Office Of Education, Washington, 1963). pp. 4.

CHAPTER II

REVIEW OF LITERATURE

Technical education, technology, technical training, technician training and various other terminology have been used rather loosely to indicate a certain level of education. There seems to be considerable confusion surrounding the definitions and few can agree on a definition unless it is stated in rather broad and general terms. The purpose here is to present the views of the most prominent and accepted authorities on technical education in an effort to define this important emerging field.

Technical Education

Technicians in the labor force today have received their training in a number of different ways. Technician training programs are found in industry, the armed forces, and educational institutions. Opportunities for technical training are found in various kinds of educational institutions; high schools, junior colleges or community colleges and technical institutes.⁵

Most of the institutions mentioned are generally well understood except perhaps the technical institute. Dr. M. W. Roney has defined the technical institute as follows:

⁵Donald S. Phillips, "A Follow-Up Study of the Graduates of a Two-Year Program of Drafting and Design Technology," (Unpublished Thesis, Oklahoma State University, 1964), pp. 1.

The Technical Institute is a post high school institution offering training for occupations in which emphasis is placed on the application of the functional aspects of mathematics and science, or an officially designated, separately organized technical institute division of a four-year institution. The primary purpose of the technical institute is training for an objective other than the baccalaureate degree.⁶

And as expressed by Grant Venn:

The traditional home of technical education is the technical institute, generally a post-high-school, but sub-collegiate, institution. The subject matter is oriented toward engineering, which it is not, and was often taught alongside vocational courses in the trades and crafts, from which it also differs. Set in this no-man's land between the high school and college, between the skilled trades and engineering, technical education has had one of the most tortured developments of any form of American Education.⁷

Technical occupations are filled by people who have worked-up on the job in industry and gathered the skills and knowledges they possess by company in-service training, night school, extension programs and self study. Many have been trained in the military schools and entered jobs in industry. Junior colleges across the nation offer technical programs with a great variety of philosophies and objectives. All have an objective of technical competence, but the amount of technical skill and knowledge to reach the level of "technical competence" varies widely. The balance between general education, its importance to the technician versus technical know-how

⁶Maurice W. Roney, An Analysis of the Interrelationship of Mathematics, Science and Technical Subject Matter in Selected Technical Institute Curricula, (Unpublished Doctorial Dissertation, University of Maryland, 1964), pp. 9.

⁷Grant Venn, Man, Education and Work, American Council on Education, (Washington, 1964), pp. 67.

and scientific and mathematical background related to the technical specialty continue to be widely debated. The advisability of using standard college courses in science and mathematics is strongly doubted by most technical institute people and strongly supported by many junior college administrators.

Another growing source of technicians is the area vocational school or vocational-technical center. As explained by Dr. Lynn Emerson by the following selection:

Area vocational schools of industrial type which offer programs of both trade and technical types are often called vocational-technical schools. When the school provides only training for highly skilled technicians it may take the title of technical institute.

The administrative patterns for area vocational schools vary widely. Some are administered and financed directly by the state. Some are organized on a county basis. Some are developed through cooperative action of several school districts--by formation of a unified district encompassing several school districts, or by other forms of cooperative effort. The area vocational schools of Connecticut are administered by the State Department of Education. Those in New Jersey are on the county basis. Illinois has several programs developed through combination of contiguous school districts. The patterns are influenced greatly by state-wide patterns of organization of schools as a whole, by the degree of industrialization of the state, by the extent of local programs of vocational education, by the density of population in the state, and by other factors. Each pattern appears to grow out of individual state needs.

Area vocational schools are not new; we have had them for many years. California Polytechnic Institute, which now offers degree programs as well as other technical programs, started as an area vocational school. The Alabama School of Trades, the State Trade Schools of Connecticut, the North Georgia Trade and Vocational School, the North Carolina Textile School, and many others, were in the field of area vocational education many years ago. Wisconsin has operated for several decades a system of vocational schools, under local and state boards for vocational education separate from those for general education, which serve the needs of the state as area schools.

Increasing interest in the development of area vocational schools has been evident during recent years. The American Vocational Association has done much to advance the idea of

area vocational education and to aid in the passage of Federal legislation toward this end. Funds made available under Title VIII of the National Defense Education Act of 1958 are limited to programs of area vocational education type. Programs of area vocational education type under the Act include technical institutes, community colleges, technical high schools, etc., which serve areas beyond the local school district. An Area Vocational Education Branch was established in the Division of Vocational Education, U.S. Office of Education, to assist in the development of programs under this Act.⁸

The School of Industrial Education of the Oklahoma State University conducted a study for the center for Economic Development, State of Oklahoma in which the following appears in the introductory portion describing the nature of technical education.

It is apparent that long-existent semantic problems in occupational education still continue to cause misunderstanding and confusion, making it extremely difficult to communicate in precise terms with school administrators, government officials, and representatives of business and industry. One of the terms not yet fully understood in Oklahoma is technical education. Even though this term is being widely used to describe the "new look" in occupational education, it is far from being a standardized term. The following section is included to delimit the term as it is used in the report.

A number of useful definitions for technical education are available, some general and some very specific. Where the term is used to describe a formal program of occupational studies at the associate degree level, certain specifics can be identified.

1. The program is usually two years in length.
2. The content is derived from technical skills and knowledge requirements of technical occupations.
3. Mathematics and the physical or biological sciences are integral parts of the program; technical study is mathematics and science-based at all levels of the program.

⁸ Lynn A. Emerson, "Technical Training in the United States," Education For a Changing World of Work, (United States Office of Education, Washington, 1963). pp. 81.

4. The technical specialization is within an occupational field; but is not confined to, or limited by, the requirements of any single occupation or industry. The emphasis in instruction is placed on technical skills and knowledge that have broad applications.
5. Instruction is laboratory--oriented and makes use of many applications of the technical principles being studied. The emphasis is placed on analytical, rational thought processes rather than on the development of specific procedural techniques or skills.

In terms of educational objectives, technical education is student-oriented first and industry-oriented second. That is to say, the long-range interests of the student have priority over the immediate needs of any single industry or group of industries. There is much evidence that industries which make use of technicians understand and support this concept. No real conflict exists between the interests of the student and those of industry.

J. A. Patterson of Texas Instruments, Dallas, Texas, expresses an industry's point of view which is typical of those industries where technician classifications are well established.

"With the rapid technological advance we are using less correspondence school and self-educated people and concentrating our recruiting efforts on the Associate Science degree holder. The A. S. degree technician has greater long-range potential, is more versatile, and can relieve the engineer of many less complex duties so that he can concentrate on more sophisticated and creative engineering functions."

The Oklahoma Technical Education Council has adopted the following definition of Technical Education:

"Technical Education is a planned sequence of classroom and laboratory experiences, usually at the post-secondary level, designed to prepare men and women for a range of job opportunities in well-identified fields of technology. The program of instruction normally includes study in mathematics, the sciences inherent in a technology, and selected skills, materials and processes commonly used in the technology. Complete technical education programs provide intensive training in a field of specialization, and include basic communication skills as well as general education studies. Instruction in technical programs gives major emphasis to principles rather than to specific techniques or skills. Industrial applications of these principles are used wherever possible in the instructional program."

The technical curriculum should prepare the graduate to:
 (1) obtain a job, (2) be a productive employee with a minimum

of additional on-the-job training, (3) advance with developments in the technology, and (4) continue his education through extension or other supplementary training programs.

In terms of a continuum of technological occupations, technical education prepares for the area between the operator or special skill jobs and the established professions such as medicine, engineering, and science.

The technician is frequently employed in industrial activities in direct support of the professional employee, performing such duties as designing, developing, testing, or modifying products and processes; planning production; writing reports; preparing estimates; analyzing, diagnosing, and solving technical problems.

Technical personnel also are employed in the agricultural sciences, life sciences, and biological sciences in occupations which require preemployment technical education.

This definition is essentially the same as one to be used in a manual, "Standard Terminology for Instruction in Local and State School systems," being prepared by the U. S. Office of Education.

It should be pointed out that technical education is not limited to two-year programs of instruction, although associate degree programs make up the largest grouping. Three- and four- year programs are offered in this field. It is probably that, in the near future, some four-year degree curriculums will be especially designed to accommodate a limited number of associate degree graduates who want and need additional education at the baccalaureate degree level.⁹

Technical Education in Oklahoma

Oklahoma has a variety of educational institutions preparing technicians for industry. There are locally owned and operated junior colleges, state supported junior colleges, technical institutes on the university campus and university operated technical institutes located remotely from the campus. Technical programs

⁹ Maurice W. Roney and Paul V. Braden, Occupational Education Beyond the High School in Oklahoma, Prepared for the Center for Economic Development, State of Oklahoma, (School of Industrial Education, Oklahoma State University, 1967), pp. 7-10.

exist in vocational schools and area vocational-technical schools both of the high-school and post-high-school level. The technical institutes and junior colleges give college credit for technical offerings whereas the others do not.

Table I illustrates the point under discussion by listing the technical programs in Oklahoma that are operated in cooperation with the State Board for Vocational Education, Division of Technical Education.

Locally supported junior colleges are Altus Junior and Sayre Junior College. Cameron and Conners State Colleges, Eastern Okla. A&M College and Northern Oklahoma College represent state supported junior colleges. Oklahoma State University operates an on campus and an Oklahoma City technical institute and Oklahoma State Tech-Oklmulgee. Ardmore, Duncan, Enid, Oklahoma City and Tulsa have operating area vocational-technical schools. The remainder, Eastern Oklahoma A & M College, Langston University, and Murray State College have technical programs which operate as a part of some department within the college or university.

The area vocational schools offer both high school and post-high-school programs. In addition to the high school programs listed in Table I the Oklahoma City Public Schools have technical programs in nine schools.

TABLE I

ACTIVE POST-HIGH SCHOOL TECHNICAL PROGRAMS IN OKLAHOMA, FALL 1966¹⁰

School Offering Post-High School Technical Program	TOTAL	Refrigeration & Heating	Radiation	Petroleum	Metals	Mechanical	Instrumentation & Process Control	Fire Protection	Electronics	Drafting	Data Processing	Construction	Civil & Highway	Civil	Chemical	Aeronautical PROGRAMS
Altus Junior College	1										X					
Cameron State College	3								X	X	X					
Connors State College	1								X							
Eastern Oklahoma State College	5								X	X	X		X		X	
Langston University	1								X							
Murray State College	1									X						
Northeastern Oklahoma A & M College	6					X					X				X	
Northern Oklahoma College	2								X	X	X					
Oklahoma State Tech	4									X	X					
OSU Technical Institute, Okla. City	6						X		X	X	X			X		
OSU Technical Institute, Stillwater	9			X	X	X		X	X	X		X			X	
Sayre Junior College	1								X							
TOTAL	40	3	1	1	1	2	1	1	9	8	7	1	1	1	2	1

¹⁰Maurice W. Roney and Paul V. Braden, Occupational Education Beyond the High School in Oklahoma, Prepared for the Center for Economic Development, State of Oklahoma, (School of Industrial Education, Oklahoma State University, 1967), pp. 7-10.

Identifying Engineering Technology

Technical education has been defined as existing between the engineering and scientific occupational areas and the skilled craftsmen on an occupational continuum. There are a multitude of occupations that exist on the scale and the ones nearest the engineer are referred to as engineering technology.

Engineering technology: The part of the engineering field which requires the application of scientific and engineering principles coupled with the technical supporting skills; it falls in the occupational spectrum between the craftsman and the engineer at the end of the spectrum nearest the engineer.¹¹

And for the engineering technician:

Engineering technician: One who serves as a liaison between the engineer or scientist and the skilled worker. Their education and experience enables them to work in most phases of engineering, such as, design, research engineering calculations, development of experimental equipment and models.¹²

The American Society for Engineering Education made an evaluation of technical institute education and reported in 1962 as follows:

Engineering technology is that part of the engineering field which requires the application of scientific and engineering knowledge and methods combined with technical skills in support of engineering activities; it lies in the occupational area between the craftsman and the engineer at the end of the area closest to the engineer.

- (a) Engineering technology is identified as a part of the engineering field to indicate that it does not by any means encompass the entire field and also to differentiate it from other types of technology in

¹¹David Longobardi, "Historical Development of the Electronic Technology Curriculum at Oklahoma State University's Technical Institute," (Unpublished Thesis, Oklahoma State University, 1966) pp. 7.

¹²Ibid.

areas such as medicine and the biological sciences. The engineering field is viewed as a continuum extending from the craftsman to the engineer. Engineering technology falls, in the continuum, between the craftsman and the engineer and closer to the engineer than to the craftsman.

- (b) Engineering technology is concerned primarily with the application of established scientific and engineering knowledge and methods. Normally engineering technology is not concerned with the development of new principles and methods.
- (c) Technical skills such as drafting are characteristic of engineering technology. Engineers graduated from scientifically oriented curricula (See ASEE Report on the Evaluation of Engineering Education, 1955) may be expected to have acquired less of these skills than previously and the engineering technician will be expected to supply them.
- (d) Engineering technology is concerned with the support of engineering activities whether or not the engineering technician is working under the immediate supervision of an engineer. It may well be that in a complex engineering activity he would work under the supervision of an engineer, a senior engineering technician, or a scientist.

An engineering technician is one whose education and experience qualify him to work in the field of engineering technology. He differs from a craftsman in his knowledge of scientific and engineering theory and methods and from an engineer in his more specialized background and in his use of technical skills in support of engineering activities.

- (a) The Committee does not wish to suggest job or position titles for use by employers. Position titles will vary from one company to another and would normally be functional titles. The Committee recommends, however, that the generic term for those in this field be engineering technicians.
- (b) If the term engineering technician is restricted in its application to the upper portion of the range between the craftsman and the engineer, considerable future confusion can be avoided.

An engineering technology curriculum is a planned sequence of college-level courses, usually leading to an associate degree, designed to prepare students to work in the field of engineering technology.

- (a) The term college-level in the definition of an engineering technology curriculum indicates the attitude with which the education is approached, the rigor,

and the degree of achievement demanded, and not solely or even necessarily that the credits are transferable to baccalaureate programs.

- (b) Although throughout this report the generic term engineering technology curriculum is used, there are many specific branches of engineering technology in which curricula are offered. Commonly encountered are such curriculum titles as mechanical engineering technology, electronic engineering technology, architectural engineering technology, chemical engineering technology, and civil engineering technology.¹³

Technicians come from many sources such as military schools, junior colleges, home study courses, and technical institutes; however, the main source of engineering technicians is the technical institute.

Technical institutes have been particularly identified with curricula in the engineering technologies, and have long enjoyed close relationships with the engineering profession. They are generally single-purpose, post-high-school institutions, with programs averaging two years in length. Many of them have been privately endowed or proprietary institutions, with sizable tuition and fees, selective admissions policies, and rigorous programs of study.¹⁴

Vocational Counseling

Vocational counseling is conducted through the State Board of Education in Oklahoma City with partial funding by the federal government under Title V-A. These counselors work in the school systems full-time, part-time and some on a cooperative system where a counselor serves several schools in the more rural areas.

¹³James L. McGraw, Characteristics of Excellence in Engineering Technology Education, The American Society for Engineering Education, (Urbana Illinois, 1962), pp. 11-12.

¹⁴Grant Venn, Man Education and Work, American Council on Education, (Washington, 1964), pp. 92.

There were 135 full-time counselors working in organized Title V-A Programs during the 1964-65 school year. This constitutes approximately 31% of the counselors working in approved programs and most of these are in the large systems.¹⁵

Counseling services have many phases such as testing, evaluation, certain aspects of dealing with emotional problems and various pupil-teacher-parent situations under the jurisdiction of the counselor. Counseling also includes the giving of occupational information and aid in placement of students in areas which are suited to his abilities and interests.¹⁶

Counselors in Oklahoma are strongly academic people. This is probably due to the requirements to become a counselor and by choice, in order to maintain the demure of academic acceptability and respectability. The following is a portion of the requirements for a counselor from Oklahoma State University.

The applicant shall have a master's degree from an approved college or university and shall have completed an approved program for the preparation of school counselors if academic work was done in Oklahoma. Out of state applicants are required to complete course work which satisfies all academic requirements enumerated by the Minimum Essentials for Approved Teacher-Certificate Programs.¹⁷

The academic background of the counselor is probably desirable for acceptance into the academic school system, but a total background of this nature makes a difficult situation for the areas

¹⁵State Department of Education, Division of Guidance and Counseling, "Providing Guidance Service For The Small Secondary School," (Oklahoma City, 1965), pp. 2.

¹⁶Ibid.

¹⁷Oklahoma State University Catalog 1967-68, Oklahoma State University, (Stillwater, 1967), pp. 167.

of the educational system that is not generally referred to as academic in nature.

The confusion which exists concerning the definition of a technician coupled with the prestige associated with a four year degree program makes the recruitment function of the technical institutes difficult. Also, the lack of understanding of technician education by persons in guidance positions and their tendencies to guide all qualified persons toward engineering and science programs contributes to the recruitment difficulties.¹⁸

This problem of poor understanding and the lack of support by many in the academic stream of education has led many technical people to try to develop their own recruiting and counseling techniques.

¹⁸Donald S. Phillips, "A Follow-Up Study of the Graduates of a Two-Year Program of Drafting and Design Technology," Unpublished Master's Thesis, (Oklahoma State University, 1964), pp. 2.

CHAPTER III

PROCEDURES AND BACKGROUND INFORMATION

The selection of a problem having significance to technical education was the beginning of this study and the immediate need for information concerning technical education to aid in a statewide study of industrial education in Oklahoma further enhanced the choice. The selection was made upon observation of data gathered by the Research Coordinating Unit from high school seniors in Oklahoma during the 1966-67 academic year.

General Plan of Procedure

A. Published literature concerning technical education was reviewed with emphasis on the material that promoted an understanding of the nature of technical education and technical education as it exists in Oklahoma. Particular attention was also given the identifying of engineering technology and how it differs from other technical types of programs. The need for more information about technical education to assist in future studies, the need for guidelines in educational planning in Oklahoma and the immediate data requirements for a statewide study made the topic appear feasible.

B. The records of the responses on the questionnaire given to all high school seniors by the Research Coordinating Unit were stored on magnetic tape in the computer center of Oklahoma State University. The tapes were run on the computer and the control numbers (student numbers) were printed for those who responded to the questionnaire with engineering technology as an educational aspiration. Along with the control numbers, the responses on the questions concerning high school rank, courses completed, vocational aspirations and the amount of discussion of career choice with teachers and counselors were also printed. A copy of the R. C. U. test is included in the appendix of this study.

C. The control numbers were used to pull the test sheets from the 29,789 sheets on file in the office of the Research Coordinating Unit, Gunderson Hall, Oklahoma State University. From these test sheets the addresses were obtained and a letter, questionnaire, follow-up card and second letter were designed. The initial letter, questionnaire and an addressed and stamped envelope were mailed to each person and the post card followed one week later to those who did not respond, asking them to return the questionnaire. A second letter followed the card by about one week urging the ones who had not returned the instrument to do so. A second questionnaire was enclosed in case the first had gotten lost.

D. The responses to the questions were compiled by the computer center and the data coded for evaluation. The data on applicable questions were obtained from Donald S. Phillips' study for comparison with the responses on the instrument designed for use in

this study. A copy of the instrument used in Donald S. Phillips' study is included in the appendix.

E. The findings of the study were analyzed and conclusions drawn about the Oklahoma high school seniors of 1966-67 who indicated engineering technology as their educational aspiration.

Population

The population of the study was the 274 high school seniors, 1966-67 academic year who indicated engineering technology as their educational aspiration. The plan to major in this subject area was evidenced by their having checked this item in the section titled, "Graduates Who Plan Further Education," under a sub heading of a major of Engineering, Agriculture and Technology on the Research Coordinating Unit Questionnaire. The questionnaire was sent to 34,580 students and an 86% return of 29,798 responses.

Instrument, Letters And Card

The Instrument was a nineteen item questionnaire used to collect data for the study. An attempt was made to limit the length to three pages and most items were answerable by a check mark to simplify the response, thereby, improving participation. The University letter-head and leading remarks were designed to impress the participant of the importance of the study and to make him feel his answers were important and needed. A copy of the questionnaire is included in the appendix.

Two Letters and a Card were utilized in gathering data. The letters were designed to promote maximum response by using university

letterheads to indicate legitimate authority. Addressed envelopes were enclosed with an actual stamp and with references to the stamp in the letters, to enhance the factors of convenience and commitment as suggested by Robin.¹⁹ The follow-up card and second letter were brief, reminding the subject of his lack of response and the importance of the research and the fact that he had received a stamped envelope was mentioned again.²⁰ In the second follow-up letter a hand written request across the bottom of the letter urged the participant to return the questionnaire whatever he was doing. The statement was on the multilith master but each statement was preceded by the first name of the addressee written with an ink pen using black ink making the entire statement appear to have been added across the bottom of the letter. The personalization was utilized as suggested by Linsky as being one of the most effective techniques for getting high return percentages.²¹ Copies of the letters and card are included in the appendix.

Nature of the Population

A perspicacity of the 274 participants comprizing the population is helpful in determining the type of sample delt with in this study. The comparison with the overall group gives certain insights into

¹⁹Stanly S. Robin, "A Procedure For Securing Returns to Mail Questionnaires," Sociology and Social Research, Volume 50, No. 1, (Oct., 1965), pp. 24-25.

²⁰Ibed.

²¹Arnold S. Linsky, "A Factorial Experiment in Inducing Responses to a Mail Questionnaire," Sociology and Social Research, Vol. 49, No. 2, (Jan., 1965), pp. 183-187.

the nature of the group and its likeness and differences compared to the total high school population.

Grades in high school were not vastly different from the overall averages made by the 29,789 students as shown in the Table II.

TABLE II

HIGH SCHOOL GRADES

Grade	Population of This Study		Total High School Population in Oklahoma	
	Number	Per Cent	Number	Per Cent
A	18	6.6	3,200	10.9
B	96	35.1	12,109	41.2
C	142	51.8	12,893	43.9
D	12	4.4	1,184	4.0

The number of B's and C's were very nearly the same in the total high school group, but the C group of the population of this study is larger than the B group. An overall look at the total chart reveals the grades slightly lower for the participants of the study; however, the difference is slight.

The courses completed in high school other than those required in English, mathematics, history and science show that the sample under study had the greatest number of academic credits in Mathematics as disclosed in TABLE III.

TABLE III

NONREQUIRED ACADEMIC CREDITS
COMPLETED IN HIGH SCHOOL

<u>Courses</u>	<u>Per Cent of Nonrequired Academic Credits*</u>	
	Population	All H.S. Students in Oklahoma
Communications	5.2	5.7
Social Studies	20.7	26.7
Mathematics	38.2	19.9
Science	13.7	13.0
Foreign Language	3.3	7.7
Fine Arts	4.5	10.7

*Percentages do not add up to 100% because of various miscellaneous courses taken not included in the six divisions above.

The greatest number of credit earned by all Oklahoma students was in the area of Social Studies. The population of this study had fewer credits in fine arts and foreign language than their peers.

Vocational aspirations of the sample under study showed the greatest interest in skilled work where 111 (40.5%) of the 274 gave this as their vocational goal. The next highest was 86 (31.3%) who indicated the professions as the ultimate vocation which they sought. The large majority, 33.7% of the overall group, checked office work and the next largest indication (21.4%) indicated skilled work as their eventual vocation. The large group saying they desired office work probably contained many girls who would tend to not select engineering technology as a possible major. About half of the total high school group were female whereas only nine of the 274 were female.

Discussion of career choice with teachers and counselors was more prevalent among the study group than generally was true of Oklahoma seniors. Of the population under study 23.8% discussed their choice none at all, 61.9% some, and 15.2% discussed their vocational choice quite a bit. For the total high school sample the percentages were 33.3%, 54.2% and 12.5% respectively. There was no indicator in the R.C.U. Study that enables the separation of the relative amounts of discussion with teachers or counselors individually.

CHAPTER IV

RESULTS OF THE STUDY

The total population consisted of 274 high school seniors who indicated engineering technology as their educational aspiration. Of this total population there were 151 responses which was 55.1 per cent return. Seven of the 152 questionnaires were improperly completed and fourteen questionnaires were returned by parents or friends stating that the subjects were in the military service. This left 130 or 47.5% of the total population for which a completed response was obtained. Some of these had items that were not answered or answered improperly as shown in Table IV.

TABLE IV

NUMBER OF REJECTS ON QUESTIONNAIRE ITEMS

Item	No. of Rejects	Item	No. of Rejects	Item	No. of Rejects
1	3	7	9	14	0
2	1	8	0	15	0
3	3	9	0	16	1
4	1	10	0	17	3
5	0	11	0	18	4
6	7	12	3	19	0
		13	8		

The various tabulations in this chapter will not always add to 100 per cent due to round-off and because some tables will include some of the rejects of Table IV.

Educational Pursuits

Types of Programs Attended

There was a total of 109, or 84 per cent, of the respondents to the questionnaire who were enrolled in some type of public or private educational or training institution at the time they completed the mailer. Table V gives the type of educational institution, selected by those of the study group who responded to the question. The technical institute heading in Table V includes the one on campus in Stillwater and the Oklahoma City branch.

TABLE V

TYPE OF EDUCATIONAL INSTITUTIONS ATTENDED

<u>Institution</u>	<u>Number</u>	<u>Percentage</u>
University	27	20.8
Tech Institute (O.S.U.)	17	13.1
4-Year College	26	20.0
Junior College	13	10.0
Oklahoma State Tech - Okmulgee	12	9.2
Proprietary School	13	10.0
High School	1	0.8
Not Enrolled in School	21	16.2
Total	130	100

The greatest percentage attended a university (20.8%) and the 4-year attendance very nearly the same with 20 per cent. Technical institute attendance was the next largest group with 13 per cent of

those who attended some type of educational program; next were junior colleges and proprietary schools with 10 per cent, Oklahoma State Tech 9.2 per cent and one person was in high school. There were 16.2% who did not continue their education. There were a number of different programs and courses of study pursued by those who continued their education as illustrated by Table VI.

TABLE VI
TYPE OF PROGRAM ATTENDED

<u>Program</u>	<u>Number</u>	<u>Percentage</u>
Academic	30	23.1
Technical	31	23.8
Trade	12	9.2
Engineering	23	17.7
Technical-Proprietary	13	10.0
Not Enrolled in School	21	16.2

Academic subjects were psychology, history, language, chemistry, physics and all other four year, B.S. degree programs other than engineering. Engineering was separated from the other academic subjects to be analyzed separately because of its relation to technical education and confusion with engineering technology. Table VI illustrates that the two largest types of programs were technical and academic with 23.8 and 23.1 per cent respectively. There was 17.7 per cent in engineering, 10 per cent in proprietary technical programs and 9.2 per cent who were in trade type of programs. There was 16.2 per cent who did not enroll in any type of educational program.

Of the 109 who are attending some type educational program 98, 89.9 per cent, were attending full time. Eleven or 10.1 per cent were attending part-time and none were attending a night, part-time program.

Educational Aspirations

Table VII gives the highest education degree each expected to complete. There were a total of 106 usable answers of the 109 who were attending some type of educational program. Almost half, 48.1 per cent, and by far the largest single group indicated that they planned to complete a bachelor's degree. Since those who planned to get advanced degrees, 22.6 per cent, would have to get a B.S. degree first, this makes a total of 70.7% who have a B.S. or higher degree as an educational aspiration. There were 17 per cent who planned to get a certificate and 12.3 per cent who planned to get an A.S. degree.

TABLE VII

HIGHEST EDUCATION DEGREE EXPECTED TO COMPLETE

<u>Degree Aspiration</u>	<u>Number</u>	<u>Percentage</u>
Certificate of Completion	18	17.0
Associate Degree	13	12.3
Bachelor's Degree	51	48.1
Master's Degree	17	16.0
Doctor's Degree	7	6.6
Total	106	100.0

Twenty of the 106 indicated they would get a degree and that they would major in technology, four chose education, 38 in engineering, eleven stated business and the remainder either said they did

not plan to get a bachelor's degree or did not respond to the question at all.

The data indicates that those who responded to the questionnaire, by and large, did not follow through on their stated aspiration of majoring in engineering technology. Only 23 per cent of the usable responses were actually enrolled in some type of technical program in a university, junior college or four-year college. There are undoubtedly many reasons such as poor understanding of engineering technology (discussed later), receiving of scholarships in other areas, 16.2 per cent never went to school at all, being attracted to other programs by friends, etc. Many things can happen between the latter part of a school year and the fall enrollment and the data in Chapter IV indicates many chose their program of study during this time.

Counseling Received

Table VIII gives the tabulation of the responses to the question asking if the student had visited with a counselor about the possibility of enrolling in his selected program of study. The table is broken down by major subject. There were 105 usable replies to the question.

TABLE VIII
COUNSELING RECEIVED, BY SUBJECT AREA

Type of Major	Visited With School Counselor		Visited With Another Counselor		Never Visited With Counselor	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Academic	17	16	2	1.9	10	9.4
Technical	15	14.2	2	1.9	12	11.3
Trade	7	6.6	0	0	5	4.7
Engineering	9	8.5	3	2.8	10	9.4
Tech. (Proprietary)	7	6.6	1	0.9	5	4.7
Total	55	51.9	8	7.5	43	40.6

A total of 51.9 per cent indicated that they had visited with their school counselor and 40.6 per cent stated they never visited with any counselor. Seven and one-half per cent talked with other counselors besides their school counselor. The technical, trade, proprietary technical, and academic subject area students all had slightly over half who visited with their school counselor; whereas, the engineering students indicated slightly less than half who visited their counselor.

When asked what was told him by the counselor, if he visited a counselor, about enrolling in his present program the 77 replies were as illustrated in Table IX and X.

TABLE IX
STUDENTS RECEIVING COUNSELORS ADVICE
BY SUBJECT MAJOR

Counselor's Advice	MAJOR					Total
	Academic	Tech.	Trade	Engnr.	Propreitary	
Never visited about program	1	5	3	1	2	12
Counselor warned against enrolling	0	0	0	0	1	1
Counselor encouraged enrolling	10	9	3	5	4	31
Told about program, remained neutral	9	10	3	9	2	33

TABLE X
PER CENT OF STUDENTS RECEIVING COUNSELORS
ADVICE, BY SUBJECT MAJOR

Counselor's Advice	MAJOR					Total
	Academic	Tech.	Trade	Engnr.	Propreitary	
Never visited about program	1.3	6.5	3.9	1.3	2.6	15.6
Counselor warned against enrolling	0	0	0	0	1.3	1.3
Counselor encouraged enrolling	13.0	11.7	3.9	6.5	5.2	40.3
Told about program, remained neutral	11.7	13.0	3.9	11.7	2.6	42.9
Total	26.0	31.2	11.7	19.5	11.7	100

Only the proprietary school enrollees were warned against enrolling and this was only 1.3 per cent of the group. The largest

response (42.9%) was an indication that the counselor had remained neutral and close behind was 40.3 per cent who said their counselor encouraged their choice.

Knowledge of Engineering Technology

This thesis hypothesizes that the original 274 high school seniors who indicated engineering technology as an educational aspiration did not know what engineering technology was. Questions one and two of the mailer sent to the 274 ask about the occupational level of an engineering technician. Question one gave job examples and question number two was more general in that the levels are referred to as professional, semi-professional, skilled, etc. Response number 2 is the correct answer on both questions. Table XI is a two-way tabulation of the results of these questions and Table XII gives the data in percentages.

TABLE XI

FREQUENCY COUNT FOR RESPONSES TO QUESTIONS ONE AND TWO

Response on Question Number 1	Response on Question Number 2				Total
	1	2	3	4	
1	12	3	0	0	15
2	21	35	9	2	67
3	13	7	24	1	45
4	0	0	0	0	0
Total	46	45	33	3	127

TABLE XII
 RESPONSES TO QUESTIONS ONE AND
 TWO IN PERCENTAGES

Response on Question Number 1	Response on Question Number 2				
	1	2	3	4	Total
1	9.4	2.4	0	0	11.8
2	16.5	27.6	7.8	1.6	52.8
3	10.2	5.5	18.9	0.8	35.4
4	0	0	0	0	0
Total	36.2	35.4	26.0	2.4	100

Question one choices to describe the job level of an engineering technician:

1. Doctor, lawyer or teacher
2. Laboratory or design assistant
3. Precision machinist or T-V repairman
4. Truck driver, plumber's helper or assembly line worker

Question two choices to describe the occupational level of an engineering technician:

1. Professional
2. Semi-Professional
3. Skilled
4. Semi-Skilled

The expected or correct response on questions one and two is item number two, the engineering technician is a semiprofessional occupational level and is best described by a laboratory or design assistant. There were 67 (52.8%) who responded correctly to question one and 45 (35.4%) for question two. There were 35 (27.6%) who responded correctly to both questions.

Questions six and seven of the questionnaire were also designed to give an indication of the amount of knowledge about engineering technology held by the population who said they planned to pursue it as a career. Question six eludes to the normal time allotted to most

programs and question seven asks for the degree most often awarded upon completion. Table XIII gives the beliefs held concerning length of time and Table XIV tabulates the consensus on degrees.

TABLE XIII

PARTICIPANTS RESPONSE AS TO LENGTH OF
AN ENGINEERING TECHNOLOGY PROGRAM

Length in Years	Responses	
	Number	Per Cent
1	3	2.5
2	60	50
3	10	8.3
4	35	29.2
5	12	10
Total Responses	120	100

TABLE XIV

PARTICIPANTS RESPONSES AS TO THE DEGREE AWARDED
UPON COMPLETION OF AN ENGINEERING
TECHNOLOGY PROGRAM

Degree Awarded	Responses	
	Number	Per Cent
Associate Degree	50	42.4
Bachelor's Degree	40	33.9
No Degree	28	23.7
Total Responses	118	100

Examination of the data reveals that the sample who returned the questionnaire had a poor understanding of engineering technology. Only 18 of the 274 (6.6%) gave the correct response on all those questions designed to examine the extent of knowledge held concerning

engineering technology. This is true under a circumstance where many were enrolled in a technical program and were exposed to information about job levels as a part of the normal orientation program of the school. In many cases engineering and other students could have gained information about occupational levels since completing the R.C.U. questionnaire in the spring of 1967.

The confusion about the semi-professional occupational level is also shown in the results obtained from the data supplied by the Research Coordinating Unit. The 274 who indicated engineering technology as their field of study had 111 or 40.5 per cent who stated they planned to be skilled workers, and 86 or 31.3 per cent planned to go into the professions. The data shows that while most of the responses gave the associate degree as the degree normally awarded upon completion of an engineering technology program there were almost as many said that a B.S. degree was given. This may indicate confusion between engineering and engineering technology.

There were 35 persons who knew that engineering technology was a semi-professional occupational level and that a laboratory or design assistant was a job description of the engineering technician. There were 26 of this group who said that most engineering technology programs were two years in length and 18 of those who stated that the associate degree is normally awarded. Five stated that no degree is given upon completion of an engineering technology program.

The 18 students who gave the expected answer on all the questions designed to test their knowledge of engineering technology included 14 who were attending technical programs, two each in academic, engineering and technical programs in a proprietary school

and one who was enrolled in a trade program. Five gave no answer to the question. Ten of the 14 had a bachelor's degree as their educational aspiration and all ten said they planned to get their degree in a four-year technology program.

Responses Compared With Technology Students

Donald S. Phillips' study of technology students in the fall of the 1967-68 school year is used as a basis for comparison with the 130 usable responses to the questionnaire received from the population of this study. Phillips' study and the schools included are discussed in the first chapter of this paper.

Knowledge of Technical Programs

Phillips' study shows that 65 to 72 per cent of the group under study had not received counseling aid in selecting their career choice; whereas, 51.5 per cent of the responses to item number 14 on the questionnaire of this study indicated no counseling aid was received.²²

When The Decision To Enroll Was Made

Item 16 of the questionnaire used in this paper asked when they had first decided to enroll in their present program and 75 per cent said during their senior year or later. Phillips' study showed that

²²Donald S. Phillips, Personal and Social Background Characteristics of Entering Technician Education Students at Four Post-High School Institutions, (Unpublished Doctorial Dissertation, Oklahoma State University, 1968), pp. 67.

50.4 per cent of the technical students made up their mind during the last six months preceding enrollment.²³

Source of Encouragement to Attend School

Phillips' study showed that 38 to 51 per cent of the technical students said nobody had encouraged them to attend, that they had decided by themselves. The greatest amount of encouragement came from parents where 19 to 28 per cent stated that parents had encouraged them most to attend school. The next largest group was encouragement from friends their own age with 7 to 14 per cent.²⁴

Question 18 of the questionnaire used in this study asked students to indicate who most encouraged them to attend and the largest response was 54 per cent who said nobody encouraged them, they decided by themselves. The next largest group was 25.5 per cent who were encouraged most by their parents and next was six per cent who said the people connected with the school where they were attending at the time they completed the questionnaire. Four and one-tenth per cent said they were most encouraged by friends their own age.

²³Donald S. Phillips, Personal and Social Background Characteristics of Entering Technician Education Students at Four Post-High School Institutions, (Unpublished Doctorial Dissertation, Oklahoma State University, 1968), pp. 76.

²⁴Ibid, pp. 72.

Students Confidence Concerning Ability To Complete Program

On item 17 of the student questionnaire, each was asked to express whether he was very confident, confident, unsure, doubtful or very doubtful that he could complete the program in which he was enrolled. There were 52.8 per cent who were very confident, 37.7 per cent who were confident and 9.4 per cent who were unsure. There were none who indicated they were doubtful or very doubtful.

Phillips' study group showed similar results with 44 to 61 per cent expressing a very confident attitude, 28 to 47 per cent expressing confidence and 8 to 14 per cent were unsure about being able to complete their chosen program.²⁵

²⁵ Donald S. Phillips, Personal and Social Background Characteristics of Entering Technician Education Students at Four Post-High School Institutions, (Unpublished Doctorial Dissertation, Oklahoma State University, 1968), pp. 75.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to investigate the 274 high school seniors of the 1966-67 school year who had indicated engineering technology as their educational aspiration. To compare the group with the overall population of high school seniors with respect to scholastic standing, school subject interest, vocational aspirations and the amount of discussion with school counselors and teachers about career choices. It was the purpose of the study to determine the student's knowledge of the engineering technology job classification and what program or course of study was actually pursued. As a secondary concern the knowledge of technical programs, source of encouragement, confidence concerning ability to complete their chosen program and when the decision to enroll was made compared with the results of Donald S. Phillips' study of technical institute students. A questionnaire was designed along with letters and cards to gather data from the population and the necessary information from Dr. Phillips' study and the Research Coordinating Unit were obtained. The results are presented in Chapter IV of this thesis.

The original hypothesis was that the 274 of the 34,580 Oklahoma high school seniors who indicated engineering technology as their educational aspiration did not know what engineering

technology was and had not discussed the choice with their high school counselor. Further, they had little information upon which to base their decision and did not pursue an engineering technology program in any educational institution.

Findings

The major findings of the study as supported by the data gathered in this thesis based upon a 55.1 per cent return of questionnaires are as follows:

A. The majority of the respondents, 77 per cent, did not pursue an engineering technology program in a university, junior college, four-year college or state technical school.

B. The study sample had a very poor understanding of engineering technology with only 18 of 130, 13.8 per cent, giving the correct response on questions 1, 2, 6 and 7 which were designed to test their knowledge of engineering technology.

C. The majority (70.7 per cent) of the persons responding had a bachelor's degree or higher as an educational aspiration.

D. About one-half the group under study talked with a counselor about their career choice (51.9 per cent).

E. Parents were the greatest source of encouragement when any encouragement at all was given with 25.5 per cent.

F. The nature of the population used in this study as related to grades in high school, courses completed in high school and amount of discussion of career choice with teachers and counselors were not much different than the total high school group studied by R.C.U. as compiled in the section of this paper titled "Nature

of the Population". The overall high school group has as its largest percentage (33.7%) those who said they would pursue office work as a vocation; whereas, the largest group under study indicated skilled work for a vocational aspiration. This difference was attributed to the large number of females (about half) in the total high school group and only nine (3.3%) of the 274 were girls. The second largest indication by the overall high school group was 21.4% who gave skilled work as their eventual vocation which is the largest response (40.5%) given by the study group. From this, one can conclude that the 274 under investigation were not materially different from all other high school seniors 1966-67 in the attributes compared.

G. As a secondary concern the responses of this study were compared with the technical institute students studied by Donald S. Phillips. Phillips' study shows that a higher percentage of technical students had knowledge of technical programs in Oklahoma than did the respondents to this study. In both studies there is a strong indication that students often chose the programs in which they enrolled during the last year preceding enrollment. There were 59.6 per cent who decided upon their career while a senior, 8.7 per cent decided during the summer and 6.7 per cent stated they had decided one week before enrollment. Both studies also indicate that the greatest source of encouragement to enroll in school came from parents, but that most of the overall groups in both studies stated that no one had encouraged them, that they had decided by themselves.

Conclusions

The original hypothesis is supported. The majority did not know what engineering technology was, had not discussed the choice with their high school counselor and did not pursue an engineering technology program in any educational institution.

Recommendations

Recommendations that seem most pressing based on the information compiled in this paper are that of a need for better public relations and more extensive research. More knowledge of the motivational forces and informational sources of high school students is needed to guide the efforts of researchers. There is obviously a great deal of misunderstanding and confusion among high school students concerning engineering technology, engineering and the skilled crafts and their basic differences. To improve the situation an all out effort needs to be made to better inform counselors, teachers, students and the general public about the education of semi-professional occupational level workers. When comparing the 63 per cent of the states high school graduates who continue in some phase of higher education where only 20 per cent continue to the baccalaureate degree level indicates a flaw in the overall guidance of high school students.²⁶

²⁶ Maurice W. Roney and Paul V. Braden, "Occupational Education Beyond the High School in Oklahoma," A study performed under contract with the Economic Development Administration by Oklahoma State University. Journal of Technology, Vol VII, No. 1, Spring 1968, pp. 7.

To properly channel those suited for a semi-professional level of education has great economic and social implications. More research coupled with extensive public relations with a careful evaluation of results is urgently needed.

BIBLIOGRAPHY

- American Society for Engineering Education, Characteristics of Excellence in Engineering Technology Education. James L. McGraw, project director. Urbana, Illinois, 1962.
- Emerson, Lynn A. "Technical Training in the United States," Education For A Changing World of Work. Washington: United States Office of Education, 1963.
- Henninger, G. Ross. The Technical Institute in America. New York: McGraw Hill Book Co. Inc., 1959.
- Linsky, Arnold S. "A Factorial Experiment in Inducing Responses to a Mail Questionnaire." Sociology and Social Research. Volume 49, Number 2, January 1965.
- Longobardi David. "Historical Development of the Electronics Technology Curriculum at Oklahoma State University's Technical Institute." Unpublished Master's Thesis, School of Industrial Education, Oklahoma State University, 1966.
- National Manpower Council. Government and Manpower. New York: Columbia University Press, 1954.
- Oklahoma Employment Security Commission. Manpower in Oklahoma. Oklahoma City: Oklahoma Employment Security Commission, 1964.
- Oklahoma State Regents for Higher Education. Higher Education Opportunities and Needs in Oklahoma, Report number 7, Oklahoma City: Oklahoma State Regents for Higher Education, 1965.
- Oklahoma State University Catalog 1967-68. Stillwater: Oklahoma State University, 1967.
- Phillips, Donald S. "A Follow-Up Study of a Two-Year Program of Drafting and Design Technology." Unpublished Master's Thesis, School of Industrial Education, Oklahoma State University, 1964.
- Phillips, Donald S. "Personal and Social Background Characteristics of Entering Technician Education Students at Four Post-High School Institutions." Unpublished Ed.D. Dissertation, Oklahoma State University, 1968.

- Robin, Stanley S. "A Procedure for Securing Returns to Mail Questionnaires." Sociology and Social Research. Volume 50, Number 1, October, 1965.
- Roney, Maurice W. "An Analysis of the Interrelationship of Mathematics, Science and Technical Subject Matter in Selected Technical Institute Curricula." Unpublished Ed. D. Dissertation, University of Maryland, 1964.
- Roney, Maurice W. Curriculum Design in Technical Education. Stillwater: Publication of the School of Industrial Education, Oklahoma State University, 1961.
- Roney, Maurice W. and Braden Paul V. Occupational Education Beyond the High School in Oklahoma. Prepared for the Center for Economic Development, State of Oklahoma. School of Industrial Education, Oklahoma State University, 1967.
- Smith, Leo F. and Lipsett Lawrence. The Technical Institute. New York: McGraw Hill Book Co. Inc., 1956.
- State Board for Vocational Education, Division of Technical Education. Technical Education in Oklahoma. Stillwater: State Board for Vocational Education Bulletin, Date unknown.
- State Department of Education, Division of Guidance and Counseling. "Providing Guidance Services for the Small Secondary School." Oklahoma City: State Department of Education, 1965.
- University of Illinois. Technician Need Study: Vermilion County Illinois. Urbana: The University of Illinois, 1964.
- United States Department of Labor. Manpower Report of the President. Washington: Transmitted to the Congress, 1967.
- Venn, Grant. Man Education and Work. Washington: American Council on Education, 1964.

APPENDIX A

THE INSTRUMENT



OKLAHOMA STATE UNIVERSITY • STILLWATER

The Technical Institute
Frontier 2-6211, Exts. 472, 7033

November 22, 1957

74074

Name _____

Address _____

You recently indicated an interest in technical education. Would you please help us by answering the following questions? Your response will be important in the successful completion of a "Statewide Study of Post-High School Occupational Education" currently in process at Oklahoma State University.

Directions: Please check (✓) all questions in SECTION A. SECTION B should be checked (✓) only by those who are presently enrolled in some type of schooling. Check the answer that is most nearly correct.

SECTION A:

1. Which of the following occupations most nearly describes the job level of an engineering technician?
 1. ___ Doctor, lawyer or teacher
 2. ___ Laboratory or design assistant
 3. ___ Precision machinist or T-V repairman
 4. ___ Truck driver, plumber's helper or assembly line worker
2. Which of the following occupational levels most nearly describes the job of the Engineering Technician?
 1. ___ Professional
 2. ___ Semi-Professional
 3. ___ Skilled
 4. ___ Semi-Skilled
3. Check all of the following mathematics courses you completed in high school.
 1. ___ Business mathematics
 2. ___ Shop mathematics (or arithmetic)
 3. ___ Algebra I
 4. ___ Plane geometry
 5. ___ Algebra II
 6. ___ Advanced (or solid) geometry
 7. ___ Trigonometry
 8. ___ Other; Specify:

4. Where did you rank in your high school graduating class?
 1. ___ I did not graduate
 2. ___ Top quarter of high school graduates
 3. ___ Second quarter
 4. ___ Third quarter
 5. ___ Bottom quarter
 6. ___ I do not know

5. What schools, institutes or colleges in Oklahoma offer engineering technology programs? Please list them below.
- _____
- _____
- _____

6. How long does it normally take to complete an engineering technology program?
1. One year
 2. Two years
 3. Three years
 4. Four years
 5. Five years

7. What degree is normally awarded upon completion of an engineering technology program?
1. Associate of Science
 2. Bachelor of Science
 3. No degree

8. Are you presently attending school in some type of public or private educational or training institution?
1. No; (if not, please place the questionnaire in the enclosed envelope and mail it)
 2. Yes; (Please continue with this questionnaire)

*Because
I'm
not
sure* →

SECTION B: FOR THOSE WHO ANSWERED NUMBER EIGHT YES.

9. What school are you presently attending?

(Name)

(City or Town)

10. When do you attend your program?
1. Full-Time
 2. Part-Time Day
 3. Part-Time Night

11. What is your present major?

(Be Specific)

12. What is the highest education degree you expect to complete?
1. Certificate of Completion
 2. Associate degree
 3. Bachelor's degree
 4. Master's degree
 5. Doctor's degree

13. If you expect to complete a bachelor's degree, in what field do you plan to study?
1. 4 year technology
 2. Teacher education
 3. Engineering
 4. Business
 5. Other
 6. I do not plan to complete a bachelor's degree.

14. Did you visit with a counselor about possibilities of attending this program?
1. Yes, I visited with a school counselor.
 2. Yes, I visited with another counselor. Specify: _____
 3. No, I never visited with a counselor.

15. If you visited with a counselor, what did he tell you about enrolling in your present program?
1. He never talked to me about the program.
 2. He generally warned me not to enroll in the program.
 3. He generally encouraged me to attend the program.
 4. He told me about the program but neither encouraged nor discouraged me from attending.
16. When did you first decide to enroll in your present program?
1. While in junior high school
 2. While in 10th or 11th grade
 3. While a senior in high school
 4. During the summer
 5. Just a week or so before school began
17. How confident are you that you can complete the program in which you are enrolled?
1. Very confident - I am sure that I will finish.
 2. Confident - I think I will probably finish.
 3. Unsure - I may or may not finish depending on what happens.
 4. Doubtful - I probably will not finish.
 5. Very doubtful - I plan to quit as soon as I can find a job.
18. Who most encouraged you to attend this program?
01. My parents
 02. Relatives
 03. Friends about my age or not much older
 04. Friends of family
 05. A previous employer of mine
 06. The people here at the school who operate it or work for it
 07. A teacher or counselor in high school
 08. Somebody in a government agency (such as VA, etc.)
 09. Nobody encouraged me I decided all by myself
 10. Other; Specify
-
19. What job title do you expect to have upon employment at your next full-time job?
-

APPENDIX B

THE RESEARCH COORDINATING UNIT QUESTIONNAIRE

INSTRUCTIONS

The survey instrument we are asking you to complete is an endeavor to discover what kinds of plans high school seniors have for the future — and how educators can assist youth in making their plans succeed. Please read directions carefully before you begin.

Every student should answer questions 1 through 35.

Those who plan further education this summer or fall (or following military service) should answer questions 36 through 50. **Do not** answer questions 51 through 61.

All other students (those who do not plan further education) answer questions 51 through 61. **Do not** answer questions 36 through 50.

All students fill out questions 62 through 74.

FILL OUT ALL QUESTIONS AS REQUIRED ABOVE, MARKING "NOT APPLICABLE" IF NECESSARY.

DIRECTIONS FOR MARKING ANSWER SHEET

1. Be sure that the answer sheet number you are marking corresponds with the item number in the booklet. **DO NOT MARK MORE THAN ONE ANSWER ON EACH LINE.**
2. The answer sheet should be marked with an ordinary pencil. Do not use a pen. Corrections can be made by erasing carefully and completely.
3. Marks should not "stray" beyond the limits of an answer space. a b c

The example might be read as both "b" and "c" by the optical scanner which will be used to read your answers.

Sample:

Booklet	Answer Sheet
0. My age is: a. 16 b. 17 c. 18	0. <u> a </u> <u> b </u> <u> c </u> <u> d </u> <u> e </u> <u> f </u> <u> g </u> <u> h </u> <u> i </u> <u> j </u>

A student who is 17 years old would mark "b" as shown in the sample.

Sample:

BOOKLET

22-23. What factor is most responsible for your being a senior?

- | | |
|--|--|
| aa. Desire to gain knowledge
ab. Desire to graduate
ac. Social life of school
ad. School attendance laws
ae. Parents' insistence
af. Work Study Program | ag. Teachers who understand student problems
ah. Athletics, school activities
ai. National Youth Corps Program
aj. Desire to succeed in today's world
ba. "all my friends go to school"
bb. "don't know," or other reason |
|--|--|

ANSWER SHEET

22. a b c d e f g h i j

23. a b c d e f g h i j

Some of the responses require more than one mark on the answer sheet. An example is number 22-23. on page 3 in the booklet. In order to answer this question, you must mark the first letter of your desired response on the answer sheet line No. 22., and the second letter of your response on the answer sheet line No. 23.

"Desire to graduate", which is "ab" in the booklet, is marked in the sample above. Make sure you understand how to answer questions of this type.

Other questions which require answers of two marks are: 24-25.; 39-40.; 69-70.; 71-72.; and 73-74.

MY PLANS BEYOND HIGH SCHOOL

1. Age: a. 15 b. 16 c. 17 d. 18 e. 19 f. 20 g. 21 h. 22 or older
2. Sex: a. Male b. Female
3. Race: a. Indian b. Negro c. White d. Other
4. Marital Status: a. Single b. Married c. Separated (or divorced)
5. I plan (this fall);

a. To continue going to school	e. To work at my home
b. To get a job	f. I have no definite plans
c. To become an apprentice	g. Other (specify on back of answer sheet on line No. 5)
d. to go into military service	
6. If the plan you checked is not what you would really like to do, check the following statement: I would like:

a. To continue going to school	e. To work at my home
b. To get a job	f. To have no definite plans
c. To become an apprentice	g. Other (Specify on back of answer sheet)
d. To go into military service	h. Not applicable
7. To what extent have you discussed your plans with your teachers or counselor?

a. Not at all	b. Some	c. Quite a bit
---------------	---------	----------------
8. To what extent have you discussed your plans with your parents?

a. Not at all	b. Some	c. Quite a bit
---------------	---------	----------------
9. To what extent have you discussed your plans with friends your age?

a. Not at all	b. Some	c. Quite a bit
---------------	---------	----------------
10. To what extent have you discussed your plans with an adult who is in the occupation you desire to enter:

a. Not at all	b. Some	c. Quite a bit
---------------	---------	----------------
11. Has marriage or the early prospect of marriage influenced your plans for next year?

a. Yes	b. No
--------	-------
12. The prospect of military service: (boys only)

a. Has influenced me to attend college and join the ROTC
b. Has made me uncertain about my future plans
c. Has caused me to plan a military career
d. Has had no influence upon my plans
e. Not applicable (girl)
13. The fact that boys must go into military service: (girls only)

a. Has made me uncertain about my future plans
b. Has had no influence upon my decisions
c. Has caused me to plan to enter military service also
d. Not applicable (boy)
14. My parents:

a. Want me to go to college	d. Do not care which I do
b. Want me to go to work	e. Do not care what I do
c. Want me to do neither	f. Not applicable

READ THE FOLLOWING BEFORE YOU ANSWER ITEMS 15 THROUGH 18:

State of Oklahoma requirements for graduation include the following required subjects from the ninth

grade through the twelfth grade: 8 credits (semesters) of English or its equivalence, 2 credits in Math, 2 credits in Science, 2 credits in American History, and 1 credit in Oklahoma History. **Do not count credits you have earned to meet these requirements when answering items 15 through 18. Do count credits you expect to earn this semester (except in meeting above requirements).**

15. Not counting the above required credits, in what academic subject area have you completed the most credits?
 - a. Communication (Speech, Drama, Journalism, etc.)
 - b. Social Studies (History, Geography, Sociology, Psychology, etc.)
 - c. Mathematics
 - d. Science (Biology, Physics, Chemistry, etc.)
 - e. Foreign Language
 - f. Fine Arts (Music, Art, etc.)
 - g. None of the above
16. How many credits do you have in the subject area selected above?
 - a. 1 b. 2 c. 3 d. 4 e. 5 f. 6 g. 7 h. 8 i. More than 8 j. Not applicable
17. In what area did you complete the next largest number of credits?
 - a. Communication
 - b. Social Studies
 - c. Mathematics
 - d. Science
 - e. Foreign Language
 - f. Fine Arts
 - g. None of the above
18. How many credits do you have in that subject area?
 - a. 1 b. 2 c. 3 d. 4 e. 5 f. 6 g. 7 h. 8 i. More than 8 j. Not applicable
19. In what vocational field have you received the most credits?
 - a. Agriculture
 - b. Business (Typing, Shorthand, Bookkeeping, etc.)
 - c. Distributive Education (D. E.)
 - d. Home Economics
 - e. Technical Education (Electronics, Drafting, Technical Chemistry, etc.)
 - f. Trades and Industrial Education (Auto Mechanics, Cosmetology, etc.)
 - g. None of the above, no vocational course, etc.
20. How many credits do you have in the vocational field checked above?
 - a. 1 b. 2 c. 3 d. 4 e. 5 f. 6 g. 7 h. 8 i. More than 8 j. Not applicable
21. What is your grade average (approximately) from grades nine through twelve?
 - a. A b. A- c. B+ d. B e. B- f. C+ g. C h. C- i. D+ j. D or lower
- 22-23. What factor is most responsible for your being a senior?

<ol style="list-style-type: none"> aa. Desire to gain knowledge ab. Desire to graduate ac. Social life of school ad. School attendance laws ae. Parents' insistence af. Work Study Program 	<ol style="list-style-type: none"> ag. Teachers who understand student problems ah. Athletics, school activities ai. National Youth Corps Program aj. Desire to succeed in today's world ba. "all my friends go to school" bb. "don't know," or other reason
--	--
- 24-25. What factor do you think is most responsible for school dropouts?

<ol style="list-style-type: none"> aa. Lack of interest ab. Illness ac. Financial need ad. Lack of ability ae. Attendance af. School curriculum 	<ol style="list-style-type: none"> ag. Family attitude toward school ah. Non-acceptance by students ai. Non-acceptance by teachers aj. Romantic interest, marriage ba. To get away from home (dropout is secondary) bb. Family responsibilities
---	---

26. Would you have have dropped out if you could? a. Yes b. No
27. Do you have any physical disabilities? a. Yes b. No (If yes, please specify on back of answer sheet on line No. 27)
28. If yes, have you had contact with the Oklahoma Vocational Rehabilitation Division for aid in vocational training, etc.? a. Yes b. No
29. What is the highest level of education your father attained?
- | | |
|--------------------------------------|------------------------------------|
| a. less than high school | e. attended college |
| b. attended high school | f. graduated from college |
| c. graduated from high school | g. has master's or doctor's degree |
| d. attended trade or business school | h. "don't know" |
30. What is the highest level of education your mother attained?
- | | |
|--------------------------------------|------------------------------------|
| a. less than high school | e. attended college |
| b. attended high school | f. graduated from college |
| c. graduated from high school | g. has master's or doctor's degree |
| d. attended trade or business school | h. "don't know" |
31. What is the highest level of education your oldest brother (older than you) has attained?
- | | |
|--------------------------------------|-------------------------------------|
| a. less than high school | f. graduated from college |
| b. attended high school | g. has master's or doctor's degree |
| c. graduated from high school | h. "don't know" |
| d. attended trade or business school | i. Not applicable, no older brother |
| e. attended college | |
32. What is the highest level of education your oldest sister (older than you) has attained?
- | | |
|--------------------------------------|------------------------------------|
| a. less than high school | f. graduated from college |
| b. attended high school | g. has master's or doctor's degree |
| c. graduated from high school | h. "don't know" |
| d. attended trade or business school | i. not applicable |
| e. attended college | |
33. My father is engaged in the following occupation:
- | |
|---|
| a. Office work (cashier, clerk, bookkeeper, etc.) |
| b. Professional (doctor, lawyer, minister, teacher, etc.) |
| c. Executive (manages large business, industry, firm) |
| d. Laborer (janitor, farm hand, plumber's helper, waiter, truck driver, etc.) |
| e. Salesman (insurance, real estate, auto, store, etc.) |
| f. Skilled work (mechanic, welder, appliance serviceman, etc.) |
| g. Owns, rents, manages small business (store, station, cafe, etc.) |
| h. Owns, rents, manages farm or ranch |
| i. Military service |
| j. Disabled, retired, deceased, "don't know" |
34. My mother is engaged in the following occupation:
- | | |
|-----------------------------|--|
| a. Office work | f. Skilled work |
| b. Professional | g. Owns, rents, manages small business |
| c. Executive | h. Owns, rents, manages farm or ranch |
| d. Laborer (waitress, etc.) | i. Housewife |
| e. Saleslady | j. Disabled, retired, deceased, "don't know" |
35. In terms of income or wealth in my community, I think my family is:
- | | |
|-------------------------------|-------------------------------|
| a. considerably above average | d. somewhat below average |
| b. somewhat above average | e. considerably below average |
| c. average | |

STUDENTS WHO PLAN TO CONTINUE THEIR EDUCATION OR TRAINING THIS FALL, OR FOLLOWING MILITARY SERVICE ANSWER QUESTIONS 36 THROUGH 50.

36. I plan next year to go to the following kind of school beyond high school:
- | | |
|-----------------------------------|-------------------------|
| a. Vocational or technical school | e. Liberal Arts college |
| b. Junior college | f. University |
| c. Four-year college | g. "I don't know yet" |
| d. Business college | |
37. Is the school public supported? a. Yes b. No c. Not applicable
38. Is the school in Oklahoma? a. Yes b. No c. Not applicable

39-40. I plan to major in:

SCIENTIFIC FIELDS

- aa. Anatomy
- ab. Anthropology
- ac. Archaeology
- ad. Astronomy
- ae. Biology
- af. Botany
- ag. Chemistry
- ah. Entomology
- ai. Geography
- aj. Geology
- ba. Genetics
- bb. Mathematics & Statistics
- bc. Oceanography
- bd. Physics
- be. Physiology
- bf. Zoology

MEDICAL FIELDS

- bg. Dental Hygiene
- bh. Dentistry
- bi. Dietetics
- bj. Medicine
- ca. Mortuary Science
- cb. Nursing
- cc. Occupational Therapy
- cd. Optometry
- ce. Osteopathy
- cf. Pharmacy
- cg. Physical Therapy
- ch. Veterinary Medicine

ARTS AND HUMANITIES

- ci. Art & Sculpture
- cj. Architecture
- da. Creative Writing
- db. Drama & Theater
- dc. English & Literature
- dd. Foreign Language
- de. Journalism
- df. Radio - TV - Communications
- dg. Music
- dh. Philosophy
- di. Speech
- dj. Other Arts & Humanities

SOCIAL, RELIGIOUS & EDUCATIONAL FIELDS

- ea. Counseling & Guidance
- eb. Education Administration
- ec. Elementary Education
- ed. Home Economics
- ee. Library & Archival Science
- ef. Physical Education
- eg. Psychology
- eh. Secondary Education
- ei. Social Science
- ej. Social Work
- fa. Sociology
- fb. Special Education
- fc. Theology & Religion

ADMINISTRATIVE, POLITICAL & PERSUASIVE

- fd. Advertising
- fe. Business Administration
- ff. Law
- fg. Industrial Relations
- fh. Merchandising & Sales
- fi. Military
- fj. Political Science & Government
- ga. Public Administration
- gb. Public Relations

BUSINESS & FINANCE

- gc. Accounting
- gd. Business & Commerce
- ge. Economics
- gf. Finance
- gg. Secretarial Science

ENGINEERING, AGRICULTURE AND TECHNOLOGY

- gh. Agriculture
- gi. Engineering
- gj. Engineering Technology
- ha. Fish & Game Management
- hb. Forestry
- hc. Industrial Arts
- hd. Skilled Trades
- he. Soil Conservation Work
- hf. Other field not listed here
- hg. "I don't know yet"

41. I would prefer to attend the following kind of school beyond high school if it were located within commuter distance of my home:
- | | |
|-----------------------------------|-------------------------|
| a. Vocational or Technical school | e. Liberal Arts college |
| b. Junior college | f. University |
| c. Four-year college | g. Not applicable |
| d. Business college | |
42. Did you take the National Merit Scholarship Exams? a. Yes b. No
43. Did you take the CEEB (College Entrance Board Exams)? a. Yes b. No
44. Did you take the ACT (American College Tests)? a. Yes b. No
45. What part of your first year expenses do you expect to provide from summer earnings or part time work at school?
- | | |
|----------------------------|-------------------------|
| a. Less than \$250 | d. More than \$750 |
| b. Between \$250 and \$500 | e. None, not applicable |
| c. Between \$500 and \$750 | f. "don't know" |
46. How do you estimate the ability of your parents to help you go to college?
- | | |
|--------------------------|---|
| a. Can easily afford it | c. Can afford it, with sacrifices |
| b. I must pay my own way | d. Can help, but I will have to earn part |
47. Would you borrow money for educational expenses if you could pay it back on the installment plan after leaving college?
- a. Yes b. No c. "don't know"
48. In which of the following college-type experiences have you had the most practice in high school?
- Taking notes from lectures
 - Writing term reports
 - Taking final semester examinations during a scheduled test period
 - Making individual studies with oral reports
 - Long-term assignments
 - Planning own use of study time rather than required study period
 - Use of library
 - Other (Please specify on back of answer sheet on line No. 48)
 - None, no other, etc.
49. In which of the above have you had the next most practice in High School?
50. In which of the above have you had the next most practice in High School?

STUDENTS WHO PLAN TO ENTER THE WORLD OF WORK ANSWER QUESTIONS 51 THROUGH 61.

51.
 - I have applied, but do not have a job.
 - I have not applied for a job but plan to do so.
 - I have applied and have been accepted for a job.
 - I will continue in a job I now have.
52. I would like a job as: (Specify particular occupation on back of answer sheet)
- | | |
|-----------------|---------------------------------------|
| a. Office work | f. Skilled work |
| b. Professional | g. Own, rent or manage small business |
| c. Executive | h. Own, rent or manage farm or ranch |
| d. Laborer | i. Other |
| e. Sales | j. Not applicable, have a job |

53. I would expect to earn, per week, at least:
- | | | |
|-----------------|------------------|-------------------|
| a. \$15 to \$30 | d. \$60 to \$75 | g. \$105 to \$120 |
| b. \$30 to \$45 | e. \$75 to \$90 | h. \$120 or more |
| c. \$45 to \$60 | f. \$90 to \$105 | i. Not applicable |
54. I have, or will continue a job as: (Specify on back of answer sheet)
- | | |
|-----------------|---------------------------------------|
| a. Office work | f. Skilled work |
| b. Professional | g. Own, rent or manage small business |
| c. Executive | h. Own, rent or manage farm or ranch |
| d. Laborer | i. Other |
| e. Sales | j. Not applicable, don't have a job |
55. I will earn, per week, about:
- | | | |
|-----------------|------------------|-------------------|
| a. \$15 to \$30 | d. \$60 to \$75 | g. \$105 to \$120 |
| b. \$30 to \$45 | e. \$75 to \$90 | h. \$120 or more |
| c. \$45 to \$60 | f. \$90 to \$105 | i. Not applicable |
56. I have contacted the State Employment Service for help in getting a job.
- a. Yes b. No
57. If I wanted to continue my education or training, my parents could:
- a. Easily afford to pay my educational expenses
 b. Pay my expenses by sacrificing
 c. Be able to help with part of my expenses
 d. Give me no help at all
58. I would be interested in attending the following kind of school beyond high school if it were located within commuter distance of my home:
- | | |
|-----------------------------------|-------------------------|
| a. Vocational or Technical school | e. Liberal Arts college |
| b. Junior college | f. University |
| c. Four-year college | g. Not applicable |
| d. Business college | |
59. Have you ever considered continuing your education or training?
- a. Yes b. No
60. If no, would you consider it if you had the money? a. Yes b. No c. "don't know"
61. Would you borrow money for educational expenses if you could pay it back on the installment plan after finishing further education or training?
- a. Yes b. No c. "don't know"

LONG RANGE PLANS (All students answer)

62. If you are going to military service, what do you plan to do after fulfilling service requirements?
- | | |
|---|-------------------|
| a. Continue my education | d. "I don't know" |
| b. Get a job | e. Not applicable |
| c. Remain in the service and make it a career | |
63. If you are going to work, do you plan to resume your education or training in the future?
- a. Yes, go to college when money is available
 b. Yes, go to college when time is right
 c. Yes, go to vocational school at a later date
 d. No, get my education on the job
 e. No, become a housewife
 f. Not applicable

64. I hope eventually to be in the following vocation. (Specify particular occupation on back of answer sheet.)
- | | |
|-----------------|---------------------------------------|
| a. Office work | f. Skilled work |
| b. Professional | g. Own, rent or manage small business |
| c. Executive | h. Own, rent or manage farm or ranch |
| d. Laborer | i. Housewife |
| e. Sales | j. Other |
65. For the vocation I checked above, further education or training is:
- a. Necessary b. Desirable c. Unnecessary
66. In which of the following vocational experiences have you had the most practice in high school?
- | | |
|--|--|
| a. On-the-job training | |
| b. Office practice or other in-school clerical training | |
| c. A skill class which includes shop or actual work experience (welding, auto mechanics, carpentry, cosmetology, etc.) | |
| d. School vocational clubs | h. Project ownership |
| e. Record keeping | i. Other (Specify on back of answer sheet) |
| f. Public speaking | j. None, or no other |
| g. Occupational study and observation | |
67. In which of the above vocational experiences have you had the next most practice in high school?
68. In which of the above vocational experiences have you had the next most practice in high school?
- 69-70. Which of the following statements best describe your decision about future plans? (Check the one statement which seems most important to you.)
- aa. I would rather start earning money quickly, and learn on the job.
- ab. I (am) would be greatly dissatisfied to stop at my present level of knowledge.
- ac. College life and activities (like athletics) attract me very much.
- ad. College graduates get jobs with better pay.
- ae. The country needs more people who have highly developed skills and knowledge.
- af. College is a good place to meet a worthy life-mate.
- ag. Skilled workers get paid as much as most college graduates.
- ah. Further education beyond high school enables you to study more lines of work before deciding on a career.
- ai. Further education helps you live a happier, more complete life.
- aj. Studies beyond high school will make you work at a high intellectual level, and I like that.
- ba. Getting further education costs more than it is worth.
- bb. College graduates usually have the leadership positions.
- bc. Learning on a job is more practical than most school learning.
- bd. Persons who do not have college educations often make better leaders.
- be. College life broadens you socially, and develops your personality.
- bf. Success in life depends upon ability and effort, not amount of education.
- bg. Getting further education would be a waste of time for me.
- bh. Getting further education beyond high school has just been accepted; I have never thought of anything else.
- bi. Further education is necessary for entry into my vocation.
- 71-72. Which of the statements above seem next most important to you?
- 73-74. Which of the statements above seem next most important to you?

APPENDIX C

THE INSTRUMENT USED IN DON PHILLIPS' STUDY

1. Sex
 1. Male
 2. Female

2. Marital Status
 1. Married
 2. Single

3. How many persons other than yourself are dependent on you for their support?

4. Are you a veteran?
 1. Yes
 2. No

5. Did you live on a farm while attending high school?
 1. Yes
 2. No

6. Was the high school you last attended a public school?
 1. Yes
 2. No

7. What year did you leave or finish high school?
 19 _____

8. How old are you now?

9. What is your hobby?
 - A. _____
 Name hobby

 - B. Did this hobby influence your choice of training programs?
 1. Yes
 2. No

10. What is the name of the training program in which you are enrolled?
 1. Aeronautical Technology
 2. Chemical Technology
 3. Construction Technology
 4. Data Processing Technology
 5. Drafting & Design Technology
 6. Electrical Technology
 7. Electronics Technology
 3. Fire Protection Technology
 9. Mechanical Technology
 10. Metals Technology
 11. Petroleum Technology
 12. Radiation Technology
 13. Other _____
 Name program

- 11(A) How much education did you have before entering this program? (Circle the number which represents the highest grade you have completed.)

7	8	9	10	11	12
High School					
1	2	3	4		
College					
Other (specify) _____					

- (B) If you have completed some college work, how many semester hours have you completed? _____

12. Where did you rank in your high school graduating class?
 1. I am not a high school graduate.
 2. Top quarter of high school graduates
 3. Second quarter of high school graduates
 4. Third quarter of high school graduates
 5. Bottom quarter of high school graduates
 6. I do not know my rank in class.

13. About how many students were in your high school graduating class?
1. I did not graduate from high school.
 2. Less than 50
 3. At least 50 but less than 100
 4. At least 100 but less than 300
 5. At least 300 but less than 500
 6. At least 500
14. What is (or was) your father's occupation?
- _____
- _____
15. Circle the number which represents the highest school grade completed by your father.
- | | | | | | |
|--------------|----|----|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Grade School | | | | | |
| 7 | 8 | 9 | | | |
| Junior High | | | | | |
| 10 | 11 | 12 | | | |
| High School | | | | | |
| 1 | 2 | 3 | 4 | | |
| College | | | | | |
| _____ | | | | | |
| More | | | | | |
16. What is (or was) your mother's occupation?
- _____
- _____
17. Circle the number which represents the highest school grade completed by your mother.
- | | | | | | |
|--------------|----|----|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| Grade School | | | | | |
| 7 | 8 | 9 | | | |
| Junior High | | | | | |
| 10 | 11 | 12 | | | |
| High School | | | | | |
| 1 | 2 | 3 | 4 | | |
| College | | | | | |
| _____ | | | | | |
| More | | | | | |
18. What was your favorite subject in high school?
1. Mathematics
 2. Science
 3. English
 4. Shop
 5. History & Government
 6. Other _____
- Specify
19. Which high school subject did you like least?
1. Mathematics
 2. Science
 3. English
 4. Shop
 5. History & Government
 6. Other _____
- Specify
20. In which high school subject did you make your best grades?
1. Mathematics
 2. Science
 3. English
 4. Shop
 5. History & Government
 6. Other _____
- Specify
21. Which of the following mathematics courses did you complete in high school?
1. Arithmetic
 2. Algebra I
 3. Geometry
 4. Algebra II
 5. Trigonometry
 6. Other _____
- Specify
22. What is the highest education degree you expect to complete?
1. Certificate of Completion
 2. Associate degree
 3. Bachelor's degree
 4. Master's degree
 5. Doctor's degree

23(A) IF YOU EXPECT TO COMPLETE A BACHELOR'S DEGREE, in what field do you plan to study?

- 1. _____ 4-year technology
- 2. _____ Teacher Education
- 3. _____ Engineering
- 4. _____ Business
- 5. _____ Other
- 6. _____ I do not plan to complete a bachelor's degree.

(B) At which college do you plan to complete this degree? _____

24. Do you know of other Oklahoma schools which offer the same kind of training program in which you are now enrolled?

- 1. _____ Yes
- 2. _____ No

25. IF YOUR ANSWER TO NUMBER 24 IS YES, list the Oklahoma schools which you know have these programs.

26. Were you enrolled in a vocational course in high school?

- 1. _____ Yes
- 2. _____ No

27. IF YOUR ANSWER TO NUMBER 26 IS YES, in which vocational program(s) were you enrolled?

- 1. _____ Vocational agriculture
- 2. _____ Distributive education
- 3. _____ Trade & Industrial

 (Name of program)

4. _____ Technical _____

 (Name of program)

5. _____ Other _____

 (Name of program)

28. How many years were you enrolled in a vocational program?

- 1. _____ 1 year
- 2. _____ 2 years
- 3. _____ 3 years
- 4. _____ 4 years

29. What is the size of the town in which you last attended high school?

- 1. _____ Less than 1,000 people
- 2. _____ At least 1,000 but less than 5,000 people
- 3. _____ At least 5,000 but less than 10,000 people
- 4. _____ At least 10,000 but less than 20,000 people
- 5. _____ At least 20,000 but less than 50,000 people
- 6. _____ At least 50,000 but less than 100,000 people
- 7. _____ At least 100,000 people

30. How far is the town in which you last attended high school from this town?

- 1. _____ It is this town.
- 2. _____ Less than 25 miles
- 3. _____ At least 25 but less than 50 miles
- 4. _____ At least 50 but less than 100 miles
- 5. _____ At least 100 but less than 200 miles
- 6. _____ At least 200 miles

31. How close is the place where you presently live to the school?
1. I live on campus.
 2. Less than 1 mile away
 3. At least 1 but less than 5 miles away
 4. At least 5 but less than 15 miles away
 5. At least 15 but less than 30 miles away
 6. At least 30 but less than 60 miles away
 7. At least 60 miles away
32. How many hours per week do you expect to spend studying outside of class?
1. none
 2. 5 hours
 3. 10 hours
 4. 15 hours
 5. 20 hours
 6. More than 20 hours
33. How much do you expect the total costs (including everything--fees, books, housing, food, recreation, etc.) for the full length of training time to be?
1. Less than \$1,000
 2. At least \$1,000 but less than \$1,500
 3. At least \$1,500 but less than \$2,000
 4. At least \$2,000 but less than \$2,500
 5. At least \$2,500 but less than \$3,000
 6. At least \$3,000 but less than \$4,000
 7. At least \$4,000
34. Of the total expected costs for the training program, which you checked in question 33, what percent do you expect to pay from each of the following sources?
1. Personal savings
 2. Parents or guardian
 3. Loans
 4. Scholarships
 5. Part-time employment during school
 6. Summer employment
 7. G. I. Bill
 8. Other _____
Give source
35. How much trouble do you expect to have in getting enough money to make it through this program?
1. No trouble
 2. Some trouble, but I'll make it O.K.
 3. It will be difficult, but I can do it.
 4. It will be so difficult that I may not be able to finish.
 5. It will be so difficult that I probably will have to quit before finishing.
36. How did you first find out about this technical program?
1. An ad in a newspaper or magazine
 2. Information from the school through the mail
 3. Advertisement on TV or radio
 4. From a school representative who contacted me
 5. From friends of mine
 6. From a vocational teacher in high school
 7. From a high school teacher other than a vocational teacher
 8. From a counselor in high school
 9. From somebody in the Vocational Rehabilitation office
 10. I heard about it from _____

37. Did you ever visit with a counselor about possibilities of attending this program?
1. _____ Yes, I visited with a school counselor.
 2. _____ Yes, I visited with a U. S. Employment Service counselor.
 3. _____ Yes, I visited with a Vocational Rehabilitation counselor.
 4. _____ Yes, I visited with a counselor from the Bureau of Indian Affairs.
 5. _____ Yes, I visited with a Veterans Administration counselor.
 6. _____ No-I never visited with a counselor.
38. Was there a guidance counselor in the high school you last attended?
1. _____ Yes
 2. _____ No
39. IF THERE WAS A COUNSELOR IN THE HIGH SCHOOL YOU LAST ATTENDED, what did he tell you about enrolling in this program?
1. _____ He never talked to me about this program.
 2. _____ He generally encouraged me to attend this program.
 3. _____ He generally warned me not to enroll in this program.
 4. _____ He told me about this program but neither encouraged me to go nor discouraged me from attending.
40. Did you seriously consider attending this program while you were in high school?
1. _____ Yes
 2. _____ No
41. Did you make the final decision to attend this program while you were still in high school?
1. _____ Yes
 2. _____ No
42. Before you came here, did a representative from this school visit with you about this program at some place other than this school?
1. _____ Yes
 2. _____ No
43. Did you visit this school and look at its facilities before signing up?
1. _____ Yes
 2. _____ No
44. Who most encouraged you to attend this school?
1. _____ My parents
 2. _____ Relatives
 3. _____ Friends about my age or not much older
 4. _____ Friends of my family
 5. _____ A previous employer of mine
 6. _____ The people here at the school who operate it or work for it
 7. _____ A teacher or counselor in high school
 8. _____ Somebody in a government agency (such as Rehab, Indian Affairs, VA, etc.)
 9. _____ Nobody encouraged me-- I decided all by myself.
 10. _____ Other _____
Specify

45. When did you decide to go into the occupation for which you are now training?

1. _____ I really haven't decided--I'm still exploring.
2. _____ I decided just before coming here to school. (less than 1 month before)
3. _____ I decided more than 1 month but less than six months before.
5. _____ I decided at least one year before coming here.

46. Did you have a full-time paid job other than a summer job JUST BEFORE COMING to this school? (within one month)

1. _____ Yes
2. _____ No

NOTE: If your answer to the preceding question (number 46) was "no", skip to question no. 51

47(A) IF YOU HAD A FULL-TIME PAID JOB JUST BEFORE COMING TO THIS SCHOOL (OTHER THAN A SUMMER JOB), what was this job? _____

(B) How long did you have this job? _____

48. IF YOU HAD A FULL-TIME PAID JOB JUST BEFORE COMING TO THIS SCHOOL (OTHER THAN A SUMMER JOB), how interested were you in that job?

1. _____ Very interested--I hesitated to leave it.
2. _____ Interested--I like it better than most things I could be doing.
3. _____ Mildly interested--It was O.K. but no more so than many other jobs I might have had.
4. _____ Little interested--I knew other things I would rather be doing.
5. _____ Not interested--I didn't like it and was looking for some way to leave it.

49. IF YOU HAD A FULL-TIME PAID JOB JUST BEFORE COMING TO THIS SCHOOL, (OTHER THAN A SUMMER JOB), about how much money did you make a week?

1. _____ Less than \$50 a week
2. _____ At least \$50 but less than \$75 a week
3. _____ At least \$75 but less than \$100 a week
4. _____ At least \$100 but less than \$150 a week
5. _____ At least \$150 but less than \$200 a week
6. _____ At least \$200 a week

50. IF YOU HAD A FULL-TIME PAID JOB JUST BEFORE COMING TO THIS SCHOOL (OTHER THAN A SUMMER JOB), how closely related was it to the occupation for which you are now training?

1. _____ Very close--when I finish my training, I may go back to it.
2. _____ Close--the biggest difference is this training will let me work at a higher level.
3. _____ Somewhat related--there were some things similar to the occupation for which I am now training.
4. _____ Unrelated--it was an entirely different occupation than the one for which I am training.

51. Did you have a part-time or full-time paid job while going to high school?
1. Yes
 2. No
52. What do you feel your chances are of getting a job in the field for which you are now training when you finish this training program?
1. Excellent-I already know where I will be working.
 2. Good-this school places their graduates with little or no trouble.
 3. Fair-it seems some graduates get jobs but others do not.
 4. Poor-I guess it is strictly up to me to find my own job.
 5. I don't know-I have never considered it.
53. Could you get a job in this field without attending a training program such as this?
1. Yes
 2. No
54. How interested are you in the occupation for which you are now training?
1. Very interested-it is exactly what I want to do for a living.
 2. Interested-I think I will like it more than most things I might do.
3. Mildly interested-I think it will be O.K but no more so than many other things.
4. Little interested-there are other things I would rather be learning.
5. Not interested-I don't like it but there isn't much else for me to do now.
55. How confident are you that you can complete the program in which you are enrolled?
1. Very confident-I am sure I will finish.
 2. Confident-I think I will probably finish.
 3. Unsure-I may or may not finish depending on what happens.
 4. Doubtful-I probably will not finish.
 5. Very doubtful-I plan to quit as soon as I can find a good job.
56. Upon completion of this training program, how much money per month do you think your first job will pay?
1. \$300 to \$399 per month
 2. \$400 to \$499 per month
 3. \$500 to \$599 per month
 4. \$600 to \$699 per month
 5. Over \$700 per month
 6. I have no idea.
57. At the end of five years of employment how much money do you think you will make per month?
1. \$400 to \$499 per month
 2. \$500 to \$599 per month
 3. \$600 to \$699 per month
 4. \$700 to \$799 per month
 5. Over \$800 per month

58. Upon completion of this program, what do you plan to do?
1. _____ Seek employment in a technical occupation for which I am training.
 2. _____ Continue my formal education on a full-time basis
 3. _____ Enter military service
 4. _____ Other

- 59(A) If you expect to seek employment upon completion of this program, where do you prefer to work?
1. _____ In Oklahoma
 2. _____ In another state
 3. _____ I have no preference.

- (B) Where do you expect to find your best opportunity for employment?
1. _____ In Oklahoma
 2. _____ In another state
 3. _____ I don't know

APPENDIX D

LETTERS AND CARD USED IN THE STUDY

**OKLAHOMA STATE UNIVERSITY • STILLWATER**

The Technical Institute
FRontier 2-6211, Exts. 472, 7033

74074

Dear Sir:

Oklahoma State University in cooperation with the Governor of the State of Oklahoma is studying the post high school occupational education system of Oklahoma. We need to know what recent Oklahoma high school seniors are presently doing; particularly those who indicated they might be interested in technical education.

We are counting on you! Please take a few minutes to answer this short questionnaire. Enclose it in the pre-addressed and stamped envelope and mail it now.

This study is confidential. Your name will not be used in any publication or report.

Sincerely yours,


Dewey A. Yeager

DAY:cm
Enclosure


OKLAHOMA STATE UNIVERSITY • STILLWATER

 The Technical Institute
 372-6211, Ext. 472, 7033

74074

December 13, 1967

WE NEED YOUR HELP!

About two weeks ago you received a questionnaire designed to gather information that will help us design better schools and programs for you and your classmates.

We want to know what REALLY happened to YOU after you left high school last year and you are the only one who can give us the TRUE FACTS in this matter. We are interested in your comments so please take a few minutes to complete the questionnaire and return it in the addressed stamped envelope provided.

If you have already mailed the questionnaire, accept our "thank you" for assisting in this important project.

All we ask is that you complete the questions and send it back. Please do it RIGHT NOW! YOUR ANSWER IS IMPORTANT. Another questionnaire is enclosed in case you lost the first one.

Sincerely yours,

 Dewey Yeager
 Oklahoma State University
 Stillwater, Oklahoma

DAY:cl

*Please return this questionnaire
no matter what you are presently doing.*

FOLLOW-UP CARD

JUST A REMINDER!!

A few days ago you received an important questionnaire dealing with post high school occupational education in Oklahoma, which you were asked to complete and return in the enclosed self-addressed and stamped envelope.

We need your help. If you have already returned yours, please accept our thanks. If you have not, won't you take a few minutes to do so in order that we may get 100 per cent return? Thank you for your assistance.

/s/ Dewey
Dewey Yeager
Technical Institute
O.S.U. Stillwater,
Oklahoma

APPENDIX E

SUMMARY REPORT: STATE-WIDE RESULTS OF THE STUDY,
"PLANS OF HIGH SCHOOL SENIORS, 1967"

Summary Report: STATE-WIDE RESULTS OF THE STUDY, PLANS OF HIGH SCHOOL SENIORS, 1967

Total 1967 High School Graduates in Oklahoma ----- 34,580
 Total respondents (usable returns) to the questionnaire ----- 29,798
 Percentage-----86%

<u>Item</u>	<u>Number</u>	<u>Percent</u> ¹	<u>Item</u>	<u>Number</u>	<u>Percent</u>
AGE (29743) *			DISCUSSED PLANS WITH		
15	16	.05	TEACHERS OR COUNSELORS (28844)		
16	235	.79	Not at all	9,613	33.33
17	17,631	59.28	Some	15,638	54.22
18	10,520	35.37	Quite a bit	3,593	12.46
19	1,132	3.81			
20	143	.48	DISCUSSED PLANS WITH		
21+	62	.20	PARENTS (29238)		
SEK (28942)			Not at all	930	3.18
Male	15,223	52.60	Some	8,778	30.02
Female	13,710	47.37	Quite a bit	19,530	66.80
RACE (29620)			DISCUSSED PLANS WITH		
Indian	920	3.11	PEERS (29045)		
Negro	1,654	5.58	Not at all	1,051	3.62
White	26,934	90.93	Some	11,550	39.77
Other	108	.36	Quite a bit	16,442	56.61
MARITAL STATUS (29614)			DISCUSSED PLANS WITH		
Single	28,493	96.21	ADULT IN OCCUPATION (28995)		
Married	977	3.30	Not at all	10,703	36.91
Separated or divorced	138	.47	Some	12,965	44.71
PLANS THIS FALL (29397)			Quite a bit	5,323	18.36
Go to school	20,255	68.90	HAS MARRIAGE INFLUENCED		
Get a job	4,381	14.90	PLANS? (28335)		
Become an apprentice	204	.69	Yes	5,403	19.07
Go to military service	1,637	5.57	No	22,928	80.92
Work at home	384	1.31	INFLUENCE OF PROSPECTS		
No plan	2,025	6.89	OF MILITARY SERVICE ON		
Other	511	1.74	BOYS (14993)		
REAL DESIRE FOR THIS FALL (27237)			Attend college w/ROTC	2,389	15.93
Go to school	10,995	40.37	Made Uncertain	5,201	34.69
Get a job	3,453	12.68	Plan military career	946	6.31
Become an apprentice	264	.97	No influence	6,457	43.07
Enter military service	1,091	4.01	INFLUENCE OF BOYS PROSPECTS		
Work at home	486	1.78	OF MILITARY SERVICE ON		
To have no plans	783	2.87	GIRLS PLANS (14564)		
Other	333	1.22	Made uncertain	2,513	17.25
Not Applicable	9,832	36.10	No influence	11,703	80.36
			Enter service also	348	2.39

¹Percent does not always equal 100%
 because of unusable answers.

*Total usable answers for the question.

<u>Item</u>	<u>Number</u>	<u>Percent</u>	<u>Item</u>	<u>Number</u>	<u>Percent</u>
WHAT PARENTS WANT YOU TO DO (29501)			NUMBER OF CREDITS IN VOCATIONAL AREA (29267)		
Go to college	23,138	78.43	1 or 2	5,256	17.96
Go to work	2,138	7.25	3 or 4	8,502	29.05
Do neither	390	1.32	5 or 6	4,809	16.43
Don't care which	1,991	6.75	7 or 8	4,222	14.42
Don't care what	935	3.17	9+	2,536	8.67
Not applicable	906	3.07	Not Applicable	3,942	13.47
ACADEMIC AREA IN WHICH YOU COMPLETED MOST CREDITS (29206)			GRADE AVERAGE, 9-12 (29386)		
Communication	1,657	5.67	A	3,200	10.89
Social Studies	7,798	26.70	B	12,109	41.21
Math	5,807	19.88	C	12,893	43.87
Science	3,791	12.98	D	1,184	4.03
Foreign Language	2,232	7.64	FACTOR MOST RESPONSIBLE FOR YOUR BEING A SENIOR? (28798)		
Fine Arts	3,140	10.75	Desire for knowledge	7,140	24.79
None of above	4,781	16.37	Desire to graduate	11,053	38.38
NUMBER OF CREDITS IN AREA SELECTED ABOVE (29365)			Social life in School	138	.48
1 or 2	3,139	10.69	Attendance laws	134	.47
3 or 4	8,669	29.52	Parents insisted	393	1.36
5 or 6	7,081	24.11	Work Study Program	69	.24
7 or 8	4,983	16.97	Understanding teachers	161	.56
9+	1,798	6.12	Athletics, activities	439	1.52
Not Applicable	3,695	12.58	National Youth Corp	28	.10
ACADEMIC AREA, NEXT MOST CREDITS (29195)			Desire to succeed	8,279	28.75
Communication	1,456	4.99	Friends go to school	180	.63
Social Studies	5,658	19.38	Don't know, other	402	1.40
Math	6,147	21.05	FACTOR MOST RESPONSIBLE FOR DROPOUTS (29302)		
Science	5,836	19.99	Lack of interest	16,848	57.50
Foreign Language	2,338	8.01	Illness	448	1.53
Fine Arts	1,825	6.25	Financial need	1,046	3.57
None	5,932	20.32	Lack of ability	1,325	4.52
NUMBER OF CREDITS (29055)			Attendance	843	2.88
1 or 2	5,880	20.24	Curriculum	509	1.74
3 or 4	10,138	34.89	Family attitude	3,680	12.56
5 or 6	5,270	18.14	Non-acceptance, peers	1,445	4.93
7 or 8	2,163	7.44	Non-acceptance, teachers	635	2.17
9+	491	1.69	Marriage	958	3.27
Not applicable	5,113	17.60	Get away from home	932	3.18
VOCATIONAL FIELD IN WHICH YOU COMPLETED MOST CREDITS (28934)			Family responsibilities	524	1.79
Agriculture	3,050	10.54	WOULD YOU HAVE DROPPED OUT IF YOU COULD? (28194)		
Business	11,855	40.97	Yes	1,339	4.75
Distributive Educ.	665	2.30	No	26,839	95.15
Home Economics	4,158	14.37	DO YOU HAVE ANY PHYSICAL DISABILITIES? (28136)		
Trade & Industrial or Technical Education	5,192	17.94	Yes	3,071	10.91
None	4,011	13.86	No	25,057	89.06

<u>Item</u>	<u>Number</u>	<u>Percent</u>	<u>Item</u>	<u>Number</u>	<u>Percent</u>
NUMBER WHO HAVE HAD CONTACTS WITH VOC. REHABILITATION DIV.			FATHERS OCCUPATION (29297)		
Yes	1,152	37.51	Office Work	1,911	6.52
LEVEL OF EDUCATION ATTAINED BY FATHER (29381)			Professional	2,474	8.44
Less than High School	7,061	24.03	Executive	2,622	8.95
Attended High School	4,341	14.77	Laborer	5,211	17.79
High School Graduate	6,236	21.22	Salesman	1,671	5.70
Some College or Trade	5,392	18.35	Skilled Work	6,921	23.62
College Graduate	2,989	10.17	Has small business	1,705	5.82
Has advanced degree	1,353	4.61	Has farm or ranch	2,352	8.03
Don't know	2,007	6.83	Military	746	2.55
MOTHERS EDUCATION (29292)			Other	3,684	12.57
Less than high school	4,579	15.63	MOTHERS OCCUPATION (29478)		
Attended high school	5,753	19.64	Office work	3,997	13.56
High school graduate	9,544	32.58	Professional	1,769	6.00
Some college or trade	5,395	18.41	Executive	216	.73
College graduate	2,320	7.92	Laborer	2,596	8.81
Has advanced degree	473	1.61	Saleslady	1,139	3.86
Don't know	1,226	4.19	Skilled work	1,571	5.33
OLDER BROTHER(S)? (28837)			Has small business	735	2.49
Yes	13,017	45.14	Has farm or ranch	110	.37
No	15,820	54.86	Housewife	16,387	55.59
OLDEST BROTHERS EDUCATION (13,017)			Other	958	3.25
Less than high school	382	2.93	FAMILY INCOME COMPARED TO COMMUNITY AVERAGE (29062)		
Attended high school	1,593	12.24	Considerably above	1,226	4.22
High School Graduate	3,560	27.35	Somewhat above	6,611	22.75
Some college or trade	5,400	41.49	Average	18,515	63.71
College graduate	1,487	11.42	Somewhat below	2,323	7.99
Has advanced degree	445	3.42	Much below	378	1.30
Don't know	149	1.14	GRADUATES WHO PLAN FURTHER EDUCATION		
OLDER SISTER(S)? (28807)			TYPE SCHOOL PLANNED		
Yes	12,478	43.32	BEYOND HIGH SCHOOL (23832)		
No	16,329	56.68	Vocational-technical	2,920	12.25
OLDEST SISTERS EDUCATION (12,478)			Junior college	2,862	12.01
Less than high school	363	2.91	Four-year college	6,900	28.95
Attended high school	1,499	12.01	Business college	1,417	5.95
High school graduate	4,241	33.99	Liberal Arts College	791	3.32
Some college or trade	4,612	36.96	University	6,525	27.38
College graduate	1,391	11.15	Don't know	2,411	10.12
Has advanced degree	203	1.63	IS SCHOOL PUBLIC SUPPORTER? (23259)		
Don't know	168	1.35	Yes	15,520	66.73
			No	4,550	19.56
			Not applicable	3,184	13.69
			IS SCHOOL IN OKLAHOMA. (23602)		
			Yes	19,417	82.27
			No	2,660	11.27
			Not applicable	1,515	6.42

<u>Item</u>	<u>Number</u>	<u>Percent</u>	<u>Item</u>	<u>Number</u>	<u>Percent</u>
I PLAN TO MAJOR IN: (23233)					
SCIENTIFIC FIELDS					
Anatomy	14	.06	Psychology	396	1.70
Anthropology	31	.13	Secondary Education	625	2.69
Archaeology	44	.19	Social Science	190	.82
Astronomy	18	.08	Social Work	268	1.15
Biology	222	.96	Sociology	164	.71
Botany	26	.11	Special Education	130	.56
Chemistry	235	1.01	Theology & Religion	191	.82
Entomology	7	.03	ADMINISTRATIVE, POLITICAL		
Geography	38	.16	&PERSUASIVE		
Geology	56	.24	Advertising	71	.31
Genetics	13	.06	Business Administration	860	3.70
Math & Statistics	482	2.07	Law	430	1.85
Oceanography	57	.25	Industrial Relations	52	.22
Physics	135	.58	Merchandising & Sales	88	.38
Physiology	40	.17	Military	183	.79
Zoology	53	.23	Political Sci. & Gov.	161	.69
MEDICAL FIELDS			Public Administration	11	.05
Dental Hygiene	66	.28	Public Relations	98	.42
Dentistry	244	1.05	BUSINESS & FINANCE		
Dietetics	17	.07	Accounting	767	3.30
Medicine	487	2.10	Business & Commerce	1,000	4.30
Mortuary Science	42	.18	Economics	87	.37
Nursing	624	2.69	Finance	64	.28
Occupational Therapy	36	.15	Secretarial Science	1,255	5.40
Optometry	56	.24	ENGINEERING, AGRICULTURE		
Osteopathy	16	.07	& TECHNOLOGY		
Pharmacy	229	.99	Agriculture	525	2.26
Physical Therapy	108	.46	Engineering	1,289	5.55
Veterinary Medicine	227	.98	Engineering Technology	274	1.18
ARTS AND HUMANITIES			Fish & Game Manage.	124	.53
Art & Sculpture	353	1.52	Forestry	144	.62
Architecture	333	1.43	Industrial Arts	299	.99
Creative Writing	52	.22	Skilled Trades	860	3.70
Drama & Theater	129	.56	Soil Conservation Work	14	.06
English & Literature	296	1.27	Other fields not listed	977	4.21
Foreign Language	188	.81	Don't know yet	2,960	12.74
Journalism	209	.90	PREFERRED KIND OF SCHOOL		
Radio-TV-Communications	175	.75	COMMUTING DISTANCE? (23438)		
Music	529	2.28	Vocational-Technical	2,692	11.49
Philosophy	24	.10	Junior College	2,058	8.73
Speech	100	.43	Four-year College	4,739	20.22
Other Arts & Humanities	161	.69	Business College	1,238	5.28
SOCIAL, RELIGIOUS &			Liberal Arts College	632	2.70
EDUCATIONAL FIELDS			University	5,193	22.15
Counseling & Guidance	97	.42	Not applicable	6,884	29.37
Education Administration	110	.47	TOOK NATIONAL MERIT		
Elementary Education	1,085	4.67	SCHOLARSHIP EXAMS (23586)		
Home Economics	575	2.47	Yes	7,369	31.24
Library & Archival Sci.	66	.28	No	16,213	68.74
Physical Education	578	2.49			

<u>Item</u>	<u>Number</u>	<u>Percent</u>	<u>Item</u>	<u>Number</u>	<u>Percent</u>
<u>TOOK COLLEGE ENTRANCE BOARD EXAMS (23531)</u>			<u>WOULD LIKE JOB IN: (7101)</u>		
Yes	2,485	10.56	Office work	2,393	33.70
No	21,040	89.41	Professional	497	7.00
<u>TOOK ACT (AMERICAN COLLEGE TEST) (23491)</u>			Executive	106	1.49
Yes	16,020	68.20	Laborer	622	8.76
No	7,467	31.79	Sales	411	5.79
<u>PART OF FIRST YEAR COLLEGE EXPENSE YOU EXPECT TO EARN (23541)</u>			Skilled work	1,521	21.42
Less than \$250	2,951	12.54	Have small business	131	1.84
\$250-500	5,583	23.72	Have farm or ranch	208	2.93
\$500-750	2,512	10.67	Other	688	9.69
More than \$750	1,429	6.07	Not applicable	524	7.38
None	2,328	9.89	<u>WOULD LIKE TO EARN, PER WEEK (6972)</u>		
Don't know	8,738	37.12	\$15-45	646	9.27
<u>ABILITY OF PARENTS TO PAY COLLEGE EXPENSE (23399)</u>			\$45-60	1,242	17.81
Easily afford it	2,857	12.21	\$60-75	1,435	20.58
Can not help	3,567	15.24	\$75-90	1,192	17.10
Can afford it by sacrificing	6,328	27.04	\$90-105	912	13.08
Can help with part	10,643	45.48	\$105-120	423	6.07
<u>WOULD YOU BORROW FOR COLLEGE IF YOU COULD PAY AFTER GRADUATION (23501)</u>			\$120+	598	8.58
Yes	9,616	40.92	Not applicable	524	7.52
No	5,451	23.19	<u>CONTACTS WITH STATE EMPLOYMENT SERVICE FOR JOB ASSISTANCE (6931)</u>		
Don't know	8,428	35.86	Yes	732	10.56
<u>MOST PRACTICE, COLLEGE TYPE EXPERIENCES IN HIGH SCHOOL (23498)</u>			No	6,195	89.38
Take notes in class	6,750	28.73	<u>PARENTS ABILITY TO HELP IF YOU DESIRED FURTHER EDUCATION (6877)</u>		
Write term reports	2,468	10.50	Could easily afford it	803	11.75
Taking semester exams	5,364	22.83	Could pay by sacrificing	964	14.02
Individual study with oral reports	1,084	4.61	Could help with part	3,616	52.58
Long-term assignments	761	3.24	Could give no help	1,482	21.55
Planning own study time	4,029	17.15	<u>WOULD BE INTERESTED IN THE FOLLOWING TYPE SCHOOL IF IT WERE IN COMMUTING DISTANCE (6868)</u>		
Use of library	1,407	5.99	Vocational-technical	1,999	29.11
Other	184	.78	Junior College	549	7.99
None	1,451	6.17	Four-year College	397	5.78
<u>GRADUATES WHO PLAN TO ENTER JOBS WORK STATUS (7594)</u>			Business College	1,487	21.65
Have applied, no job	1,278	16.83	Liberal Arts College	147	2.14
Not applied, plan to	4,231	55.72	University	236	3.44
Have applied, have job	689	9.07	Not applicable	2,049	29.83
Continue in present job	1,388	18.28	<u>WOULD YOU CONSIDER FURTHER EDUCATION IF MONEY WAS AVAILABLE? (4608)</u>		
			Yes	2,204	47.83
			No	793	17.21
			Don't know	1,604	34.81

<u>Item</u>	<u>Number</u>	<u>Percent</u>	<u>Item</u>	<u>Number</u>	<u>Percent</u>
WOULD YOU BORROW FOR COLLEGE IF YOU COULD PAY AFTER GRADUATION (6711)			FOR MY LONG RANGE OCCUPATION FURTHER EDUCATION IS: (29058)		
Yes	2,177	32.44	Necessary	19,094	65.71
NO	2,170	32.33	Desirable	7,174	24.69
Don't know	2,355	35.09	Unnecessary	2,782	9.57
<u>Long Range Plans</u>			MOST VOCATIONAL EXPERIENCE PRACTICED IN HIGH SCHOOL WAS: (29088)		
IF YOU GO TO SERVICE, WHAT WILL BE YOUR PLANS AFTER RETURNING? (11480)			On-the-job training		
Continue education	4,234	36.88	Office-clerical	4,137	14.22
Get a job	3,633	31.65	Skill class or work	6,956	23.91
Remain in service	714	6.22	Vocational clubs	6,607	22.71
Don't know	2,899	25.25	Record keeping	1,157	3.98
IF YOU GO TO WORK DO YOU PLAN TO RESUME EDUCATION? (11148)			Public Speaking		
Yes when funds are available	3,552	31.86	Record keeping	834	2.87
Yes when time is right	2,350	21.08	Public Speaking	2,166	7.45
Yes, vocational school at a later date	2,347	21.05	Occupational study and observation	1,160	3.99
No, get on-job-training	2,899	26.00	Project ownership	506	1.74
No, become housewife	1,939	17.39	Other	909	3.13
Long Range Occupation (29013)			None		
Office work	4,889	16.85	None	4,656	16.01
Professional	10,995	37.90			
Executive	1,614	5.56			
Laborer	497	1.71			
Sales	414	1.43			
Skilled work	4,507	15.53			
Have small business	568	1.96			
Have farm or ranch	747	2.57			
Housewife	1,979	6.82			
Other	2,803	9.66			

VITA

Dewey Andrew Yeager

Candidate for the Degree of

Master of Science

Thesis: A STUDY OF OKLAHOMA HIGH SCHOOL SENIORS WHO INDICATED
ENGINEERING TECHNOLOGY AS THEIR EDUCATIONAL ASPIRATION

Major Field: Technical Education

Biographical:

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Education: Attended and graduated from high school in
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Professional Organization: Phi Eta Sigma, Oklahoma Vocational
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Professional Experience: Technical representative for Philco
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