

**THE ROLE PERCEPTIONS OF OKLAHOMA
TECHNICAL TEACHERS TOWARD
MINIMUM PROFESSIONAL
STANDARDS**

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CHAPTER I

THE PROBLEM

Introduction

During the past decade many changes have occurred in the field of education. One of the most significant occurrences that produced impetus for these changes was Russia's space program with the firing of Sputnik. The success of this surprise venture into space immediately created widespread concern and alarm in the education circles. It directed the attention of administrators and teachers alike to a reappraisal of the educational program. Then too the public, aroused from its apathy and inertia, instantly demanded a re-evaluation of the emphasis in the existing curriculum.

This resulted in transfer of emphasis to highly technical and specialized scientific fields, while providing the public with a feeling of national security and individual safety. The resulting new technology created a great need for specialized training. In addition, it spurred the

rate of increase of technology which amplified this need. Therefore, more and more emphasis was put on engineering and engineering support type training programs. The two-year curriculum which is classified as a support type program supplies the middle manpower group needed in the support of engineering activities.

Due to industry's need for technical personnel, technical teachers are and will be in great demand. The high salaries paid to competent technical personnel by industrial concerns tend to deplete the supply of technical teaching personnel. As Grant Venn (24) has stated in Man, Education and Work, published in 1964:

One of the greatest handicaps to the improvement and expansion of vocational-technical education is the desperate shortage of qualified teachers and administrators. Except in vocational agriculture and home economics, there is a noticeable lack of teacher preparation and in-service training programs and also difficulty in recruiting well-educated individuals with competence in a relevant occupational skill.

If technical education is to attract qualified educators, some form of professionalization must be established. Also if quality of instruction is to prevail in technical curricula, minimum required preparation must be established. To establish professional standards, technical educators must assume certain responsibilities. Lucien Kinney stated

that these responsibilities are to, "define the professional goals, compile a code of ethics, maintain quality of membership and promote economic welfare and security of the membership (13)."

This study will therefore measure the attitudes of the technical teaching personnel in Oklahoma toward selected minimum professional standards. The age, socio-economic background, type of institution, industrial experience, degree, teaching experience, and professional technical education coursework of the subjects was considered. The major question areas were: degree and coursework requirements; industrial experience; certification; and competency examinations.

Need and Purpose of the Study

In recent months there has been considerable discussion by The Oklahoma Technical Society concerning minimum professional standards. A committee was formed to recommend new criteria for technical teachers. Some of these new criteria were considered at the spring 1967 meeting of this Society. The criteria discussed at this meeting was used in construction of the majority of the questionnaire statements.

The information in this study is intended to be used by administrators and committees involved in establishing

minimum professional standards for technical teachers in Oklahoma. Thus, teachers and administrators can use this study as a means of establishing criteria and determine what influences technical teacher attitudes. By knowing how and what the technical teacher feels toward minimum criteria, a common starting ground may be established in building a professional organization.

A subsidiary purpose of this study is to clarify background characteristics of technical teachers. It is the general hypothesis of the writer that completion of professional technical education coursework will have the greatest influence on the attitudes of technical teachers toward minimum professional standards.

Questions to be Answered

The following questions are to be answered by this study:

1. Is there a significant difference in the attitudes of Oklahoma Technical Teachers toward minimum professional standards when the socio-economic background is considered?
2. Is there a significant difference in the attitudes of Oklahoma Technical Teachers toward minimum professional standards when age is considered?

3. Is there a significant difference in the attitudes of Oklahoma Technical Teachers toward minimum professional standards when the type of institution in which he is employed is considered?

4. Is there a significant difference in the attitudes of Oklahoma Technical Teachers toward minimum professional standards when years of teaching experience is considered?

5. Is there a significant difference in the attitudes of Oklahoma Technical Teachers when the years of closely related industrial experience is considered?

6. Is there a significant difference in the attitudes of Oklahoma Technical Teachers toward minimum professional standards when the highest degree attained is considered?

7. Is there a significant difference in the attitudes of Oklahoma Technical Teachers toward minimum professional standards when professional technical education coursework is considered?

Each of the above questions will be tested against each of the twenty statements contained in the questionnaire.

Hypotheses

Each of the following null hypotheses were tested sequentially against each of the twenty statements in the

questionnaire concerning minimum professional standards.

The null hypotheses tested were as follows:

1. There is no significant difference in the attitudes of upper and lower socio-economic background groups of technical teachers toward minimum professional standards.

2. There is no significant difference in the attitudes of upper and lower age groups of technical teachers toward minimum professional standards.

3. There is no significant difference in the attitudes of technical teachers, when grouped by type of institution, toward minimum professional standards.

4. There is no significant difference in the attitudes of technical teachers, when grouped by years of teaching experience, toward minimum professional standards.

5. There is no significant difference in the attitudes of technical teachers, when grouped by years of industrial experience, toward minimum professional standards.

6. There is no significant difference in the attitudes of technical teachers, when grouped by highest degree attained, toward minimum professional standards.

7. There is no significant difference in the attitudes of technical teachers, when grouped by completion of pro-

professional technical education coursework, toward minimum professional standards.

Definition of Terms

The term "attitude" for purposes of this study, refers to a state of mental and emotional readiness on the part of professionals to respond positively (favorably) or negatively (unfavorably) to certain objects, persons or situations (15).

The term "technical teacher" for purposes of this study is defined as a person teaching full-time or department heads in a curriculum designed for the preparation of technicians.

The term "related technical teacher" for purposes of this study is defined as a person teaching full-time typical subjects as mathematics, physics, tec., to students enrolled in a curriculum designed for the preparation of technicians.

The term "State Office of Vocational-Technical Education" for purposes of this study refers to the State Board of Vocational Education, Division of Technical Education. Permission was obtained to use this substitute title.

The term "industry-sponsored short course" for purposes of this study refers to a planned presentation by industry to present a product, method, practice, etc., for the purpose of updating technical personnel.

The terms "certification or registration" for purposes of this study refers to a document issued to technical teachers who have met the requirements of minimum professional standards.

The term "professional technical education courses" for purposes of this study refers to courses designed specifically to cover the philosophy, history and curriculum development of the technical field.

The term "population" for purposes of this study refers to the technical teachers involved in technical preparation programs in the State of Oklahoma. The basic list of teachers was compiled by the Division of Technical Education.

The term "closely related industrial experience" for purposes of this study refers to employment in industry, in a position that could be filled by technicians when graduated from the technical curriculum or filled after a period of internship.

Delimitations

The purpose of this study is to measure the attitudes of Oklahoma technical teachers toward minimum professional standards and to determine what influences these attitudes. The population of this study was limited to technical teaching personnel and department heads of technical curriculums in the state of Oklahoma. The curriculums involved are those defined as technical by the State Board of Vocational Education, Division of Technical Education. The curriculums involved, then, are those designed for the preparation of technicians to be employed in highly technical areas of industry.

The instrument used to gather data at best could reveal only what the individual was able and willing to communicate. This study did not consider personalities. The raw data of this study, therefore, is limited to that which the teachers revealed to the investigator in the instrument. Also it is recognized that the subjects might have had difficulty in revealing numerically what they feally felt and believed. The study is therefore limited to the concepts in the instrument.

It is further recognized that all respondents may not have answered the statements in the same frame of reference. A further limitation of this study is that statements may be misunderstood and incorrect answers may have been given inadvertently.

This study is limited to a period of time ending May 31, 1967. Questionnaires received after this date were not considered in this study.

Assumptions

For the purposes of this study the following assumptions are made:

1. That the recipients of questionnaires responded with frankness and honesty.
2. That attitudes are measurable and that they vary toward professional standards.
3. That measurable attitudes are common to the selected population.
4. That all statements and questions were understandable.
5. That all respondents answered in the same general frame of reference.

CHAPTER II

SELECTED REVIEW OF LITERATURE

Introduction

In this chapter a review of literature was made relative to attitudes and professional standards. While formal research in the measuring of attitudes has been widespread, this review deals only with selected sources pertinent to this study. The purposes of this study were best served by dividing the Review of Literature into the five parts as follows: need for technical personnel, present technical teacher requirements, professionalism, attitude measurement, and certification.

Need for Technical Personnel

The fact that the demand for technical personnel is critical and that this demand will increase is well known. With respect to technicians, employment requirements for technicians are expected to rise from nearly 845 thousand to 1.5 million between 1963 and 1975 (26). This seventy-eight percent increase is expected to result from continued

economic expansion especially in those areas where growing complexity of new products and processes will stimulate the demand for highly trained technical personnel. Growth will also stem from factors such as increasing utilization of technicians and expanding research and development activity, especially in the field of medical science.

From the previous information, it is obvious that unless drastic new methods of instruction are discovered, it would seem only logical that a similar increase in teaching personnel would also be necessary in training the needed technicians. As the demand for technical teachers increases, the highly competent persons must be spread rather thin and rigid requirements for them are a must.

Ross Henninger (11) surveyed supervisors in regard to faculty requirements. The findings of this survey were as follows:

As to present full-time instructors for technical institute programs, findings of the survey indicate that estimates of the average qualifications vary in a bimodal, or two cluster, distribution that seems to be characteristic of so many facets of technical institute education. Slightly more than half of the institutions reported that their average instructor held a master's degree (or had taken enough graduate study to be considered the equivalent). Another 35 percent reported attainment of the bachelor's by the average instructor. The remainder of the institutions were about equally divided among high school diploma, the associate degree or technical institute certificate, and an alternative of either the certificate or the bachelor's degree.

Henninger further states the desirable minimum qualifications for faculty depicted by his survey were:

. . . for both full-time and part-time instructors, nearly seven-eighths of the institutions of the survey sample which stated desirable minimum qualifications for faculty for technical institute programs wanted an average instructor to have either a bachelor's degree or a bachelor's plus a master's degree. About 60 percent would accept a bachelor's degree alone, while about 25 percent wanted both.

The average minimum experience qualifications desired by responding institutions is five years of industrial experience and no teaching experience. Most institutions would strongly desire a combination of teaching and industrial experience, but, faced with a choice of extremes, would prefer to accept a faculty candidate having pertinent industrial experience and "teach him to teach" rather than the reverse.

Present Technical Teacher Requirements

Technical personnel must be qualified if the individual programs are to meet their objectives. Upon completion of curriculum, graduates will enter industry in highly technical fields. These graduates can only meet their challenges if they have had adequately prepared competent instructors in their coursework.

The Policy Manual (26) of the State Board of Vocational Education, Division of Technical Education in Oklahoma, describes the general requirements for technical teachers as:

A technical teacher for technician preparatory classes shall either have a baccalaureate degree in engineering or be a graduate of a two-year technical program with a degree in industrial education or technical education, or have a baccalaureate degree with equivalent technical training and experience. An evaluation of a prospective technical teacher with an equivalent baccalaureate degree will be made to assure that the minimum essentials for teacher certification are met, approval will be given by the State Supervisor of Technical Education.

All persons with fewer than twelve semester hours of credit in professional technical education must complete these twelve semester hours by the end of their third year of employment as a technical teacher. Failure to comply with this provision will result in loss of all salary reimbursement for technical teachers and/or programs.

Within a five-year period preceding their first certification, technical teachers shall have had at least three years of industrial experience, including training period, in highly skilled occupations which they will teach and which require a knowledge and application of mathematics, science and engineering theory.

Professionalism

The question as to whether teaching is a profession has been debated many times. Education may well be the oldest of the professions. Educators were certainly required to train people who comprise the occupations we normally consider as professions, i. e., law, medicine, etc. It is certainly true that many who are adequately prepared to teach, ethical in their dealings with colleagues and students, and dedicated to the advancement of professional objectives, could be considered professional in their practices.

Many of those already in the vocation of teaching have an increasing tendency to assume that education is a profession. The growing professional consciousness of the educator, including teachers, administrators, and organiza-

tional leaders, is truly impressive (13).

Many who are concerned with the professional status of education are not concerned with the identification of an elite or privileged group. Professional status lends prestige, but what is even more important, it has responsibilities. The same factors that are used to identify a profession, impose on its membership special obligations to society, e. g., defining and maintaining professional standards, and developing and enforcing a code of ethics. There is, of course, a close relationship between professional services and public welfare. It is imperative that professional responsibilities be further examined and identified. Identification of professional responsibilities is not a simple matter.

Not all members of the teaching profession are willing to work toward professional maturity. Certain members admit they consider themselves public servants, to be at the mercy of the public, in all respects. No one will deny that the teacher is paid through public funds and, therefore, responsible to the public he serves. However, is his responsibility only that of a humble servant or that of an intelligent forceful member of a strong profession who shares in forming

educational objectives which will benefit his community and enhance his profession in the eyes of the public? The same people seem to think teaching is not a profession. As

Russell Cutshall states in his thesis: (4)

We can see that in the eyes of the public, the educators and administrators of the profession, as well as the professional members themselves, education lacks the maturity to be considered truly professional. The occupation of teaching is largely being referred to as a profession today by writers and educators in current publications and journals. However, this term is not used in the true sense of the word for which the definition is presented in this chapter.

He further defines a profession as: (4)

The work profession, as it will be used in this paper, may be defined as a group of individuals who devote themselves to a calling (i. e., that of medicine), who are organized into a unit of control which: (1) Determines uniform educational requirements for its undergraduate as well as graduate programs. (2) Arranges for a period of supervised experience for the individuals who enter the profession. (3) Maintains a professional organization. (4) Certifies its specialists. (5) Follows a code of professional ethics. (6) Licenses its practitioners. (7) Encourages research and experimentation. (8) Arranges for post graduate education so that practitioners can keep up-to-date. (9) Insists upon professional conduct from its members when dealing with clients, colleagues, and the public.

Identification of a profession is not easily accomplished. If one examines the existing professions, we find that services performed by their members satisfy an important social need. Competence is exercised in legal control. The members must also yield to priority of society in accord with a code of ethics.

The characteristics common to the profession and the membership responsibilities in a profession have been listed by Lucien Kinney as: (13)

An Occupation Becomes a Profession When:

- A. The social need for its services is acknowledged by its members as involving an obligation to society which takes precedence over the personal interests of the members and their clients.
 - 1. Hence, a profession defines explicitly its functions and its ethics.
 - 2. Adherence to the code of ethics is mandatory for continuance of membership.

- B. The required proficiencies are not mechanistic or stereotyped, but are based on competent diagnosis and adjusted to each situation.
 - 1. Hence, a profession is based on well-developed fields of science.
 - 2. Work procedures are evolved from systematically tested techniques.
 - 3. A protracted and highly organized program of preparation is required.

- C. Control of membership is needed to guarantee competence, ethically and technically.
 - 1. The general public is very unlikely to be content to judge the extent to which professional workers fulfill criteria A and B above.
 - 2. Hence, licensure is required, with standards defined by the profession and legalized by the state.

- D. Organizations and corporate activities are required to facilitate and insure the fulfillment of A, B, and C.

With the establishment of a profession, the membership must assume certain responsibilities. Lucien Kinney further defines these responsibilities as: (13)

Membership Responsibilities of a Profession

1. Providing for a high quality of membership.
 - 1.1 Recruitment of persons of high calibre.
 - 1.2 Testing the validity of procedures for selecting members of the profession.
 - 1.3 Developing effective programs of member preparation (pre-professional and professional).
 - 1.4 Encouraging experimental development of effective professional procedures.
 - 1.5 Encouraging in-service growth of professional competence.

2. Accumulating a body of validated professional procedures.
 - 2.1 Drawing upon and interpreting the contributions of the basic sciences.
 - 2.2 Encouraging research and professional problems as well as scientific problems.
 - 2.3 Systematic testing and validating of professional procedures.
 - 2.31 In the preparing institutions.
 - 2.32 In the field
 - 2.321 Publicize and evaluate new, original procedures.
 - 2.322 Facilitate exchange of information.
 - 2.323 Organize and compile this information
 - 2.4 Promoting the experimental attitude toward all professional procedures.
 - 2.41 Every teaching method, for example, viewed as a hypothesis, instead of taken as authoritatively sound or approved dogma.

3. Leadership in formulating and enforcing standards.
 - 3.1 Operational definitions of the performance functions of its members.
 - 3.2 Study and definition of professional goals, jointly with the public.
 - 3.3 Defining minimum requirements for licensure.
 - 3.4 Promoting better accreditation of professional institutions through State-Profession cooperation.
 - 3.5 Evolving and enforcing a functional code of ethics.
 - 3.6 Developing techniques for separating incompetent members from the profession.

4. Promoting the organizational life of the profession.
 - 4.1 Seeing that prospective members are adequately prepared for organizational membership.
 - 4.2 Achieving and maintaining appropriate economic conditions for work.
 - 4.3 Achieving and maintaining appropriate professional conditions for work (relations with the community).
 - 4.4 Achieving and maintaining appropriate professional conditions for work (relations between professional members).
 - 4.5 Cooperating among the several organizations within the profession in discharging the above responsibilities.

When we think of a profession today, we usually first think of the medical profession and then of the profession of law. Why do we think of these professions first? Why are they used as examples when the subject of professionalism is being discussed? It is because these professions have set up the machinery for the establishment and enforcement of professional practices. These are matured profes-

sions, operating on a national scale, demanding formal licensure and registration of their members, and accepting the responsibility for them.

The respect of a community toward a member of the medical profession indicates the trust it places on him. When a patient sees the letters, "M. D.", following a person's name, he cannot be assured that this person can cure his illness, but he can be assured that this person has completed a minimum of years in medical school and has met other rigid requirements necessary for admission to that profession. This confidence is not in him as a man, but as a doctor of medicine.

This cannot be said for teaching. It certainly is true that most of our teachers conduct themselves in as professional a manner when dealing with clients as do the members of any other profession. Many persons in the field of teaching are as well educated, if not better educated, than members of other professions.

Teaching cannot say it has chosen its members. It cannot say it has been entirely responsible for the education of its members. As yet, teachers are not licensed nor do all meet certification requirements. Teaching cannot

boast of adequate educational minimums demanded of its members, for many teachers in the field today are indeed poorly prepared.

With regard to the emphasis some educators place on the value of professional education, Ryans (18) states, "Those associated with licensing groups (e. g., state departments of education) believe good teaching to be the result of the teacher's training in certain college or university courses."

In showing the emphasis on professional training, Callis (5) found that scores on the Minnesota Teacher Attitude Inventory change favorably as students progressed through the first year of their professional education courses at the University of Minnesota. Whether this change was a function of the instruction or of the intellectual capacity of the student has not been determined. But nevertheless, as a result of coursework, there was an attitude change.

Attitude Measurement

The term attitude has been used many times in conjunction with beliefs and opinions. The three terms are very closely related, but it is possible to make a distinction

between them. A belief or opinion is usually used for rationalizations of attitudes. Therefore, beliefs and opinions typically involve the classification of things into categories. The definition of attitude that will be used in this paper is the tendency to respond positively (favorably) or negatively (unfavorably) to certain objects, persons or situations (15).

Numerous research studies which attempt to measure attitudes have developed their own definition of attitude. Thurstone and Chave (20) conducted a well-known study into the attitudes of people toward the church, race and internationalism. Their definition was: "Attitude denotes the sum total of a man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, and convictions about any specific topic."

How, then, may data concerning attitudes be collected? The two methods that are most often used are the interview and the questionnaire. At times, a combination of the two are used. Both of these methods have certain advantages and disadvantages. For example, the interview may result in ascertaining the subject's true attitude and not merely his oral expression of what may or may not be his true

attitude. The disadvantages of this method are as follows: (1) it is time consuming and can rarely be used to gather data from a large sample, (2) the interviewer must possess the skill to arrive at the person's true attitude since anonymity is not possible, (3) it may be difficult to interpret the data resulting from the interviews.

The advantages of the questionnaire lie in its speed and accuracy of interpretation. A disadvantage of the closed type questionnaire is that certain items may not be included that are equally important as those on the schedule. However, many respondents usually write in comments. These comments may then be interpreted and used in the study.

Various scales have been constructed as attitude measuring devices. Researchers in the past have used different methods of attitude measurement such as: the method of equal-appearing intervals, scalogram analysis, the scale-discrimination technique, latent structure analysis, the judgement method, and the method of summated rating. The type of scale used in this study is the Priori Scale. The first conception of this scale was a simple two point scale. For example, a "yes" or "no" response to a statement. A slight refinement has been used many times, which

involves adding qualifying statements to the main proposition, such as "always, sometimes, rarely, never"; or "strongly agree, agree, undecided, disagree, strongly disagree."

In measuring attitudes toward accreditation, Rubinowitz (17) found no significant difference in attitudes of teachers with bachelor's degrees and those possessing a higher level degree. However, a significant difference was statistically significant, for the attitudes toward accreditation who have earned recent college credits with those who have not. This would tend to emphasize the importance of teachers being encouraged to continue their education and would raise the question of recency of advanced degrees. She also found no significant relationship existing between attitudes of teachers toward accreditation when grouped by the number of years' teaching experience.

Certification

Is certification in education necessary? Many of the interests and attitudes toward this question are somewhat different between the general public and special groups. Much of the public as a whole view certification as a protection for quality in education. Some groups see certification as a bulwark of artificial requirements created by the teachers to establish and maintain a monopoly for themselves in education. Many examples can be pointed out

such as a famous renowned person in his field being unable to meet unrealistic certification requirements.

The educators of our profession, as well as the administrators, are undoubtedly more aware than its members of education's lack of maturity. The educators of the profession, for example, are the ones who see the pitiful attempts of many teachers to take courses, any courses, for certification purposes. Many are concerned only with credit-hours, not with a carefully planned educational program which will benefit them in a classroom.

What then seem to be the advantages of certification? If the required courses are carefully chosen, the individual teacher can professionally and personally prepare for his specialized field. This is especially true in specialized fields where the program of required preparation is rigorously prescribed. The specialization, however, can create problems for the preparing institutions. There is a trend toward recognition of the responsibility of the staff in the preparing institutions for the development of more efficient programs of preparation (12). This is more offset, however, by an increase in the multiplicity and specificity of the classification of positions.

CHAPTER III

DESIGN AND METHODOLOGY

The purpose of this study was to measure the attitudes of technical teachers toward selected minimum professional standards when background characteristics are considered. The seven background characteristics that were examined are: (1) age, (2) type of institution in which employed, (3) years of teaching experience, (4) years of closely related industrial experience, (5) socio-economic background, (6) highest degree received, and (7) professional technical education coursework. Statements to which technical teachers responded were designed around the major areas of: degree requirements, coursework requirements, industrial experience, certification or registration and competency examination.

The questionnaire is an instrument that is widely used by educational workers to obtain facts about current conditions and practices, and to make inquiries concerning attitudes and opinions (23). For the purposes of this study, the questionnaire was chosen as the means of collecting the

desired data for a relatively large geographical area of this study which was the state of Oklahoma. The instrument used to gather data was prepared at the Oklahoma State University. In the early stages of the study, a tentative questionnaire was used in a pilot study composed of six technical teachers. They were asked to review the form and make any comments or suggestions relative to the questionnaire as a whole or to any specific item. Many valuable suggestions and corrections resulted from this sample. Several of the subjects consulted at length with the investigator regarding possible clarifications and improvements. In revising the instrument, other interested specialists at the university were also consulted and asked to make comments and suggestions for improvement. The questionnaire was then revised and the suggestions were incorporated for improvement.

The questionnaire contained the title, "State Office of Vocational-Technical Education. This title was chosen because the pilot study members felt that more recipients of questionnaires would be less confused about the organization in question than if the correct name was given. The correct name for this organization is "State Board of Vocational Education, Division of Technical Education."

Permission was received from this division to use the substitute title.

The completed questionnaire consisted of two parts. Part one consisted of completion items to clarify the status and background of the individual respondent. Part two consisted of twenty statements identifying specific minimum professional standards and aspects concerning them. Each of the twenty statements were responded to by assigning a numerical value to it. The degree to which each respondent agreed with each item was indicated by this numerical value. Thus each item was assigned a numerical weight which indicated the value or intensity of attitude toward each statement. The agreement scale used was: (1) strongly agree, (2) moderately agree, (3) neutral or undecided, (4) moderately disagree and (5) strongly disagree.

A complete list of technical teachers was obtained from the State Board of Vocational Education, Division of Technical Education. This comprehensive list was carefully checked by the investigator and the Assistant State Coordinator of Area Vocational-Technical Education. A final list of ninety-eight technical teachers was compiled.

A copy of the questionnaire was mailed on April 20,

1967, to each of the ninety-eight technical teachers in the state of Oklahoma. Included with the questionnaire was a self-addressed stamped envelope to be used for returning the completed form. A follow-up letter was mailed on May 12, 1967, to all unreturned questionnaire holders. The deadline date chosen for accepting usable questionnaires was chosen to be May 31, 1967. Incomplete and late questionnaires were not considered in the final tabulation of this study.

The questionnaires were coded and organized to determine the reliability of the instrument. The method of data arrangement was the split half technique for reliability measurement. In this method the instrument was divided into two parts and a correlation coefficient was computed between the two parts of the instrument. A popular procedure used for dividing the instrument into two parts is the odd-even method. In this way, each respondent has two scores -- one for the odd and one for the even items. The coefficient calculated was the relationship of the two halves of the instrument. The formulas used in the computations were the Spearman-Brown Prophecy Formulas which are: $r_t = (2r_{oe}) / (1 + r_{oe})$ where $r_{oe} = xy / \sqrt{x^2 + y^2}$.

The data concerning technical teacher attitudes were

coded and punched on IBM cards by the writer. The data cards, along with a coding form, were submitted to the computer center at Oklahoma State University for computation of chi-squares.

The chi-squares test represents a useful method of comparing experimentally obtained results with those to be expected theoretically on some hypothesis (9). In many research activities the investigator may be interested in the attitudes of people, classified according to level of education, on some issue in which their responses could be categorized. This situation is amenable to analysis by means of the chi-square technique (23). The present study involved the measuring of attitudes of technical teachers toward minimum professional standards by comparing seven background variables. Although many of the cells in the tables had small quantities in several cells, chi-square could still be used in computations. This had been thought to create errors and cause meaningless computations in previous studies. However, recent research indicated the contrary. As Edwards (8) indicates in Techniques of Attitude Scale Construction, "Accumulating evidence indicates that the inaccuracies which may be introduced by

small expected numbers are not so serious as was formerly thought." For this reason, chi-square was selected as a means of analysis in this study.

CHAPTER IV

DATA AND RESULTS

The questionnaires were mailed on April 20, 1967. Within two days of the mailing day, ten percent of the responses had been returned. By the date the follow-up letter was mailed, May 12, 1967, seventy-two questionnaires had been returned. The follow-up letter produced seven more responses. These results are shown in Table I below.

TABLE I

QUESTIONNAIRE RESPONSES OF TECHNICAL TEACHERS

Total Mailed	Returned Without Follow-up Letter	Returned With Follow-up Letter	Total Returned
98	72	7	79

Examination of the returns indicated that care had been taken in completing the instrument. There were only eleven of the questionnaires that were incomplete in either part one or part two. The eleven questionnaires with missing data were not considered in this study. Therefore, there was a total of sixty-eight usable instruments.

The percentage of returned questionnaires (80.6%) in this study was very high. Percentage returns on questionnaires is usually much lower. Robert Travers (21) states that if the questionnaire is of interest to the recipient and if other conditions are favorable, one may expect a twenty percent return. He further states that if as many as three follow-up letters are sent to non-respondents, the returns may sometimes be increased to thirty percent, and only rarely do the returns reach forty percent. In this study, the follow-up letter produced approximately seven percent more returns. According to Travers then this seems likely and also, because such a large return was received before the follow-up letter was mailed.

The Data of the Study

An original inspection of data showed many table cells containing zeros and small numbers. It was therefore decided to combine the strongly agree and moderately agree categories into one category labeled agree, in all the tables. Also the moderately disagree and strongly disagree categories were combined into a single disagree category. The result eliminated many zeros in the table cells; however, a few zero cells remained. This is consistent with studies

in the past which have measured attitudes (26). All the computed data in each table was shown even though a few zeros tended to reduce the sensitivity of the chi-square. Edwards (8), as previously cited, indicated the error introduced may not be as great as once thought.

The sixty-eight usable questionnaires were processed by the computing center at Oklahoma State University. The processing included both tabulation of responses and statistical treatment of the data by the chi-square technique.

The treated data are presented in the tables in the following pages. Each table is presented and interpreted in this chapter. The significant differences are stated and the statement involved is explained. The tables, therefore, only include the statement numbers. A copy of the questionnaire appears in Appendix A. The reader may refer to this section if he is further interested in the individual statements.

Data in Table II are related to the age groups of the respondents. The division at age thirty-five is the mean age for all questionnaires returned. A study of the data given in the table reveals that no significant differences exist among the respondents with respect to their age and

attitude toward minimum professional standards at the point zero five level. The range in ages for returned questionnaires were from twenty-three to sixty-five.

Data in Table III shows the relationship for the type of institution in which the technical teachers are employed. A study of the data presented in the table reveals two significant differences among respondents with respect to their attitudes toward minimum professional standards. The significant differences, at the point zero five level, occur in statements one and two which involve the requirements of a bachelor's degree and a degree major in the subject area which they teach, respectively. The significant differences exist due to the vocational institution category disagreeing more with these two requirements.

Data in Table IV are related to the years of teaching experience of the technical teachers. A study of the data presented in the table shows no significant differences exist with respect to the respondent's attitudes toward minimum professional standards. A further examination of the table reveals that thirty-five technical teachers have had teaching experience for less than five years. This is approximately one-half the number of returned questionnaires. Therefore, the majority of technical

teachers are relatively new to this field.

There were eleven technical teachers with more than six and less than ten years of teaching experience. There were also twenty-two technical teachers with eleven or more years teaching experience.

TABLE II
 FREQUENCY DISTRIBUTION OF TECHNICAL TEACHERS' ATTITUDES
 TOWARD MINIMUM PROFESSIONAL STANDARDS
 IN TERMS OF AGE

Statement No.	Age Below 35			Ages 35 & Above			Chi- square
	A	N	D	A	N	D	
1.	28	1	2	32	2	3	.2727
2.	23	5	3	27	3	7	1.9054
3.	28	2	1	29	4	4	1.9701
4.	19	5	7	21	10	6	1.3245
5.	29	0	2	28	4	5	4.8113
6.	24	2	5	23	8	6	3.2077
7.	27	3	1	30	6	1	0.6334
8.	21	5	5	24	8	5	0.3657
9.	20	4	7	18	10	9	2.4161
10.	27	2	2	32	2	3	0.0951
11.	24	6	1	31	3	3	2.3800
12.	16	8	7	15	13	9	0.9507
13.	20	5	6	19	6	12	1.5996
14.	30	1	0	29	7	1	5.0267
15.	21	7	3	22	8	7	1.1696
16.	13	7	11	12	9	16	0.6919
17.	24	8	9	20	4	13	2.6103
18.	6	6	19	12	9	16	2.3460
19.	29	8	4	16	10	11	3.2419
20.	7	3	21	6	7	24	1.3581

A - Agree N - Neutral D - Disagree Chi-square=5.99 df=2
 No significant differences at .05 level
 Questionnaire in Appendix A.

TABLE III

FREQUENCY DISTRIBUTION OF TECHNICAL TEACHERS' ATTITUDES
TOWARD MINIMUM PROFESSIONAL STANDARDS IN TERMS
OF TYPE OF INSTITUTION WHERE EMPLOYED

State- ment No.	H. S.			J. C.			T. I.			Voc.			Chi- square
	A	N	D	A	N	D	A	N	D	A	N	D	
1.	14	0	1	17	1	1	27	1	1	2	1	2	*12.9232
2.	11	2	2	10	3	6	27	1	1	2	2	1	*15.0823
3.	10	3	2	16	1	2	27	1	1	4	1	0	6.8465
4.	10	3	2	9	5	5	19	6	4	2	1	2	3.7800
5.	12	1	2	15	1	3	27	1	1	3	1	1	5.2006
6.	12	0	3	10	6	3	22	3	4	3	1	1	7.8940
7.	11	3	1	18	1	0	25	3	1	3	2	0	6.5844
8.	9	2	4	10	4	5	23	6	0	3	1	1	9.2979
9.	11	1	3	6	7	6	20	4	5	1	2	2	11.9480
10.	12	1	2	17	0	2	25	3	1	5	0	0	4.5652
11.	13	0	2	14	3	2	24	5	0	4	1	0	6.9126
12.	8	3	4	10	7	2	13	8	8	0	3	2	7.1631
13.	9	2	4	9	4	6	18	5	6	3	0	2	2.5499
14.	15	0	0	13	5	1	27	2	0	4	1	0	9.8349
15.	11	2	2	10	5	4	19	7	3	3	1	1	2.3621
16.	4	4	7	7	5	7	13	5	11	1	2	2	2.7457
17.	13	0	2	8	4	7	11	7	11	2	1	2	10.8598
18.	5	2	8	7	3	9	5	9	15	1	1	3	4.1195
19.	12	3	0	9	5	5	13	8	8	1	2	2	8.8379
20.	3	2	10	6	3	10	4	5	20	0	0	5	5.2575

A - Agree N - Neutral D - Disagree Chi-square=12.6 df=6

*Significant Difference at .05 level

Questionnaire in Appendix A.

H. S. = High School

J. C. = Junior College

T. I. = Technical Institute

Voc. = Vocational

TABLE IV

FREQUENCY DISTRIBUTION OF TECHNICAL TEACHERS' ATTITUDES
TOWARD MINIMUM PROFESSIONAL STANDARDS IN TERMS
OF YEARS TEACHING EXPERIENCE

State- ment No.	1-5 Years			6-10 Years			11 Years-Above			Chi- square
	A	N	D	A	N	D	A	N	D	
1.	29	3	3	9	0	2	22	0	0	6.7823
2.	26	5	4	7	2	2	17	1	4	2.2665
3.	28	4	3	11	0	0	18	2	2	2.6264
4.	19	7	9	9	1	1	12	7	3	4.7564
5.	28	2	5	11	0	0	18	2	2	3.1538
6.	25	4	6	8	1	2	14	5	3	1.7327
7.	30	4	1	7	3	1	20	2	0	4.8533
8.	23	7	5	8	1	2	14	5	3	0.9483
9.	21	5	9	7	1	3	10	8	4	5.0973
10.	31	2	2	10	1	0	18	1	3	2.4759
11.	30	4	1	8	3	0	17	2	3	5.6767
12.	17	8	10	5	4	2	9	9	4	2.5064
13.	19	5	11	10	0	1	10	6	6	7.8770
14.	32	3	0	11	0	0	16	5	1	6.7452
15.	22	8	5	10	0	1	11	7	4	5.7497
16.	12	9	14	4	1	6	9	6	7	2.2939
17.	15	10	10	5	0	6	14	2	6	8.4463
18.	8	7	20	2	1	8	8	7	7	5.9626
19.	18	11	6	6	2	3	11	5	6	1.5466
20.	8	5	22	3	0	8	2	5	15	4.5230

A - Agree N - Neutral D - Disagree Chi-square=9.49 df=4
No significant differences at .05 level
Questionnaire in Appendix A.

Data in Table V are related to closely related industrial experience of the population. A study of the data given in the table shows three significant differences at the point zero five level. The first concerns statement number eleven, which involves the requirement of a minimum of two years industrial experience for technical teachers. The significant difference is attributed to the category of technical teachers with zero years industrial experience disagreeing with this statement.

Statement number sixteen which involves the requirement of beginning technical teachers to complete a competency examination in their technical specialty, is significant due to the attitudes of technical teachers in the one to five years industrial experience group. They tended to disagree with this statement.

A significant difference occurred in statement number twenty. This statement involves the requirement of technical teachers to become members of the Oklahoma Technical Society.

Data shown in Table VI are in terms of socio-economic background of technical teachers. There are no significant differences, in this table, at the point zero five level in

attitudes toward minimum professional standards. A further examination of the table reveals a large difference in the two categories. There are seventeen in the upper socio-economic category and fifty-one in the lower socio-economic category. The upper socio-economic category included professional, businessmen, and clerk and kindered worker occupations. The lower socio-economic group included manual workers, protective and service workers, and farmers. These classifications were taken from Warners' (25) book on Social Class in America. There are three times as many technical teachers from the lower socio-economic group than the upper socio-economic group.

TABLE V

FREQUENCY DISTRIBUTION OF TECHNICAL TEACHERS' ATTITUDES
TOWARD MINIMUM PROFESSIONAL STANDARDS IN TERMS
OF YEARS INDUSTRIAL EXPERIENCE

State- ment No.	0 Years			1-5 Years			6 Years-Above			Chi- square
	A	N	D	A	N	D	A	N	D	
1.	13	0	0	31	1	3	16	2	2	3.7562
2.	10	1	2	25	4	6	15	3	2	0.8584
3.	11	2	0	30	1	4	16	3	1	4.8589
4.	6	4	3	22	7	6	12	4	4	1.1952
5.	10	2	1	31	0	4	16	2	2	4.9645
6.	9	1	3	27	3	5	11	6	3	5.8916
7.	12	1	0	29	5	1	16	3	1	1.1999
8.	9	2	2	23	5	7	13	6	1	3.7371
9.	6	3	4	23	5	7	9	6	5	3.3176
10.	9	1	3	30	3	2	20	0	0	8.5177
11.	4	7	2	32	2	2	20	0	0	*28.7117
12.	8	5	0	12	13	10	11	3	6	8.2073
13.	8	3	2	21	5	9	10	3	7	1.9089
14.	11	2	0	32	2	1	16	4	0	3.5298
15.	9	3	1	24	6	5	10	6	4	2.5671
16.	5	6	2	12	4	19	8	6	6	*9.7727
17.	8	2	3	17	6	12	9	4	7	0.9954
18.	6	2	5	8	8	19	4	5	11	3.2725
19.	7	1	5	17	11	7	11	6	3	4.3753
20.	3	0	10	6	3	26	4	7	9	*10.5247

A - Agree N - Neutral D - Disagree Chi-square=9.49 df=4

*Significant Difference at .05 level

Questionnaire in Appendix A.

TABLE VI

FREQUENCY DISTRIBUTION OF TECHNICAL TEACHERS' ATTITUDES
TOWARD MINIMUM PROFESSIONAL STANDARDS IN TERMS
OF SOCIO-ECONOMIC BACKGROUND

Statement No.	Upper Occupation			Lower Occupation			Chi- square
	A	N	D	A	N	D	
1.	15	0	2	45	3	3	1.6000
2.	15	1	1	35	7	9	2.5333
3.	16	1	0	41	5	5	2.1754
4.	9	3	5	31	12	8	1.5897
5.	17	0	0	40	4	7	4.3743
6.	12	2	3	35	8	8	0.1707
7.	15	1	1	42	8	1	1.6452
8.	13	3	1	32	10	9	1.5886
9.	9	5	3	29	9	13	1.2256
10.	14	1	2	45	3	3	0.6408
11.	12	4	1	43	5	3	2.1118
12.	8	4	5	23	17	11	0.7409
13.	13	1	3	26	10	15	3.5960
14.	17	0	0	42	8	1	3.4576
15.	9	6	2	34	9	8	2.3132
16.	6	4	7	19	12	20	0.0257
17.	8	3	6	26	9	16	0.0998
18.	3	2	12	15	13	35	3.3651
19.	8	5	4	27	13	11	0.1820
20.	3	1	13	10	9	32	1.5886

A - Agree N - Neutral D - Disagree Chi-square=5.99 df=2

No significant differences at .05 level

Questionnaire in Appendix A.

Data shown in Table VII are in terms of highest degree attained. A study of this table reveals two significant differences at the point zero five level. One significant difference, number seventeen, involves the requirement for technical teachers to be registered or certified. This difference is attributed to the bachelor's degree category being more in agreement with this statement than the master's degree category. The next statement of significant difference involves statement number nineteen. This statement requires approval for registration or certification to be the responsibility of a committee of technical teachers and the state office of Vocational-Technical Education. The significant difference is attributed to the bachelor's degree category being more in agreement with this statement than the master's degree category.

The next significant difference involves statement number seventeen. This statement involves the requirement for technical teachers to be registered or certified. The significant difference is attributed to the master's degree category tending to disagree with this statement.

Data shown in Table VIII are related to two groups -- those who have completed professional technical education

courses and those who have not completed professional technical education courses. A study of this data reveals that there are four significant differences at the point zero five level. The first significant difference involves statement number three which would require technical teachers to complete coursework, in their technical specialty, beyond the courses required for the associate degree. The significant difference is attributed to the category of technical teachers who completed technical education coursework being more in agreement with this statement than those who have not.

TABLE VII

FREQUENCY DISTRIBUTION OF TECHNICAL TEACHERS' ATTITUDES
TOWARD MINIMUM PROFESSIONAL STANDARDS IN TERMS
OF HIGHEST DEGREE RECEIVED

Statement No.	Bachelor's			Master's			Chi- square
	A	N	D	A	N	D	
1.	32	3	3	38	0	2	2.5609
2.	27	7	4	23	1	6	4.3389
3.	31	4	3	26	2	2	0.3692
4.	22	7	9	18	8	4	1.4689
5.	31	2	5	26	2	2	0.7941
6.	27	6	5	20	4	6	0.6006
7.	31	6	1	26	3	1	0.5044
8.	26	7	5	19	6	5	0.2278
9.	22	8	8	16	6	8	0.2960
10.	35	0	3	24	4	2	5.3842
11.	31	5	2	24	4	2	0.0617
12.	18	9	11	13	12	5	2.5795
13.	24	5	9	15	6	9	1.2439
14.	36	2	0	23	6	1	4.9923
15.	27	7	4	16	8	6	2.3723
16.	17	10	11	8	6	16	4.2840
17.	23	8	7	11	4	15	*7.6423
18.	9	9	20	9	6	15	0.3783
19.	25	9	4	10	9	11	*8.8769
20.	8	5	25	5	10	20	0.3110

A - Agree N - Neutral D - Disagree Chi-square=5.99 df=2

*Significant Difference at .05 level

Questionnaire in Appendix A.

Statement number five, which would require technical teachers to complete coursework in mathematics beyond the coursework required for the associate degree, had a significant difference in attitudes toward it. The significant difference is attributed to teachers who completed technical education coursework being more in agreement with this statement.

The next significant difference concerns statement number six, which would require technical teachers to complete a minimum of six credit hours in professional technical education courses. The significant difference is again attributed to those teachers who have completed technical education coursework agreeing more than those who have not.

The next significant difference in this table concerns statement number nine which would require related technical teachers to complete a minimum of six credit hours of professional technical education courses. The significant difference again is attributed to the category of technical teachers who completed technical education courses. They agreed more with this statement. The category of teachers who did not complete technical education coursework were split between agree and disagree on this statement.

The correlation coefficient calculated to measure the reliability of the instrument was point six nine for the entire instrument. The split half method was used in the correlation computation.

In conclusion, considerable support for the general hypothesis of the writer, i. e., completion of technical education coursework, has the greatest influence on the attitudes of technical teachers toward minimum professional standards.

TABLE VIII

FREQUENCY DISTRIBUTION OF TECHNICAL TEACHERS' ATTITUDES
TOWARD MINIMUM PROFESSIONAL STANDARDS IN TERMS
OF TECHNICAL EDUCATION COURSEWORK

Statement No.	Tech. Ed.			No Tech. Ed.			Chi- square
	A	N	D	A	N	D	
1.	39	0	4	21	3	1	5.8448
2.	34	5	4	16	3	6	2.8124
3.	38	1	4	19	5	1	*6.4900
4.	29	7	7	11	8	6	3.7410
5.	39	0	4	18	4	3	*7.6511
6.	35	3	5	12	7	6	*8.7980
7.	38	3	2	19	6	0	4.9129
8.	32	7	4	13	6	6	4.0158
9.	29	7	7	9	7	9	*6.4646
10.	37	3	3	22	1	2	0.2676
11.	34	7	2	21	2	2	1.1676
12.	19	12	12	12	9	4	1.3383
13.	28	6	9	11	5	9	2.9426
14.	38	4	1	21	4	0	1.2190
15.	28	9	6	15	6	4	0.1780
16.	16	9	18	9	7	9	0.4788
17.	24	9	10	10	3	12	4.4969
18.	12	10	21	6	5	14	0.3247
19.	25	9	9	10	9	6	2.4344
20.	9	6	28	4	4	17	0.2659

A - Agree N - Neutral D - Disagree Chi-square=5.99 df=2

*Significant Difference at .05 level

Questionnaire in Appendix A.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to measure attitudes of Oklahoma Technical Teachers toward minimum professional standards. Their attitudes were measured by considering the following background characteristics: age, teaching experience, industrial experience, degree, socio-economic background, type of institution, and completion of technical education coursework. It was the general hypothesis of the writer, that professional technical education coursework would have the greatest influence on the attitudes of technical teachers toward minimum professional standards.

A questionnaire containing twenty pertinent statements was mailed to the ninety-eight technical teachers in Oklahoma, of which sixty-eight (80.6%) were returned and analyzed. The twenty statements in the questionnaire were analyzed in the form of agree, neutral and disagree

responses, by the chi-square statistical procedure.

Major Findings

Seven hypotheses were stated in chapter one and subsequently tested in this study. Each hypothesis and the pertinent findings relating to the significant responses of technical teachers to the twenty statements in the questionnaire, found in Appendix A, are listed below.

1. There is no significant difference in the attitudes of upper and lower socio-economic background groups of technical teachers toward minimum professional standards.

No significant differences were found for this hypothesis.

2. There is no significant difference in the attitudes of upper and lower age groups of technical teachers toward minimum professional standards.

No significant differences were found for this hypothesis.

3. There is no significant difference in the attitudes of technical teachers, when grouped by type of institution, toward minimum professional standards.

This hypothesis was rejected on the following statements: technical teachers should have a minimum of a bachelor's degree and; technical teachers should have a degree major in the subject area they teach.

4. There is no significant difference in the attitudes of technical teachers, when grouped by years of teaching experience, toward minimum professional standards.

No significant differences were found for this hypothesis.

5. There is no significant difference in the attitudes of technical teachers, when grouped by years of industrial experience, toward minimum professional standards.

This hypothesis was rejected on the following statements: technical teachers should have at least two years industrial experience closely related to the specialty they teach; beginning technical teachers should complete a competency examination in their technical specialty and; membership in Oklahoma Technical Society should be required for all technical teachers.

6. There is no significant difference in the attitudes of technical teachers, when grouped by highest degree attained, toward minimum professional standards.

This hypothesis was rejected on the following statements: technical teachers should be registered or certified and; approval for registration or certification should be the responsibility of a committee of technical teachers and the state office of vocational-technical education.

7. There is no significant difference in the attitudes of technical teachers, when grouped by completion of professional technical education coursework, toward minimum professional standards.

This hypothesis was rejected on the following statements: technical teachers should complete coursework, in their technical specialty, beyond the courses required for the associate degree; technical teachers should complete coursework in mathematics beyond the mathematics courses required for the associate degree; technical teachers should complete a minimum of six credit hours in professional technical education coursework; and related technical teachers should complete a minimum of six credit hours of professional technical education courses.

The sixty-eight technical teachers responded evenly between agree and disagree on the statement: beginning technical teachers should complete a competency examination

in their technical specialty. However, the majority responded unfavorably to the statement: approval for registration or certification should be solely the responsibility of the state office of vocational-technical education; and membership in the Oklahoma Technical Society should be required for all technical teachers.

In conclusion, the findings of this study indicate the importance of selecting personnel who possess favorable attitudes when staffing technical programs. From the data, it was evident that technical teachers in Oklahoma feel the need for establishment of minimum professional standards. Since professional technical education coursework has the greatest influence on technical teacher attitudes, rigid requirements should be established to insure completion of this type of coursework. Since industrial experience also had a marked influence on technical teacher attitudes, a program of continued industrial experience should be established for technical teachers.

Recommendations for Future Study

More than one-half of the technical teachers had less than five years of teaching experience. A study should be

completed to determine what influenced these Technical Teachers to enter the technical education field in Oklahoma.

Technical Teachers differed as to professional preparation. A study should be completed to determine the areas of preparation within the separate degrees.

A study should be completed to determine the attitudes of administrators of technical programs in Oklahoma toward minimum professional standards. The results of such a study could be compared to technical teacher attitudes analyzed in the present study.

The teachers with master's degrees differed in their attitudes from those with bachelor's degrees. A study should be completed to find out what influenced these attitudinal differences.

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QUESTIONNAIRE TO THE TECHNICAL TEACHERS IN OKLAHOMA

I. Background Information:

A. Academic Title (Rank) _____ Department _____

B. Age _____

C. Type of Institution in which you are teaching:

____ High School ____ Junior College ____ Tech. Inst.

____ Vocational

D. Total years teaching experience _____

E. Total years industrial experience closely related
to present teaching area.

F. Total years industrial experience _____

G. Father's occupation is (was) _____

H. Degree(s) received: (X)

Associate _____ School _____ Location _____

Major _____ Minor _____

Bachelors _____ School _____ Location _____

Major _____ Minor _____

Masters _____ School _____ Location _____

Major _____ Minor _____

I. Check (X) the following organizations of which you
are a member:

____ American Society for Engineering Education

____ Oklahoma Technical Society

____ American Technical Education Association

____ Oklahoma Education Association

____ American Vocational Association

____ Oklahoma Vocational Association

____ Other _____

____ Other _____

education courses.

- ___ 10. Technical teachers should have industrial experience closely related to the specialty they teach.
- ___ 11. Technical teachers should have at least two years industrial experience closely related to the specialty they teach.
- ___ 12. Industrial experience, for technical teachers, should be obtained through summer industrial employment.
- ___ 13. Technical teachers should have a minimum of one summer of industrial experience every three years.
- ___ 14. Technical teachers should attend industry sponsored short courses.
- ___ 15. Technical teachers should attend a minimum of one industry sponsored short course every two years.
- ___ 16. Beginning technical teachers should complete a competency examination in their technical specialty.
- ___ 17. Technical teachers should be registered or certified.
- ___ 18. Approval for registration or certification should be solely the responsibility of the state office of vocational-technical education.
- ___ 19. Approval for registration or certification should be the responsibility of a committee of technical teachers and the state office of vocational-technical education.
- ___ 20. Membership in the Oklahoma Technical Society should be required for all technical teachers.

APPENDIX B

April 19, 1967

Dear Technical Teacher:

Oklahoma State University, in cooperation with the Oklahoma Economic Development Foundation, is conducting a study concerning Technical Vocational Education in Oklahoma. The portion of this study that I am researching is the attitudes of technical teachers toward professional standards.

Enclosed you will find a questionnaire composed of two parts (1) background information, and (2) statements pertaining to various professional standards. Score each of the statements in part two by considering only the single concept stated. Completing the questionnaire will require only a few minutes. Please complete the questionnaire and return in the self-addressed stamped envelope at your earliest convenience.

Your name on the return envelope will only be used to determine which questionnaires have been returned. It will not be connected with the completed questionnaire in any way.

Thank you for your cooperation.

Sincerely,

Marvin A. Wittrock

May 16, 1967

Dear Technical Teacher:

You recently received a questionnaire from me concerning minimum professional standards for technical teachers. A small percentage of these questionnaires have not been returned. If you have not completed your questionnaire, please do so within the next two weeks. It is vitally important that your completed questionnaire be included in the final tabulation.

If you have already completed the questionnaire, kindly disregard this request.

Sincerely,

Marvin A. Wittrock

VITA

Marvin A. Wittrock

Candidate for the Degree of

Master of Science

Thesis: THE ROLE PERCEPTIONS OF OKLAHOMA TECHNICAL TEACHERS
TOWARD MINIMUM PROFESSIONAL STANDARDS

Major Field: TECHNICAL EDUCATION

Biographical:

Personal Data: Born at Okarche, Oklahoma, April 15, 1936, the son of Anthony H. and Elizabeth M. Wittrock.

Education: Graduated from Holy Trinity High School in 1954; attended Central State College, 1960; received the Bachelor of Science Degree from Oklahoma City University, with a major in Electronics Technology, May 1965; attended University of Illinois 1964-65; completed requirements for the Master of Science Degree, with a major in Technical Education in May, 1967.

Professional Experience: Electronics Technician, Catlin Aviation Co., Oklahoma City, Oklahoma, 1961-62; Instructor and Acting Head of Electronics Technology Department, Oklahoma State University, Oklahoma City, 1962-65; Instructor Electronics Technology, Oklahoma State University, Stillwater, Oklahoma, 1965-67.

Professional Organizations: American Society for Engineering Education; Oklahoma Technical Society; Phi Delta Kappa; American Technical Education Association.