

A COMPARABLE ANALYSIS OF SAFETY STANDARDS BEING
STRESSED IN VOCATIONAL AGRICULTURE PROGRAMS

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CHAPTER I

INTRODUCTION

Included in vocational agriculture training programs are extensive periods of instruction in school shops which offer training to students in mechanical areas such as tractor overhaul, electric arc welding, oxy-acetylene welding and cutting exercises, painting, and numerous other areas involving hands on experiences. As a direct result of this portion of the total program of vocational agriculture in Oklahoma, students are exposed to potentially dangerous environments each and every day as they seek to develop new skills under the direction and guidance of their vocational agriculture instructors.

The responsibility for both the safe environment of the shop or laboratory and the program of safety instruction rests entirely with the instructor. A total safety program is weakened by the absence of total involvement by the students, instructors, and administrators. Evaluation of shop safety programs is essential for establishing and maintaining safety programs which insures that individuals functioning in the shop are in a safe environment, are performing safely, and are equipped with the safety consciousness and related skills necessary to function outside the shop in his/her career as a productive citizen.

Statement of the Problem

Since the inception of the Occupational Safety and Health Administration (OSHA), there has been an increased concern for safety.

Many businesses and industries have come under close scrutiny and assessment of safety practices in many types of institutions has become commonplace.

With the new, more advanced equipment such as abrasive cut-off saws and other types of powerful machines, sophisticated welding equipment and other high technology items, instead of the predominantly hand powered tools which were once customary in vocational agriculture shops, the risk of serious and/or permanent bodily injury have increased immensely and thus has the need for safety. Although school shops were initially omitted from OSHA's manual, they will be considered during upcoming inspections. Oklahoma's vocational agriculture instructors have operated farm shop programs for many years with a great deal of success in shop safety. A need to identify factors which have contributed to this success should be recognized and efforts should be made to identify how far the agricultural mechanics safety programs in Oklahoma deviate from the guidelines required by OSHA, which would indicate sound or faulty safety programs.

It is desired that findings of this study will be of benefit in providing a positive look at the overall school safety programs in Oklahoma's vocational agriculture departments.

Purpose of the Study

The purpose of this study was to analyze and compare agricultural mechanics safety practices and policies of Oklahoma Vocational Agriculture instructors.

Objectives of the Study

To accomplish the purpose of this study, the following specific objectives were set forth:

1. To determine from the vocational agriculture instructors of Oklahoma who teach agricultural mechanics, the amount of importance they place on the selected areas of safety in their school shop programs.
2. To identify practices followed in developing safe work habits among students.
3. To determine those accidents which occur most frequently in agricultural mechanics programs.
4. To compare the five districts in Oklahoma and identify any areas of difference regarding safety education and practices which exist across the state.

Assumptions of the Study

For purposes of this study, it was assumed that in the case of multiple teacher departments, the teacher responding to the instrument expressed the views of the department pertaining to safety. It was further assumed that all instructors queried possessed the necessary knowledge pertaining to safety in school shop programs to contribute valid information sought by the instrument.

Definitions of Terms

For the purpose of this study the following definitions seemed pertinent and relevant:

Vocational Agriculture Shop Instruction: Refers to courses of instruction in high schools designed to train students for the numerous skills required on farm maintenance and industry.

OSHA: Occupational Safety and Health Administration, a governmental agency authorized to inspect work areas and make a determination as to the degree of safety which is afforded individuals employed or training in these environments.

Vocational Agriculture Mechanics/Shop Safety: Interchangeable terms utilized to describe safety in the vocational agriculture mechanics program.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The Williams-Steiger Occupational Safety and Health Act (32), which was enacted by Congress in December of 1970, took effect in April of 1971. The purpose of this Act, now known as OSHA, is to assure, so far as possible, that every working man and woman in the nation has safe and healthful working conditions so that we may preserve our human resources. With the introduction and passage of this Act, added impetus was placed on the organized accident prevention programs conducted in the school shops of our school systems.

Comparing present safety standards to those established by the Occupational Safety and Health Administration (OSHA), is there pertinent information to warrant recommendations for needed changes in areas considered to be lacking, or improve upon those areas which may be considered weak? OSHA was established to provide specific guidelines for safety which industry must comply with or be closed down or fined for negligence regarding their safety policies. As a result of these guidelines, OSHA hoped to protect and preserve our most valuable resource: mankind.

Salmon (29) raised several questions in his study in which he asks, "Are agricultural educators exerting enough influence on all phases of agricultural mechanics training for prospective vocational agriculture

teachers?" and "Is safety training offered which deals with considerations related to safe environments?" Salmon continued by saying that no particular group or party was assuming the responsibility to determine if curriculum pertaining to safety should be offered in agricultural mechanics.

Safety Instruction

Strong (31) stated that it should be the policy of each school shop training program to educate students in safety so well that each time the student commences a job assignment, the student's first thought is how to perform the job in a safe manner. Foster (13) tells us that the enforcement of safety can save lives and considerable sums of money. By enforcing safety rules and regulations, the shop teacher minimizes costly accidents, the need for replacing expensive shop equipment, and the possibility of lengthy as well as costly lawsuits.

According to the National Safety Council (26), safety problems in agricultural shops differ from other shop programs of a more specialized nature. This is primarily due to the wide variety of areas covered in agricultural mechanics and the limited time available for participants to learn each task assigned and its operation is limited. Brown (7) believed that if the shop instructor had a good maintenance program for shop equipment, a good environment was formed, and, as a result, a safe teaching-learning experience would exist.

Williams (34) indicated the total accident prevention program needs backing by school administrators. The total safety program must meet basic requirements, including:

1. Legal requirements for health and safety of students and staff and protection of equipment and facilities.
2. A carefully planned program of safety instruction in each subject area.
3. Periodic inspection of shop and facilities.
4. Reports analysis and follow up for all accidents (p. 57).

The learning and application of basic safety rules should be established as course objectives; however, the attitude of the instructor in instructing these rules and regulations will determine to a large extent the acceptance of safety by the students. The more student participation is required in maintaining a shop safety program, the greater the opportunity that program has in building a successful safety training program.

Williams (33) stated that safety instruction can provide evidence in behalf of the instructor if the instructor is challenged by a lawsuit. This can only be of benefit if the instructor has an established program in safety instruction and enforcement. Kigin (15) indicated that no matter how diverse the shop program may be in the areas of skills performed, it is the shop teacher's duty and moral responsibility to develop and enforce a strong safety instruction program.

First Aid

According to the National Safety Council (21), "The responsibility of the schools for the physical protection of its pupils has long been accepted by school people and by communities throughout the country" (p. 16). The National Commission of Safety Education (20) has reported that Safety Education has become an integral part of the school curriculum. In addition, from time to time to insure each state continues to

maintain high quality programs, state educational agencies will be queried to determine the amount of emphasis being placed on safety.

Pfister (27) conducted research in Minnesota and concluded that although shop teachers are in no position to give first aid, they must be reasonably competent in handling emergencies, knowing when and where to send individuals for emergency treatment and how to transport injured personnel to emergency facilities. Schools have the responsibility to provide a safe environment for students which goes beyond the typical classroom setting.

Only in the case of an emergency does a teacher have the legal right to administer first aid to a student. In all probability, first aid administered by a teacher would most likely be upheld in court if a critical emergency existed and more competent individuals were not available.

Strong (31) reports that, "Parental permission slips or waivers do not relieve the teacher of responsibility in accident cases" (p. 32). Court opinions have, in fact, ruled these as being invalid since the parent cannot have the right to absolve the teacher of negligence in the event of physical injury. The fact remains that a teacher is equally as liable for his own negligence whether or not he secures written permission for a pupil to enroll and participate in his program. In 1957, in a case titled Lehman vs. Los Angeles City Board of Education, the higher court of appeals ruled in favor of the plaintiff Lehman. The school, however, maintained that Lehman, who lost a hand, was a student and not an employee and as a result the school was not subjected to the requirement of a public liability act. The higher court explained

that even though the law was written to apply to employees under specific conditions, "the need for safety measures is the same in all situations where dangers exist" (p. 114).

The teacher must be fully aware of the policies of the school administration in relation to the procedures utilized in administering first aid. Many school administrators require instructors to maintain a certain level of competency in administering first aid before authorizing them to treat students.

According to the National Safety Council (22), each shop should be equipped with some type of first aid kit. The sophistication of this kit will be determined by the relatively close proximity of medical facilities and personnel. Strong (31) reports that, "the teacher should determine the policy of the school administration regarding first aid in shop areas" (p. 92). According to Bailey (3), shop instructors should possess a certificate verifying that they are trained in first aid procedures and have this certification updated every three years.

There are three types of first aid kits which could be used in the school shop situation:

1. Kits containing only essential items for immediate treatment of wounds or injuries.
2. Departmental kits containing larger quantities of first aid supplies for use in one large area.
3. Kits designed for utilization by competent medical personnel.

According to the National Safety Council (22), first aid kits should be located in a specific location in the shop which will be

designated and recognized by the color green. The white cross on a green background indicates that first aid materials are available at this location.

Accident Reporting

The National Safety Council (22) reports that the evaluation process is a continuous one involving many conscious individuals concerned for the adequacy of a safety program. Informal evaluation is of great value but is not sufficient as the sole approach to evaluation of the safety program. Periodic planning and assessment are important supplements as they cause the shop teacher and others to pause for an objective examination of the safety program and to proceed on a deliberate course to maintain and improve the program. In a study conducted by Pfister (27), a significant decrease in shop accidents was noticed in the second semester reporting of accidents as compared to the first semester in the middle of the year. The resulting evaluation of any shop safety program is of value only if, as a result of the evaluation, responsible action is taken for improvement. The identification of the implications of evaluation data for constructive and/or corrective action should be a routine topic of concern for the teacher and others. Bailey (3) reported that written records of all accidents in shop programs should be maintained and evaluated periodically to determine if negligence or chance was responsible for injury. Foster (13) indicated that an accident reporting system established on a 24 hour a day basis, provides the essential basic data for program emphasis, workmen's compensation, legal action, cost analysis, and accident prevention activities.

The National Safety Council (25) reports that an organized system of accident reporting and the analysis of these records can contribute materially to the success of the school shop and laboratory accident prevention programs. This method is only effective whenever facts pertaining to accidents are analyzed and a deduction of the underlying causes are ascertained.

Leaghty (18) reported that safety and accident reporting procedures in the schools of Oklahoma are inadequate due to the absence of records or reports maintained by teachers or required to be maintained by administrators. Leaghty's (18) study revealed that instructors would not be willing to submit data to a central collection agency so that these facts could be analyzed and positive suggestions for improvement be issued. However, his report indicated that a large percentage of instructors would like to receive information from an agency which could consolidate this type of information.

The purpose of a safety evaluation system is to improve and update the present situation concerning all safety and its awareness in school shop programs. Without evaluation systems much is left to chance.

Shop Maintenance

Williams (34) reported that, "The basic responsibility for the organization of the safety education program rests with the school administrators" (p. 78). Obviously, administrators can't maintain a constant watch on shop classes but must maintain and insure quality programs through their delegation of authority.

Albin (1) reports that New York, New Jersey, and Connecticut have enacted laws which favor the teacher in cases of shop accidents. The

Vermont Supreme Court rules:

A teacher owes his pupils a duty of supervision, and if there is a failure to exercise reasonable care in carrying out this duty, either in the commission or omission of an act which results in injury, the teacher is liable to the pupil (p.120).

No statute has ever been promulgated which states that teachers are immune to their responsibilities when carrying out their assigned teaching duties.

According to Hirschfelder (14), the majority of states have enacted laws which require industrial type safety equipment for all school shops and laboratories, but Oklahoma only requires School Laws 333 and 334 which require eye safety equipment and respirators, respectively. Biggam (6) reports that even today many laws regarding eye safety are very vague and need revision in order to improve safety in this area.

According to Bailey (3), the student body as a safety committee is a vital part of the safety program. The student committee must feel responsible for the general well being of all students involved and see that each individual is properly attired to handle each specific shop assignment, as well as being conscious of each individual's conduct and work habits while in the shop environment.

Krejcie (17) reported that the development of positive attitudes toward safety can take place only in a safe environment. Shop environments must be neat, clean, and orderly; and protective devices necessary for certain operations must be available and in working condition.

Smith (30) writes in regard to attitude that students should not be overburdened with a list of rules while working in the laboratory.

This promotes confusion which results in accidents. Barduson and Bear (4) stated that students involved in the planning and construction of shops develop a concept of "our shop" rather than "your shop." As a result of this safety becomes the rule rather than the exception.

OSHA (32) has deemed that each state will establish safety control programs which will meet or exceed their guidelines and will be partially funded by the federal government, but still be audited and inspected from time to time to insure each state continues to maintain a high quality program.

The National Safety Council (26) indicates that through the advent of an established safety program, the teachers and students enrolled in vocational agriculture will have continuous guidelines that will provide the students, teacher, and adults a safe and healthy environment in which to learn and work. The safety program is based on the premise that all accidents are preventable. The goal of this statement or observation is to have job performance without errors or accidents.

The National Safety Council (25) reports that teachers, administrators, safety coordinators and students should all be actively involved in the inspection process and planning of the safety program. In addition to the prevention of accidents, students become knowledgeable in safety skills which will be useful to them in their role as productive adults. According to Phipps (28), agricultural shops may be a safe or dangerous place to work. The ultimate decision as to whether it falls in the dangerous or safe category will rest with the intelligent actions of the individuals who work there.

Summary

Although data exist pertaining to industrial accidents, information pertaining to school shop programs is lacking which prevents an effective analysis of safety as it pertains to school programs. The research which has been conducted suggest that accident reporting procedures need improvement and periodic evaluations are recommended. This lack of data limits statewide safety programs to improve and update existing programs.

Students should be supervised early in the program to insure an effective exposure of safety has been offered to each student. This supervision is very dependent on the instructor's attitude and overall opinion of safety as it relates to his students and his safety program.

The safety and well being of all personnel enrolled, visiting or employed in a shop program, are the responsibilities of the school administration. This responsibility is often delegated to the shop instructor as the administrator cannot be present during operational hours. It is the administrator's responsibility to insure that those persons who are placed in a position of authority are knowledgeable in first aid procedures and are responsible, reliable individuals.

To successfully improve safety programs, accurate records must be maintained pertaining to accidents which occur in the instructional program. These records will provide valuable information which will assist the instructor in revising his safety program and help eliminate potential accidents simply by examining his files and determining if his data is a repetitive incident or a one-time accident.

Maintenance of shop facilities rests primarily with the individual instructors. It is their prerogative to involve their students in the program to the extent that the individual students take pride in their shop, and as a result, work as a concerned group to improve and maintain the facilities in which they work. This enthusiasm is promoted by the instructor's approach to the safety program and the example he sets in his performance of shop instruction.

CHAPTER III

METHOD AND PROCEDURE

The purpose of this chapter is to describe the methods and procedures used in developing and conducting this study. These were dictated by the purpose of the study, which was to analyze and compare agricultural mechanics safety practices and policies of Oklahoma Vocational Agriculture instructors.

Development of the Study

Prior to returning to Oklahoma State University, the writer spent extensive periods of time working in organized labor and the aviation segment of the military where safety was constantly at the front of each meeting. Safety schools were mandatory for workers and service personnel to constantly keep safety in the front and to reduce lost production and personnel injury to a minimum.

After returning to Oklahoma State University, the writer had the privilege of participating in a school shop safety course taught by Dr. Clyde Knight. During this course, many thoughts and questions were raised as to the quality of safety in vocational agriculture shop programs in Oklahoma. As a result of this course, the awareness of the need for sound safety practices in school shop programs were instilled in the writer.

The information for this study was compiled into two basic steps. The first task was to identify selected aspects of safety which are common to school shop programs in Oklahoma. This was accomplished by interviewing faculty members working in the areas of safety at Oklahoma State University. The second step was securing opinions of graduate students and vocational agriculture instructors on issues pertaining to school shop safety which should be included in this study. This task was accomplished by interviewing individuals and soliciting their opinions on selected topics of safety. The topics thus identified for study pertained to student instruction, first aid, shop maintenance, accident reporting, and personal views of the vocational agriculture instructors.

In order to achieve the completion of this study, the author had to accomplish the following tasks:

1. Determine a population.
2. Develop a suitable instrument for collecting data.
3. Collect data.
4. Determine the method to use in analyzing collected data.

Population

Because of the importance of safety in every school situation, the author felt it was essential to utilize every vocational agriculture department currently in existence in Oklahoma. By using this process, a population of 364 departments was utilized in this study effort.

Every vocational agriculture department in the state of Oklahoma received a questionnaire along with the cover letter explaining the

need for the study and why they were asked to participate in contributing data. Of a total of 364 vocational agriculture departments receiving questionnaires, 346 departments, representing 95.05 percent of all programs, responded to the instrument utilized in the conduct of this study.

Development of the Instrument

In developing the data collection instrument, the author solicited the aid of state department personnel, faculty members of Oklahoma State University working in the areas of safety, vocational agriculture instructors, and graduate students. Categories and statements secured from a review of literature and research by the researcher were combined with suggestions from the above groups of individuals into an initial draft of an instrument. This was submitted to representatives of these groups for their critical review. By carefully analyzing ideas and suggestions of this evaluation committee, a final draft copy was produced for submission to the population.

Data Collection

The questionnaire developed by the above described procedure was mailed to every vocational agriculture department in Oklahoma, along with a cover letter explaining the need for this information. All questionnaires were serialized to aid the author in sending out a follow up letter and questionnaire to those departments which had not responded within three weeks. The follow up letter and questionnaire were mailed to those departments which had not responded within the

specified time frame, again using serialization. After ten days, those departments which had not responded by mail were contacted by telephone. On the initial mailing of the questionnaire, 61 percent of the departments responded within the three week time frame. On the follow up after the first three week time frame, 28 percent of the departments responded. After another ten day lapse, telephone calls were made to those departments which had not responded, thus accounting for the remaining six percent of the respondents.

Analysis of Data

The population of this study included all vocational agriculture mechanics programs in the public school systems of Oklahoma. Because of this, it was felt that descriptive statistics showing the frequency of distribution and percentages would be most appropriate. For each of the areas on the questionnaire, a frequency count and percentage response for each category were calculated, along with the mean response by district and state. This gave the average response as well as an indication of the dispersion of the responses in each district and the state.

For interpretation of these mean responses, real limits were as follows: 4.5 and above for "of Extreme Importance"; 3.5 to 4.49 for "of High Importance"; 2.5 to 3.49 for "of Moderate Importance"; 1.5 to 2.49 for "of Little Importance"; and 0 to 1.49 for "of No Importance."

Summary

The final stage of the study effort involved the summarization and interpretation of findings and the drafting of recommendations for future actions.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

The primary purpose of this study was to obtain from vocational agriculture instructors in Oklahoma who provide agricultural mechanics classes to student, the importance and time spent on areas of safety provided in their agricultural mechanics instruction. These areas on shop safety included:

1. Student instruction.
2. Safety inspection.
3. First aid.
4. Accident reporting.
5. Shop maintenance.
6. Personal views.
7. Accident frequency.

In order to accomplish the purpose of the study, the following specific objectives were established:

1. To determine from the vocational agriculture instructors of Oklahoma who teach agricultural mechanics the amount of importance they place on the instruction of shop safety.
2. To determine those accidents which occur most frequently in agricultural mechanics programs.

3. To compare the five districts in Oklahoma and identify any areas of difference regarding safety education and practices which exist across the state.

The questionnaire was developed for this study to measure the above objectives.

Population

The population of this study included a respondent from each of the 364 vocational agriculture programs in Oklahoma. A completed instrument was received from teachers in 346 agricultural mechanics programs representing a 95.05 percent return. Two instruments were returned indicating that agricultural mechanics was not a part of that vocational agriculture curriculum. A copy of the instrument used to collect data for this study is included in Appendix B.

Descriptive Information of the Population

The experience level of the teachers participating in this study ranged from 1 to 38 years. Table I contains a description of the population in regard to the average number of years teaching experience, number of hours formal training in safety, "on-the-job training" in safety, and the number of hours of safety instruction taught in vocational agriculture programs by each district and the combination of the five districts into a total state figure.

Table I reveals that teachers from the Central District had the highest average number of years teaching experience, 14.7, while the

TABLE I

COMPARISON OF SAFETY INSTRUCTION IN VOCATIONAL
AGRICULTURE DEPARTMENTS BY DISTRICT

District	Average Years Teaching Ex- perience	Average Hours of Formal Safety Training	Hours of "On the Job" Safety Training	Hours of Safety Taught in Pro- grams
Central	14.7	2.48	3.83	12.58
Northeast	11.4	2.04	7.29	15.48
Northwest	6.7	3.18	12.18	16.81
Southeast	10.5	3.25	11.83	18.72
Southwest	7.9	3.08	9.97	12.44
Statewide	9.5	2.80	9.02	15.20

Northwest District teachers had the lowest with 6.7 years experience. Across the state of Oklahoma, the average number of years teaching experience was 9.5 years. Data in Table I indicate that vocational agriculture instructors in the Southeast District had the highest average hours of formal safety training, 3.25, and the Northeast District teachers with 2.04 hours of training were the lowest in the state. The average hours of formal safety training for the state was 2.80 hours of instruction. In the category pertaining to the number of hours of on-the-job training, the Northwest and Southeast districts were similar in total time with 12.18 and 11.83 hours, respectively, while the Central District was the lowest with 3.83 hours. The average number of hours for the state was 9.02 hours of on-the-job safety training. The Southeast District had the highest average, 18.72 hours, of safety instruction taught in agricultural mechanics programs. The Northwest and Northeast Districts taught an average of 16.81 hours and 15.48 hours, respectively. The Central District with 12.58 hours and the Southwest District with 12.44 hours were similar in hours of safety instruction taught in agricultural mechanics programs. The average hours of safety taught in all programs in the state was 15.20 hours.

Findings of this Study

The remaining portion of this chapter is an attempt to present and analyze data collected relative to the responses of the population by district and an overall statewide description of the population's emphasis on safety in their vocational agriculture programs. To

facilitate presentation of these findings, data will be analyzed under selected major topic headings.

Student Instruction

Data in Table II indicate that all areas were considered of high importance by vocational agriculture instructors in the Central District. Proficiency level achieved by all students prior to shop instruction received the lowest mean response with a 4.13 by all instructors in the Central District. Safety instruction on tools in shop had the highest mean response of 4.40.

Data in Table III indicated that vocational agriculture instructors in the Northeast District considered safety instruction on tools in shop and safety techniques demonstrated in shop to be of extreme importance. Standardized procedures in case of emergency and proficiency level achieved by all students prior to shop instruction were rated of high importance.

Data presented in Table IV indicated that the emphasis placed on safety instruction on tools in shop and safety techniques demonstrated in shop were considered of extreme importance. Standardized procedures in case of emergency and proficiency level achieved by all students prior to shop instruction were considered of high importance in shop programs by over 76 percent of the respondents. Standardized procedures in case of emergency had the lowest mean response of 3.90 for the category.

According to the data presented in Table V, the respondents indicated that all four categories were of high importance with the mean response

TABLE II

RESPONSES OF THE CENTRAL DISTRICT REGARDING
THE IMPORTANCE PLACED UPON STUDENT
SAFETY INSTRUCTION

Type of Instruction Offered	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Safety instruction on tools in shop (N-65).	34	52.3	23	35.38	8	12.3	0	0	0	0	4.40
Safety techniques demonstrated in shop (N-65).	34	52.3	22	33.84	9	13.84	0	0	0	0	4.38
Standardized procedures in case of emergency (N-65).	24	36.92	28	43.07	13	20.00	0	0	0	0	4.16
Proficiency level achieved by all students prior to shop instruction (N-65).	21	32.3	32	49.23	12	18.46	0	0	0	0	4.13

TABLE III

RESPONSES OF THE NORTHEAST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON STUDENT
SAFETY INSTRUCTION

Type of Instruction Offered	Distribution of Responses by Importance Category										No Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Safety instruction on tools in shop (N-75).	55	73.33	17	22.66	3	4.00	0	0	0	0	4.69
Safety techniques demonstrated in shop (N-75).	53	70.66	15	20.00	7	9.33	0	0	0	0	4.61
Standardized procedures in case of emergency (N-75).	41	54.66	17	22.66	17	22.66	0	0	0	0	4.32
Proficiency level achieved by all students prior to shop instruction (N-75).	39	52.00	18	24.00	15	20.0	3	4.00	0	0	4.24

TABLE IV

RESPONSES OF THE NORTHWEST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON STUDENT
SAFETY INSTRUCTION

Type of Instruction Offered	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Safety instruction on tools in shop (N-60).	42	70.0	13	21.66	5	8.33	0	0	0	0	4.61
Safety techniques demonstrated in shop (N-60).	38	63.4	17	28.3	5	8.33	0	0	0	0	4.55
Standardized procedures in case of emergency (N-60).	12	20.0	34	56.66	11	18.33	2	3.33	1	1.66	3.90
Proficiency level achieved by all students prior to shop instruction (N-60).	20	33.33	33	55.0	5	8.33	2	3.33	0	0	4.18

TABLE V

RESPONSES OF THE SOUTHEAST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON STUDENT
SAFETY INSTRUCTION

Type of Instruction Offered	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Safety instruction on tools in shop (N-73).	34	46.57	32	43.83	7	9.58	0	0	0	0	4.36
Safety techniques demonstrated in shop (N-73).	41	56.16	26	35.61	6	8.21	0	0	0	0	4.47
Standardized procedures in case of emergency (N-73).	20	27.39	40	54.79	13	17.80	0	0	0	0	4.09
Proficiency level achieved by all students prior to shop instruction (N-73).	14	19.17	44	60.27	12	16.43	3	4.10	0	0	3.94

ranging between 3.94 and 4.47 for all four statements. Over 91 percent of the respondents considered safety techniques demonstrated in shop to be of high importance.

Data presented in Table VI indicates that vocational agriculture instructors in the Southwest District considered the four areas included in student instruction to be of high importance in their programs. All statements in this category had a mean score above 3.84 which is well above the parameters established for the category "of high importance." Over 90 percent of the respondents indicated that safety techniques demonstrated in shop was of high importance.

Data in Table VII clearly indicates that vocational agriculture instructors consider the areas in student instruction to be of high importance. The factor, safety instruction on tools in shop had a mean response of 4.5 which placed it in the category of extreme importance. The lowest mean response, 4.06, was in the category proficiency level achieved by all students prior to shop instruction; however, this was still high enough to be considered in the category of high importance.

Safety Inspections

Table VIII indicates that thirty-two teachers from the Central District (49.23%) felt that safety inspections conducted by the instructor were of "extreme" importance, however, as indicated by the mean response of 4.27 this activity received an overall rating of "high" importance. Safety inspections conducted by student received a mean

TABLE VI

RESPONSES OF THE SOUTHWEST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON STUDENT
SAFETY INSTRUCTION

Type of Instruc- tion Offered	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No.		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Safety instruction on tools in shop (N-73).	39	53.40	26	35.60	8	11.00	0	0	0	0	4.42
Safety techniques dem- onstrated in shop (N-73).	33	45.20	33	45.20	7	9.60	0	0	0	0	4.35
Standardized procedures in case of emergency (N-73).	24	32.90	33	45.20	13	17.80	3	4.10	0	0	4.06
Proficiency level achieved by all students prior to shop instruction (N-73).	20	27.40	29	39.70	17	23.30	7	9.60	0	0	3.84

TABLE VII

OVERALL SUMMARY OF MEAN RESPONSES REGARDING THE
IMPORTANCE PLACED UPON "STUDENT INSTRUCTION"

Statement	<u>Central District</u>		<u>Northeast District</u>		<u>Northwest District</u>		<u>Southeast District</u>		<u>Southwest District</u>		<u>State</u>	
	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.
Safety instruction on tools in shop.	65	4.4	75	4.69	60	4.61	73	4.36	73	4.42	346	4.5
Safety techniques demonstrated in shop.	65	4.38	75	4.61	60	4.55	73	4.47	73	5.35	346	4.47
Standardized procedures in case of emergency.	65	4.16	75	4.32	60	3.90	73	4.09	73	4.06	346	4.11
Proficiency level achieved by all students prior to shop instruction.	65	4.13	75	4.24	60	4.18	73	3.94	73	3.84	346	4.06

TABLE VIII

RESPONSES OF THE CENTRAL DISTRICT REGARDING
THE IMPORTANCE PLACED UPON
SAFETY INSPECTIONS

Safety Inspections	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Conducted by you the instructor (N-65).	32	49.23	21	32.30	11	16.92	0	0	1	1.53	4.27
Conducted by students (N-65).	8	12.30	32	49.23	22	33.84	0	0	3	4.61	3.64
Conducted by administration (N-65).	7	10.76	14	21.53	34	52.30	8	12.30	2	3.07	3.24
Conducted by advisory committee (N-65).	7	10.76	13	20.00	23	35.38	19	29.23	3	4.61	3.03
Conducted by OSHA (N-65).	3	4.61	13	20.00	28	43.07	4	6.15	17	26.15	2.70
Conducted by fire department (N-65).	8	12.30	17	26.15	22	33.84	3	4.61	15	23.07	3.00
Conducted by insurance companies (N-65).	13	20.00	17	26.15	16	24.61	6	9.23	13	20.0	3.16
Conducted by peer instructors (N-65).	7	10.76	16	24.61	20	30.76	13	20.00	9	13.84	2.98

response of 3.64. This meant over 60 percent of the instructors considered it of "high" importance or greater. All other statements in this category received a mean response which placed them in the category of "moderate" importance. Safety inspections conducted by OSHA received the lowest mean response, 2.70, which placed it in the "moderate" importance category.

Data presented in Table IX indicate that 58 percent of the vocational agriculture instructors in the Northeast considered safety inspections conducted by the instructor to be of "extreme" importance. Safety inspections conducted by the students received a mean response of 3.89 which placed it in the category of "high importance." Safety inspections conducted by insurance companies and peer instructors shared the same mean response, 2.70, which placed them in the category of "moderate importance." The lowest mean response, 2.53 which is sufficient to be considered of "moderate" importance was computed for safety inspections conducted by OSHA.

Table X indicated that instructors in the Northwest District considered safety inspections conducted by fire departments and insurance companies to be of "little importance". The respective mean responses were 2.15 and 2.01.

The highest mean response, 4.18, which was of "high" importance was for safety inspections conducted by the instructor. Safety inspections conducted by the administration, advisory committee and peer instructors were considered to be of "moderate" importance and received mean responses of 3.03, 2.85 and 2.98, respectively.

TABLE IX

RESPONSES OF THE NORTHEAST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON
SAFETY INSPECTIONS

Safety Inspections	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Conducted by you the instructor (N-75).	44	58.66	28	37.33	2	2.66	0	0	1	1.33	4.52
Conducted by students (N-75).	24	32.00	23	30.66	25	33.33	2	2.66	1	1.33	3.89
Conducted by administration (N-75).	9	12.00	23	30.66	21	28.00	11	14.66	11	14.66	3.10
Conducted by advisory committee (N-75).	9	12.00	13	17.33	25	33.33	14	18.66	14	18.66	2.85
Conducted by OSHA (N-75).	8	10.66	11	14.66	22	29.33	6	8.00	28	37.33	2.53
Conducted by fire department (N-75).	5	6.66	15	20.00	32	42.66	12	16.00	11	14.66	2.88
Conducted by insurance companies (N-75).	3	4.00	12	16.00	33	44.00	14	18.66	13	17.33	2.70
Conducted by peer instructors (N-75).	12	16.00	13	17.33	14	18.66	13	17.33	23	30.66	2.70

TABLE X

RESPONSES OF THE NORTHWEST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON
SAFETY INSPECTIONS

Safety Inspections	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Conducted by you the instructor (N-60).	25	41.66	25	41.66	8	13.33	0	0	2	3.33	4.18
Conducted by students (N-60).	5	8.33	20	33.33	30	50.00	1	1.66	4	6.66	3.35
Conducted by administration (N-60).	0	0	25	41.66	21	35.00	8	13.33	6	10.00	3.03
Conducted by advisory committee (N-60).	0	0	20	33.33	20	33.33	11	18.33	9	15.00	2.85
Conducted by OSHA (N-60).	1	1.60	7	11.66	15	25.00	19	31.66	18	30.00	2.23
Conducted by fire department (N-60).	3	5.00	9	15.00	8	13.33	14	23.33	26	43.33	2.15
Conducted by insurance companies (N-60).	0	0	8	13.33	9	15.00	19	31.66	24	40.00	2.01
Conducted by peer instructors (N-60).	2	3.33	18	30.00	24	40.00	9	15.00	7	11.66	2.98

Table XI reveals that instructors in the Southeast District considered safety inspections conducted by the instructor, students, and the advisory committee to be of "high" importance in their program, as indicated by the respective mean responses of 4.41, 4.12, and 3.69. Safety inspections conducted by the administration, by fire departments, insurance companies, peer instructors, and OSHA were all considered to be of "moderate importance," with the range of the mean responses being from 3.47 to 2.50.

Table XII indicates that almost half (46.6%) of the vocational agriculture instructors in the Southwest District considered the statement, safety inspections conducted by the instructor, to be of "extreme" importance; however, the mean response of 4.36 placed it in the category of "high" importance when all responses were combined. The other statement in the category of "high" importance was safety inspections conducted by students, which had a mean response of 3.68. Safety inspections conducted by peer instructors received the lowest mean response, 2.08, which placed it in the category of "little" importance. Safety inspections conducted by administration, advisory committees, OSHA, fire departments, and insurance companies were all considered of "moderate" importance, with mean responses ranging from 2.6 to 3.23.

Table XIII was developed to summarize responses by district and thus permit a statewide comparison. Inspection of this data reveals that teachers across the state considered safety inspections conducted by the instructor and students to be of "high" importance, with these receiving mean responses of 4.36 and 3.78, respectively. The mean

TABLE XI

RESPONSES OF THE SOUTHEAST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON
SAFETY INSPECTIONS

Safety Inspections	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Conducted by you the instructor (N-73).	32	43.83	39	53.42	2	2.73	0	0	0	0	4.41
Conducted by students (N-73).	26	35.61	34	46.57	9	12.32	4	5.47	0	0	4.12
Conducted by administration (N-73).	3	4.10	42	57.53	20	27.39	3	4.10	5	6.84	3.47
Conducted by advisory committee (N-73).	15	20.54	34	46.57	15	20.54	5	6.84	4	5.47	3.69
Conducted by OSHA (N-73).	6	8.21	9	12.32	26	35.61	7	9.58	25	34.24	2.50
Conducted by fire department (N-73).	19	26.02	23	31.50	28	38.35	3	4.10	0	0	3.12
Conducted by insurance companies (N-73).	5	6.84	18	24.65	35	47.94	11	15.06	4	5.47	3.12
Conducted by peer instructors (N-73).	4	5.47	13	17.80	29	39.72	21	28.76	6	8.21	2.83

TABLE XII

RESPONSES OF THE SOUTHWEST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON
SAFETY INSPECTIONS

Safety Inspections	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Conducted by you the instruction (N-73).	34	46.6	32	43.8	7	9.6	0	0	0	0	4.36
Conducted by students (N-73).	14	19.2	40	54.8	11	15.1	8	10.9	0	0	3.68
Conducted by administration (N-73).	8	10.9	23	31.5	24	32.9	14	19.2	4	5.5	3.23
Conducted by advisory committee (N-73).	8	10.9	18	24.7	23	31.5	20	27.4	4	5.5	3.08
Conducted by OSHA (N-73).	7	9.6	14	19.0	13	17.8	26	35.6	13	17.8	2.67
Conducted by fire department (N-73).	11	15.0	22	30.1	15	20.5	23	31.5	2	2.7	3.23
Conducted by insurance companies (N-73).	3	4.1	11	15.1	26	35.6	22	30.1	11	15.1	2.60
Conducted by peer instructors (N-73).	3	4.1	22	30.1	18	24.7	17	23.3	13	17.87	2.08

TABLE XIII

OVERALL SUMMARY OF MEAN RESPONSES REGARDING THE
IMPORTANCE PLACED UPON "SAFETY INSPECTIONS"

Safety Inspections	Central District		Northeast District		Northwest District		Southeast District		Southwest District		State	
	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.
Conducted by you the instructor.	65	4.27	75	4.52	60	4.18	73	4.41	73	4.36	346	4.36
Conducted by students.	65	3.64	75	3.89	60	3.35	73	4.12	73	3.68	346	3.78
Conducted by administration.	65	3.24	75	3.10	60	3.03	73	3.47	73	3.23	346	3.23
Conducted by advisory committee.	65	3.03	75	2.85	60	2.85	73	3.69	73	3.08	346	3.11
Conducted by OSHA.	65	2.70	75	2.53	60	2.23	73	2.50	73	2.67	346	2.53
Conducted by fire department.	65	3.00	75	2.88	60	2.15	73	3.12	73	3.23	346	3.04
Conducted by insurance companies.	65	3.16	75	2.70	60	2.01	73	3.12	73	2.60	346	2.74
Conducted by peer instructors.	65	2.98	75	2.70	60	2.98	73	2.83	73	2.08	346	2.85

responses for safety inspections conducted by administration, advisory committee, OSHA, fire departments, and insurance companies ranged between 2.53 to 3.23, which placed all of them in the category of "moderate" importance.

First Aid

In Table XIV, 23 instructors (35.85%) in the Central District considered the statement, medical attention readily available, to be of "extreme" importance. Students knowledgeable in first aid received a mean response of 3.5, which indicated instructors considered it to be of "high" importance. All other statements received a mean response greater than 3.43, which placed them in the category of "moderate" importance.

Data in Table XV indicated that all statements pertaining to the amount of importance placed upon the area of "first aid" were considered to be of "high" importance. Medical attention readily available received the highest mean response (4.29), while the statement receiving the lowest mean response (3.58) was first aid station designated in shop.

Table XVI indicates that 21 instructors (35.0%) in the Northwest District considered the statement, medical attention readily available, to be of "extreme" importance; however, the mean response (4.18) placed it in the category of "high" importance. School medical facilities accessible, students knowledgeable in first aid, first aid station designated in shop, and first aid supplies available in designated areas were statements receiving mean responses ranging

TABLE XIV

RESPONSES OF THE CENTRAL DISTRICT REGARDING
THE IMPORTANCE PLACED UPON FIRST AID

First Aid	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Medical attention readily available (N-65).	23	35.85	23	35.85	13	20.00	3	4.61	3	4.61	3.92
School medical facilities accessible (N-65).	13	20.00	22	33.84	14	21.53	12	18.46	4	6.15	3.43
Students knowledgeable in first aid (N-65).	14	21.53	18	27.69	23	35.38	7	10.76	3	4.61	3.50
First aid station designated in shop (N-65).	12	18.46	24	36.92	14	21.53	11	16.92	4	6.15	3.44
First aid supplies available in designated area (N-65).	13	20.00	24	36.92	13	20.00	11	16.92	4	6.15	3.47

TABLE XV
 RESPONSES OF THE NORTHEAST DISTRICT REGARDING
 THE IMPORTANCE PLACED UPON FIRST AID

First Aid	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Medical attention readily available (N-75).	32	58.66	35	46.66	6	8.00	2	2.66	0	0	4.29
School medical facilities accessible (N-75).	21	28.00	31	41.33	14	18.66	3	4.00	6	8.00	3.77
Students knowledgeable in first aid (N-75).	22	29.33	18	24.00	33	44.00	2	2.66	0	0	3.80
First aid station designated in shop (N-75).	16	21.33	32	42.66	16	21.33	2	2.66	9	12.00	3.58
First aid supplies available in designated area (N-75).	23	30.66	34	45.33	13	17.33	3	4.00	2	2.66	3.97

TABLE XVI

RESPONSES OF THE NORTHWEST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON FIRST AID

First Aid	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Medical attention readily available (N-60).	21	35.00	32	53.33	4	6.66	3	5.00	0	0	4.18
School medical facilities accessible (N-60).	6	10.00	34	56.66	9	15.00	6	10.00	5	8.33	3.50
Students knowledgeable in first aid (N-60).	7	11.66	31	51.66	21	35.00	1	1.66	0	0	3.73
First aid station designated in shop (N-60).	14	23.33	20	33.33	13	21.66	12	20.00	1	1.66	3.56
First aid supplies available in designated area (N-60).	22	36.66	22	36.66	13	21.66	2	3.33	1	1.66	4.03

between 3.50 to 4.03, which placed them all in the category of "high" importance.

According to the data found in Table XVII, 45 instructors (61.64%) considered the statement, students knowledgeable in first aid, to be of "extreme" importance; however, the mean response (4.46) placed it in the category of "high importance." All statements in Table XVII were considered to be of "high" importance, with the statement, first aid supplies available in designated area, receiving the lowest mean response (3.63) for the category.

Table XVIII indicates that the instructors in the Southwest District considered all statements in the "first aid" category to be of "high" importance. Thirty instructors (41.1%) considered the statement, medical attention readily available, to be of "extreme" importance. The mean response for all statements ranged from 3.63 to 4.26.

Data in Table XIX indicated that vocational agriculture instructors in the state considered all statements in regard to first aid to be of "high" importance. Medical attention readily available received the highest mean response (4.15), while first aid station designated in shop (3.67) was rated the lowest in the category.

Accident Reporting

In Table XX, 24 instructors (36.92%) from the Central District considered established procedures for reporting accidents to be of "extreme" importance; however, the mean response (3.96) placed it in the category of "high" importance. The statements, standardized accident reporting forms developed (3.03), accident file maintained on

TABLE XVII

RESPONSES OF THE SOUTHEAST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON FIRST AID

First Aid	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Medical attention readily available (N-73).	29	39.72	30	41.09	8	10.95	4	5.47	2	2.73	4.09
School medical facilities accessible (N-73).	27	36.98	31	42.46	9	12.32	3	4.10	3	4.10	4.04
Students knowledgeable in first aid (N-73).	45	61.64	18	24.65	9	12.32	1	1.36	0	0	4.46
First aid station designated in shop (N-73).	31	42.46	24	32.87	13	17.80	5	6.84	0	0	4.10
First aid supplies available in designated area (N-73).	18	24.65	27	36.98	15	20.54	9	12.32	4	5.47	3.63

TABLE XVIII

RESPONSES OF THE SOUTHWEST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON FIRST AID

First Aid	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Medical attention readily available (N-73).	30	41.10	32	43.80	11	15.10	0	0	0	0	4.26
School medical facilities accessible (N-73).	15	20.50	32	43.80	12	16.50	12	16.50	2	2.27	3.63
Students knowledgeable in first aid (N-73).	23	31.50	23	31.50	23	31.50	4	5.50	0	0	3.89
First aid station designated in shop (N-73).	13	17.80	29	39.70	23	31.50	8	11.00	0	0	3.64
First aid supplies available in designated area (N-73).	14	19.20	33	45.20	23	31.50	3	4.10	0	0	3.79

TABLE XIX

OVERALL SUMMARY OF MEAN RESPONSES REGARDING THE
IMPORTANCE PLACED UPON "FIRST AID"

First Aid	<u>Central District</u>		<u>Northeast District</u>		<u>Northwest District</u>		<u>Southeast District</u>		<u>Southwest District</u>		<u>State</u>	
	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.
Medical attention readily available.	60	3.92	75	4.29	60	4.18	73	4.09	73	4.26	346	4.15
School medical facilities accessible.	60	3.43	75	3.77	69	3.50	73	4.04	73	3.63	346	3.68
Students knowledgeable in first aid.	60	3.50	75	3.80	60	3.73	73	4.46	73	3.89	346	3.89
First aid station designated in shop.	60	3.44	75	3.58	60	3.56	73	4.10	73	3.64	346	3.67
First aid supplies available in designated area.	60	3.47	75	3.97	60	4.03	73	3.63	73	3.79	346	3.78

TABLE XX

RESPONSES OF THE CENTRAL DISTRICT REGARDING THE
IMPORTANCE PLACED UPON ACCIDENT REPORTING

Accident Reporting	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Established procedures for reporting accidents (N-65).	24	36.92	24	36.92	9	13.84	7	10.76	1	1.53	3.96
Standardized accident re- porting forms developed (N-65)	8	12.30	23	35.38	9	13.84	13	20.00	12	18.46	3.03
Accident file maintained on each injured student (N-65).	12	18.46	13	20.00	9	13.84	17	26.15	14	21.53	2.87
Accident forms periodi- cally evaluated for solu- tions to accidents (N-65).	8	12.30	11	16.92	22	33.84	12	18.46	12	18.46	2.86

each injured student (2.87), and accident forms periodically evaluated for solutions to accidents (2.86) were considered of "moderate" importance.

Data in Table XXI indicates that the statement "established procedures for reporting accidents registered a mean response of 4.18, which placed it in the category of "high" importance. All other statements in the category were considered of "moderate" importance with the statement, accident file maintained on each injured student, receiving the lowest mean response of 2.64.

According to the data found in Table XXII, 17 instructors (28.33%) of the Northwest District indicated that the statement, established procedures for reporting accidents, was of "extreme" importance; however, the mean response for this statement was 4.03, which placed it in the category of "high" importance. Standardized accident reporting forms developed (2.75) and accident forms periodically evaluated for solutions to accidents (2.63) were in the category of "moderate" importance. The lowest mean response (2.13) was annotated for the statement, accident file maintained on each injured student, which placed it in the category of "little" importance.

Table XXIII indicates that the statement, established procedures for reporting accidents, was considered to be of "extreme" importance by twenty-six instructors in the Southeast District, however, the mean response (4.04) placed it in the category of "high" importance. Standardized accident reporting forms developed (3.36), accident file maintained on each injured student (3.41) and accident forms periodically

TABLE XXI

RESPONSES OF THE NORTHEAST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON
ACCIDENT REPORTING

Accident Reporting	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Established procedures for reporting accidents (N-75).	34	45.33	25	33.30	12	16.00	4	5.33	0	0	4.18
Standardized accident re- porting forms developed (N-75).	11	14.66	15	20.00	22	29.33	13	17.33	14	18.66	2.94
Accident file maintained on each injured student (N-75).	7	9.33	8	10.66	31	41.33	9	12.00	20	26.66	2.64
Accident cally evaluated for solu- tions to accidents (N-65).	13	17.33	8	10.66	27	36.00	6	8.00	21	28.00	2.81

TABLE XXII

RESPONSES OF THE NORTHWEST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON
ACCIDENT REPORTING

Accident Reporting	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Established procedures for reporting accidents (N-60).	17	28.33	31	51.66	9	15.00	3	5.00	0	0	4.03
Standardized accident re- porting forms developed (N-60).	6	10.00	14	23.33	13	21.66	13	21.66	14	23.33	2.75
Accident file maintained on each injured student (N-60).	3	5.00	4	6.66	14	23.33	16	26.66	23	38.33	2.13
Accident forms periodi- cally evaluated for solu- tions to accidents (N-60).	6	10.00	7	11.66	20	33.33	13	21.66	14	23.33	2.63

TABLE XXIII

RESPONSES OF THE SOUTHEAST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON
ACCIDENT REPORTING

Accident Reporting	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Established procedures for reporting accidents (N-63).	26	35.61	31	42.46	9	12.32	7	9.58	0	0	4.04
Standardized accident re- porting forms developed (N-63).	11	15.06	27	36.98	17	23.28	14	19.17	4	5.47	3.36
Accident file maintained on each injured student (N-63).	9	12.32	31	42.46	18	24.65	11	15.06	4	5.47	3.41
Accident forms periodi- cally evaluated for solu- tions to accidents (N-63).	9	12.32	30	41.09	15	20.54	12	16.43	7	9.58	3.30

evaluated for solutions to accidents (3.30) were statements considered to be of "moderate" importance.

Date in Table XXIV indicated that the statement, established procedures for reporting accidents, was considered of "high" importance. Standardized accident reporting forms developed (2.60), accident file maintained on each injured student (2.52), and accident forms periodically evaluated for solutions to accidents (2.63) were statements in the category of "moderate" importance.

Table XXV indicates that the statement, established procedures for reporting accidents (4.03) was of "high" importance by instructors in the state. The three remaining statements, standardized accident reporting forms developed (2.94), accident file maintained on each injured student (2.74), and accident forms periodically evaluated for solutions to accidents (2.85) were considered of "moderate" importance by instructors in the state.

Shop Maintenance

According to data in Table XXVI, the statement receiving the highest mean response (3.53) was fire extinguishers routinely checked for serviceability, which placed it in the category of "high" importance. The remaining statements which were considered to be of "moderate" importance were: all equipment color coded (3.41), entry and emergency exits clearly identified (3.35), proper storage facilities for combustible gases (3.26), paint lacquer identified and secure from shop area (2.66), guards and machines checked for safety (3.32), broken tool

TABLE XXIV

RESPONSES OF THE SOUTHWEST DISTRICT REGARDING
THE IMPORTANCE PLACED UPON
ACCIDENT REPORTING

Accident Reporting	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Established procedures for reporting accidents (N-73).	22	30.10	31	42.46	13	17.80	7	9.58	0	0	3.93
Standardized accident re- porting forms developed (N-73).	0	0	17	23.28	22	30.13	22	30.13	12	16.43	2.60
Accident file maintained on each injured student (N-73).	2	2.73	13	17.80	22	30.13	25	34.24	11	15.06	2.52
Accident forms periodi- cally evaluated for solu- tions to accidents (N-73).	3	4.10	12	16.43	24	32.87	23	31.50	11	15.06	2.63

TABLE XXV

OVERALL SUMMARY OF MEAN RESPONSES REGARDING THE
IMPORTANCE PLACED UPON "ACCIDENT REPORTING"

Accident Reporting	Central District		Northeast District		Northwest District		Southeast District		Southwest District		State	
	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.
Established procedures for reporting accidents.	65	3.96	75	4.18	60	4.03	73	4.04	73	3.93	346	4.03
Standardized accident reporting forms developed.	65	3.03	75	2.94	60	2.75	73	3.36	73	2.60	346	2.94
Accident file maintained on each injured student.	65	2.87	75	2.64	60	2.13	73	3.41	73	2.52	346	2.74
Accident forms periodically evaluated for solutions to accidents.	65	2.86	75	2.81	60	2.63	73	3.30	73	2.63	346	2.85

TABLE XXVI

RESPONSES OF THE CENTRAL DISTRICT REGARDING THE
IMPORTANCE PLACED UPON SHOP MAINTENANCE

Shop Maintenance	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
All equipment color coded (N-65).	14	21.53	14	21.53	24	36.92	11	16.92	0	3.07	3.41
Fire extinguishers routinely checked for serviceability (N-65).	4	6.15	33	50.76	22	33.84	6	9.23	0	0	3.53
Entry and emergency exits clearly identified (N-65).	4	6.15	23	35.38	32	49.23	4	6.15	2	3.07	3.35
Proper storage facilities for combustible gases (N-65).	5	7.69	24	36.92	21	32.30	13	20.00	2	3.07	3.26
Paint locker identified and secure from shop area (N-65).	5	7.69	17	26.15	17	26.15	23	35.38	3	4.61	2.66

TABLE XXVI (Continued)

Shop Maintenance	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Guards and machines checked for safety (N-65).	4	6.15	22	33.84	33	50.76	3	4.61	2	4.61	3.32
Broken tool reporting procedures established (N-65).	4	6.15	16	24.61	33	50.76	9	13.84	3	4.61	3.13
Electrical "Lock Out" policy established for shop (N-65).	5	7.63	16	24.61	19	29.23	22	33.84	3	4.61	2.96
Warning tags available for use (N-65).	2	3.07	14	21.53	31	47.69	12	18.46	6	9.23	2.90

reporting procedures established (3.13), electrical "Lock Out" policy established for shop (2.96), and warning tags available for use (2.90).

Data in Table XXVII indicates that the statements, fire extinguishers routinely checked for serviceability (4.24), entry and emergency exits clearly identified (4.29), and proper storage facilities for combustible gases (4.24) were considered to be of "extreme" importance by 50 percent of the instructors in the Northeast District; however, their mean responses place them in the category of "high" importance. Other statements considered of "high" importance were, paint lacquer identified and secure from shop area (3.88), guards and machines checked for safety (4.29), and broken tool reporting procedures established (4.13). The remaining three statements in the category, all equipment color coded (3.29), electrical "Lock Out" policy established for shop (3.46), and warning tags available for use (2.86) were considered of "moderate" importance.

Table XXVIII indicates that all statement were considered to be of "high" importance with the exception of three. The three statements, all equipment color coded (3.06), electrical "Lock Out" policy established for shop (3.33), and warning tags available for use (2.91) were considered to be of "moderate" importance. Those statements considered of "high" importance and their mean response are as follows:

1. Fire extinguishers routinely checked for serviceability (4.46).

TABLE XXVII

RESPONSES OF THE NORTHEAST DISTRICT REGARDING THE
IMPORTANCE PLACED UPON SHOP MAINTENANCE

Shop Maintenance	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
All equipment color coded (N-75).	9	12.00	23	30.66	32	42.66	3	4.00	8	10.66	3.29
Fire extinguishers routinely checked for serviceability (N-75).	47	62.66	17	22.66	2	2.66	0	0	9	12.00	4.24
Entry and emergency exits clearly identified (N-75).	41	54.66	20	26.66	11	14.66	1	1.33	2	2.66	4.29
Proper storage facilities for combustible gases (N-75).	41	54.66	17	22.66	13	17.33	2	2.66	2	2.66	4.24
Paint locker identified and secure from shop area (N-75).	32	42.66	18	24.00	14	18.66	6	8.00	5	6.66	3.88

TABLE XXVII (Continued)

Shop Maintenance	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Guards and machines checked for safety (N-75).	36	48.00	26	34.66	12	16.00	1	1.33	0	0	4.29
Broken tool reporting procedures established (N-75).	30	40.00	27	36.00	16	21.33	2	2.66	0	0	4.13
Electrical "Lock Out" policy established for shop (N-75).	15	20.00	21	28.00	28	37.33	6	8.00	5	6.66	3.46
Warning tags available for use (N-75).	6	8.00	17	22.66	27	36.00	11	14.66	14	18.66	2.86

TABLE XXVIII

RESPONSES OF THE NORTHWEST DISTRICT REGARDING THE
IMPORTANCE PLACED UPON SHOP MAINTENANCE

Shop Maintenance	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
All equipment color coded (N-60).	0	0	22	36.66	23	38.33	12	20.00	3	5.00	3.06
Fire extinguishers routinely checked for serviceability (N-60).	32	53.33	24	40.00	4	6.66	0	0	0	0	4.46
Entry and emergency exits clearly identified (N-60).	12	20.00	30	50.00	13	21.66	4	6.66	1	1.66	3.80
Proper storage facilities for combustible gases (N-60).	23	38.33	21	35.00	12	20.00	4	6.66	0	0	4.05
Paint locker identified and secure from shop area (N-60).	14	23.33	18	30.00	22	36.66	4	6.66	2	3.33	3.63

TABLE XXVIII (Continued)

Shop Maintenance	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Guards and machines checked for safety (N-60).	23	38.33	30	50.00	7	11.66	0	0	0	0	4.26
Broken tool reporting procedures established (N-60).	10	16.66	40	66.66	7	11.66	3	5.00	0	0	3.95
Electrical "Lock Out" policy established for shop (N-60).	7	11.66	20	33.33	23	38.33	6	10.00	4	6.66	3.33
Warning tags available for use (N-60).	2	3.33	20	33.33	20	33.33	7	11.66	11	18.33	2.91

2. Entry and emergency exits clearly identified (3.80).
3. Proper storage facilities for combustible gases (4.05).
4. Paint lacquer identified and secure from shop area (3.63).
5. Guards and machines checked for safety. (4.26).
6. Broken tool reporting procedures established (3.95).

Data recorded in Table XXIX indicated that over 50 percent of the instructors in the Southeast District considered the statements, all equipment color coded (4.35), fire extinguishers routinely checked for serviceability (4.26), and guards and machines checked for safety (4.49) to be of "extreme" importance; however, as indicated by the mean response these activities received an overall rating of "high" importance. Other statements considered to be of "high" importance were as follows, entry and emergency exits clearly identified (4.16), proper storage facilities for combustible gases (3.60), broken tool reporting procedures established (3.56), electrical "Lock Out" policy established for shop (3.68), and warning tags available for use (3.73). The statement, paint lacquer identified and secure from shop area (3.45) received the lowest mean response in the category, which placed it in the category of "moderate" importance.

Table XXX indicates that forty-three instructors from the Southwest District considered the statement, fire extinguishers routinely checked for serviceability (4.41) to be of "extreme" importance; however, the mean response places it in the category of "high" importance. Other statements considered to be of "high" importance were as follows:

1. Entry and emergency exits clearly identified (3.76).

TABLE XXIX

RESPONSES OF THE SOUTHEAST DISTRICT REGARDING THE
IMPORTANCE PLACED UPON SHOP MAINTENANCE

Shop Maintenance	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
All equipment color coded (N-73).	42	57.53	19	26.02	8	10.95	4	5.47	0	0	4.35
Fire extinguishers routinely checked for serviceability (N-73).	39	53.42	17	23.28	14	19.17	3	4.10	0	0	4.26
Entry and emergency exits clearly identified (N-73).	31	42.46	25	34.24	15	20.54	2	2.73	0	0	4.16
Proper storage facilities for combustible gases (N-73).	18	24.65	19	26.02	26	35.61	9	12.32	1	1.36	3.60
Paint locker identified and secure from shop area (N-73).	13	17.80	27	36.98	19	26.02	8	10.95	6	8.21	3.45

TABLE XXIX (Continued)

Shop Maintenance	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Guards and machines checked for safety (N-73).	40	54.79	29	39.72	4	5.47	0	0	0	0	4.49
Broken tool reporting procedures established (N-73).	19	26.02	24	32.87	15	20.54	9	12.32	6	8.21	3.56
Electrical "Lock Out" policy established for shop (N-73).	12	16.43	36	49.31	15	20.54	10	13.69	0	0	3.68
Warning tags available for use (N-73).	18	24.65	29	39.72	16	21.91	9	12.32	1	1.36	3.73

TABLE XXX

RESPONSES OF THE SOUTHWEST DISTRICT REGARDING THE
IMPORTANCE PLACED UPON SHOP MAINTENANCE

Shop Maintenance	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
All equipment color coded (N-73).	16	2.19	19	2.60	23	31.50	13	17.80	2	2.73	3.46
Fire extinguishers routinely checked for serviceability (N-73).	43	58.90	19	26.02	9	12.32	2	2.73	0	0	4.41
Entry and emergency exits clearly identified (N-73).	14	19.17	33	45.20	14	19.17	11	15.06	1	1.36	3.76
Proper storage facilities for combustible gases (N-73).	31	42.46	32	43.83	7	9.58	2	2.73	1	1.36	4.23
Paint locker identified and secure from shop area (N-73).	22	30.14	22	30.14	23	31.51	2	2.73	4	5.47	3.76

TABLE XXX (Continued)

Shop Maintenance	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Guards and machines checked for safety (N-73).	32	43.83	32	43.83	3	4.10	5	6.84	1	1.36	4.21
Broken tool reporting procedures established (N-73).	21	28.76	30	41.09	12	16.43	8	10.95	2	2.73	3.82
Electrical "Lock Out" policy established for shop (N-73).	17	23.28	32	43.83	14	19.17	9	12.32	1	1.36	3.75
Warning tags available for use (N-73).	13	17.80	21	28.76	26	35.61	10	13.69	3	4.10	3.42

2. Proper storage facilities for combustible gases (4.23).
3. Paint lacquer identified and secure from shop area (3.76).
4. Guards and machines checked for safety (4.21).
5. Broken tool reporting procedures established (3.82).
6. Electrical "Lock Out" policy established for shop (3.75).

The remaining two statements in this category were, all equipment color coded (3.46) and warning tags available for use (3.42) and were considered to be of "moderate" importance.

Table XXXI was developed to summarize responses by district and thus permit a statewide comparison. Inspection of this data reveals that all statements with the exception of two were in the category of "high" importance. Those statements and their mean response are as follows:

1. All equipment color coded (3.53).
2. Fire extinguishers routinely checked for serviceability (4.18).
3. Entry and emergency exits clearly identified (3.86).
4. Proper storage facilities for combustible gases (3.88).
5. Paint lacquer identified and secure from shop area (3.55).
6. Guards and machines checked for safety (4.13).
7. Broken tool reporting procedures established (3.72).

Electrical "Lock Out" policy established for shop (3.45) and warning tags available for use (3.18) were considered to be of "moderate" importance.

Personal Views

Data recorded in Table XXXII indicate that the statements, shop safety instruction course for all instructors (3.27), in-service safety

TABLE XXXI

OVERALL SUMMARY OF MEAN RESPONSES REGARDING THE
IMPORTANCE PLACED UPON "SHOP MAINTENANCE"

Shop Maintenance	<u>Central District</u>		<u>Northeast District</u>		<u>Northwest District</u>		<u>Southeast District</u>		<u>Southwest District</u>		<u>State</u>	
	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.
All equipment color coded.	65	3.41	75	3.29	60	3.06	73	4.35	73	3.46	346	3.53
Fire extinguishers routinely checked for serviceability.	65	3.53	75	4.24	60	4.46	73	4.26	73	4.41	346	4.18
Entry and emergency exits clearly identified.	65	3.35	75	4.29	60	3.80	73	4.16	73	3.76	346	3.86
Proper storage facilities for combustible gases.	65	3.26	75	4.24	60	4.05	73	3.60	73	4.23	346	3.88
Paint locker identified and secure from shop area.	65	2.66	75	3.88	60	3.63	73	3.45	73	3.76	346	3.55
Guards and machines checked for safety.	65	3.32	75	4.29	60	4.26	73	4.49	73	4.21	346	4.13

TABLE XXXI (Continued)

Shop Maintenance	Central District		Northeast District		Northwest District		Southeast District		Southwest District		State	
	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.
Broken tool reporting procedures established.	65	3.13	75	4.13	60	3.95	73	3.56	73	3.82	346	3.72
Electrical "Lock Out" policy established for shop.	65	2.96	75	3.46	60	3.33	73	3.68	73	3.75	346	3.45
Warning tags available for use.	65	2.90	75	2.86	60	2.91	73	3.73	73	3.42	346	3.18

TABLE XXXII

RESPONSES OF THE CENTRAL DISTRICT REGARDING THE
IMPORTANCE PLACED UPON PERSONAL VIEWS

Personal Views	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Shop safety instruction course for all instruc- tors (N-65).	3	4.61	22	33.84	31	47.69	8	12.30	1	1.53	3.27
In-service safety in- struction (N-65).	4	6.15	23	35.38	22	33.84	14	21.53	2	3.07	3.20
Pre-service safety in- struction (N-65).	6	9.23	22	33.84	25	38.46	10	15.38	2	3.07	3.30

instruction (3.20), and pre-service safety instruction (3.30) were considered to be of "moderate" importance by instructors in the Central District.

Table XXXIII indicates that thirty-five instructors in the Northeast District considered the statement, pre-service safety instruction to be of "extreme" importance, however, the mean response (4.20) placed this statement in the category of "high" importance. The statements, shop safety instruction course for all instructors (4.22) and in-service safety instruction (4.25) were considered of "high" importance.

Table XXXIV indicates the statements, shop safety instruction course for all instructors (3.70), and pre-service safety instruction (3.73), were considered of "high" importance by instructors in the Northwest District. The statement, in-service safety instruction (3.46), was in the category of "moderate" importance.

In Table XXXV, over 63 percent of the instructors indicated that the statements, shop safety instruction course for all instructors (4.53) and in-service safety instruction (4.63) were of "extreme" importance. The mean response 4.43 for the statement, pre-service safety instruction, placed it in the category of "high" importance.

Table XXXVI indicates that all statements were considered to be of "high" importance. The statements and their mean response are as follows:

1. Shop safety instruction course for all instructors (4.00).
2. In-service safety instruction (3.91).
3. Pre-service safety instruction (3.80).

TABLE XXXIII

RESPONSES OF THE NORTHEAST DISTRICT REGARDING THE
IMPORTANCE PLACED UPON PERSONAL VIEWS

Personal Views	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Shop safety instruction course for all instructors (N-75).	32	42.66	32	42.66	7	9.33	4	5.33	0	0	4.22
In-service safety instruction (N-75).	32	42.66	32	42.66	9	12.00	2	2.66	0	0	4.25
Pre-service safety instruction (N-75).	35	46.66	23	30.66	14	18.66	3	4.00	0	0	4.20

TABLE XXXIV

RESPONSES OF THE NORTHWEST DISTRICT REGARDING THE
IMPORTANCE PLACED UPON PERSONAL VIEWS

Personal Views	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Shop safety instruction course for all instructors (N-60).	8	13.33	34	56.66	14	23.33	0	0	4	6.66	3.70
In-service safety instruction (N-60).	3	5.00	31	51.66	20	33.33	3	5.00	3	5.00	3.46
Pre-service safety instruction (N-60).	10	16.66	33	55.00	11	18.33	3	5.00	3	5.00	3.73

TABLE XXXV

RESPONSES OF THE SOUTHEAST DISTRICT REGARDING THE
IMPORTANCE PLACED UPON PERSONAL VIEWS

Personal Views	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Shop safety instruction course for all instruc- tors (N-73).	46	63.01	21	28.76	5	6.84	1	1.36	0	0	4.53
In-service safety in- struction (N-73).	48	65.75	23	31.50	2	2.73	0	0	0	0	4.63
Pre-service safety in- struction (N-73).	45	61.64	17	23.28	9	12.32	2	2.73	0	0	4.43

TABLE XXXVI

RESPONSES OF THE SOUTHWEST DISTRICT REGARDING THE
IMPORTANCE PLACED UPON PERSONAL VIEWS

Personal Views	Distribution of Responses by Importance Category										Mean Response
	Extreme		High		Moderate		Little		No		
	No.	%	No.	%	No.	%	No.	%	No.	%	
Shop safety instruction course for all instructors (N-73).	13	17.80	47	64.38	13	17.80	0	0	0	0	4.00
In-service safety instruction (N-73).	11	15.06	47	64.38	13	17.80	2	2.73	0	0	3.91
Pre-service safety instruction (N-73).	22	30.13	37	50.68	12	16.43	2	2.73	0	0	3.80

Table XXXVII was developed to summarize responses by district and thus permit a statewide comparison. Inspection of this data reveals that all statements were considered of "high" importance. The statements, shop safety instruction course for all instructors, and pre-service safety instruction, received the same mean response rating of 3.97. The statement, in-service safety instruction was rated at 3.92 by all instructors in the state.

Frequency of Accidents

Table XXXVIII indicates that 43.07% of frequent accidents involves cuts and abrasions. Twenty-one instructors (32.30%) reported flash burns as being the most frequently occurring accident. One instructor rated the section, injury from power equipment, as being the most frequent, while the statement, explosions, fires, and falls received no rating by the instructors.

Data in Table XXXIX indicates that 32 instructors (42.66%) in the Northeast District rated cuts and abrasions as the most frequently occurring accident in their shop programs. Flash burns were rated as the most frequently occurring accident by 25 (33.3%) of the instructors in the district. Smoke inhalation and burns were both rated by three departments as occurring most often in their shops. The categories pertaining to explosions, fires, and falls were not rated as occurring in shop programs.

Table XL indicates that 65 percent of the vocational agriculture instructors in the Northwest District indicated cuts and abrasions as

TABLE XXXVII

OVERALL SUMMARY OF MEAN RESPONSES REGARDING THE
IMPORTANCE PLACED UPON "PERSONAL VIEWS"

Personal Views	<u>Central District</u>		<u>Northeast District</u>		<u>Northwest District</u>		<u>Southeast District</u>		<u>Southwest District</u>		<u>State</u>	
	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.	N	Mean Resp.
Shop safety instruction course for all instructors.	65	3.27	75	4.22	60	3.70	73	4.53	73	4.00	346	3.97
In-service safety instruction.	65	3.20	75	4.25	60	3.46	73	4.63	73	3.91	346	3.92
Pre-service safety instruction.	65	3.30	75	4.20	60	3.73	73	4.43	73	3.80	346	3.97

TABLE XXXVIII

FREQUENCY OF ACCIDENTS OCCURRING IN SCHOOL SHOPS
IN THE CENTRAL DISTRICT

Type of Accident	Number	Percent
Flash Burns	21	32.30
Foreign Material in Eyes	7	10.76
Cuts and Abrasions	28	43.07
Explosions/Fires	0	0
Falls	0	0
Smoke Inhalation	3	12.30
Injury from Power Equipment	1	1.53

TABLE XXXIX

FREQUENCY OF ACCIDENTS OCCURRING IN SCHOOL SHOPS
IN THE NORTHEAST DISTRICT

Type of Accident	Number	Percent
Flash Burns	25	33.3
Foreign Material in Eyes	9	12.0
Cuts and Abrasions	32	42.66
Explosions/Fires	0	0
Falls	0	0
Smoke Inhalation	3	4.0
Other (Burns)	3	4.0

the most frequent accident in their shop programs. The second most frequent accident was flash burns, as was indicated by 12 instructors. Explosions/fires and injury from power equipment were not rated; however, in the "Other" section, two instructors considered burns to be the most prevalent accidents in their programs.

TABLE XL
FREQUENCY OF ACCIDENTS OCCURRING IN SCHOOL SHOPS
IN THE NORTHWEST DISTRICT

Type of Accident	Number	Percent
Flash Burns	12	20.0
Foreign Material in Eyes	3	5.0
Cuts and Abrasions	39	65.0
Explosions/Fires	0	0
Falls	1	1.66
Smoke Inhalation	3	5.0
Injury from Power Equipment	0	0
Other (Burns)	2	3.33

In Table XLI, 29 vocational agriculture instructors from the Southeast District considered cuts and abrasions as the most frequently occurring accident. Twenty-four instructors rated flash burns as the most frequent, and the factor, foreign material in eyes, was rated most frequent by nine instructors. Injury from power equipment and

explosions/fires received no response. In the "Other" category, seven instructors rated burns as the most frequent accident in their program.

TABLE XLI
FREQUENCY OF ACCIDENTS OCCURRING IN SCHOOL SHOPS
IN THE SOUTHEAST DISTRICT

Type of Accident	Number	Percent
Flash Burns	24	32.87
Foreign Material in Eyes	9	12.32
Cuts and Abrasions	29	39.72
Explosions/Fires	0	0
Falls	3	4.10
Smoke Inhalation	1	1.36
Injury from Power Equipment	0	0
Other (Burns)	7	9.58

Data in Table XLII indicate that 39 instructors in the Southwest District consider cuts and abrasions as the most frequent accident in their shop program. Eighteen instructors considered flash burns while seven considered foreign material in eyes to be the most frequent accidents in their programs.

Table XLIII was developed to summarize responses by district and thus permit a statewide comparison. Inspection of this data reveals that teachers across the state considered cuts and abrasions to be the

most frequent accident in shop programs, as was indicated by 48 percent of the instructors. One hundred instructors (28.90%) considered flash burns, while 35 instructors considered foreign materials in eyes as the most frequent accident in farm shop programs.

TABLE XLII

FREQUENCY OF ACCIDENTS OCCURRING IN SCHOOL SHOPS
IN THE SOUTHWEST DISTRICT

Type of Accident	Number	Percent
Flash Burns	18	24.7
Foreign Material in Eyes	7	9.58
Cuts and Abrasions	39	53.4
Explosions/Fires	0	0
Falls	1	1.36
Smoke Inhalation	3	4.1
Injury from Power Equipment	0	0
Other (Burns)	5	6.84

Other accidents and the percentage of instructors considering them as being the most frequent accidents are as follows:

1. Smoke Inhalation (5.2%).
2. Other (Burns) (4.91%).
3. Falls (1.44%).

4. Injury from Power Equipment (1.15%).

5. Explosions/Fires (0%).

TABLE XLIII
 FREQUENCY OF ACCIDENTS OCCURRING IN SCHOOL SHOPS
 IN THE STATE

Type of Accident	Number	Percent
Flash Burns	100	28.90
Foreign Material in Eyes	35	10.11
Cuts and Abrasions	167	48.26
Explosions/Fires	0	0
Falls	5	1.44
Smoke Inhalation	18	5.20
Injury from Power Equipment	4	1.15
Other (Burns)	17	4.91

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this chapter is to summarize this study which was conducted to analyze and compare agricultural mechanics safety practices and policies of Oklahoma vocational agriculture instructors. Also presented are conclusions and recommendations which are based upon the analysis of data collected and observations made by the author in the conduct of this study.

Summary of the Study

Purpose

The primary purpose of this study was to analyze and compare agricultural mechanics safety practices and policies of Oklahoma vocational agriculture instructors.

Specific Objectives

The following specific objectives were established to accomplish the primary purpose of the study:

1. To determine from the vocational agriculture instructors Oklahoma who teach agricultural mechanics, the amount of

- importance they place on the selected areas of safety in their school shop programs.
2. To identify practices followed in developing safe work habits among students.
 3. To determine those accidents which occur most frequently in agricultural mechanics programs.
 4. To compare the five districts in Oklahoma and identify any areas of difference regarding safety education and practices which exist across the state.

Procedures Used in the Study

Following a review of literature and research pertaining to the study, the following tasks were involved in the collection and analysis of data to satisfy the purpose and objectives of the study: (1) determine the population, (2) develop the instrument, (3) collect the data, and (4) analyze the results.

The population consisted of all vocational agriculture programs in the state. In developing the instrument state department personnel, vocational agriculture teachers, graduate students and faculty members were consulted in the development of the instrument. Data was collected by a mailed questionnaire. The statistical methods utilized in analyzing data were means and percentages.

The major areas of safety researched in this study were identified through the aid of vocational agriculture instructors, graduate students, state department personnel, faculty members working the areas of safety, and published articles pertaining to safety.

Findings

The research findings in summary form are presented for each of the areas investigated.

Background Information on the Teachers Participating in the Study.

The study population was 364 vocational agriculture departments in Oklahoma. Of this total, 346 vocational agriculture instructors responded from the five supervisory districts. Teaching experience for those instructors responding ranged from 1 to 38 years in vocational agriculture with the average number of years experience for all teachers in the state being 9.5 years. The Central District had the largest number of years teaching experience, 14.7, while the Northwest District had the least, 6.7. The average number of hours of formal safety training for the respondents was 2.80 hours. Instructors averaged 9.02 hours of on-the-job training in safety and each instructor taught an average of 15.20 hours of safety to students in their programs.

Student Instruction. Four topics were listed in the area of instruction on safety provided to students. The following statement received a mean response in the category of "extreme" importance: safety instruction on tools in shop (4.5). Those receiving mean responses in the category of "high" importance were as follows:

1. Safety techniques demonstrated in shop (4.47).
2. Standardized procedures in case of emergency (4.11).
3. Proficiency level achieved by all students prior to shop instruction (4.06).

Safety Inspections. Combined mean responses indicate that "high" importance was attached to the following procedures employed in conducting safety inspections in agricultural mechanics shops:

1. Conducted by you the instructor (4.36).
2. Conducted by student (3.78).

The following inspection procedures received a mean response in the category of "moderate" importance:

1. Conducted by administration (3.23).
2. Conducted by advisory committee (3.11).
3. Conducted by OSHA (2.53).
4. Conducted by fire department (3.04).
5. Conducted by insurance companies (2.74).
6. Conducted by peer instructors (2.85).

First Aid. Five topics were investigated in the area of first aid and these received mean responses in the category of "high" importance.

These topics and computed means are as follows:

1. Medical attention readily available (4.15).
2. School medical facilities accessible (3.68).
3. Students knowledgeable in first aid (3.89).
4. First aid station designated in shop (3.67).
5. First aid supplies available in designated area (3.78).

Accident Reporting. Accident reporting received a mean response from all the districts combined which placed the various items in the categories of "high" or "moderate" importance. The accident reporting policies and computed means are as follows:

1. Established procedures for reporting accidents (4.03).
2. Standardized accident reporting forms developed (2.94).
3. Accident file maintained on each injured student (2.74).
4. Accident forms periodically evaluated for solutions to accidents (2.85).

Shop Maintenance. Seven different variables associated with shop maintenance received overall mean responses which placed them in the category of "high" importance. The statements and computed means are as follows:

1. All equipment color coded (3.53).
2. Fire extinguishers routinely checked for serviceability (4.18).
3. Entry and emergency exits clearly identified (3.86).
4. Proper storage facilities for combustible gases (3.88).
5. Paint lacquer identified and secure from shop area (3.55).
6. Broken tool reporting procedures established (3.72).

The remaining two shop maintenance practices received a mean response which placed them in the category of "moderate" importance.

These were:

1. Electrical "Lock Out" policy established for shop (3.45).
2. Warning tags available for use (3.18).

Personal Views. An attempt was made to assess instructors personal views regarding some aspects of shop safety. All three of these received mean responses which placed them in the category of "high" importance. The statement and computed means are as follows:

1. Shop safety instruction course for all instructors (3.97).
2. In-service safety instruction (3.92).
3. Pre-service safety instruction (3.97).

Frequency of Accidents. One hundred sixty-seven instructors across the state (48.26%) rated cuts and abrasions as the most frequently occurring accidents in their school shop program. One hundred instructors (28.90%) rated flash burns as the most frequently occurring accident. Explosions/fires received no responses indicated that these were not problems in shop programs. Burns were annotated in the "Other" section by 17 instructors (4.91%) as the number one occurring accident.

Conclusions

The interpretation and inspection of the findings of the study prompted the formulation of certain conclusions by the author as presented below:

1. Based upon the findings that teachers only had an average of 2.8 hours of formal safety training and only 9.02 hours of on-the-job safety training, it was concluded that vocational agriculture teachers had very little training in the area of farm shop safety. However, the fact that vocational agriculture instructors taught an average of 15.2 hours of safety to their students indicates that vocational agriculture instructors are aware of the need and value of safety training.
2. That vocational agriculture instructors consider safety training instruction to be of significant importance in their agricultural mechanics programs.

3. Based upon the findings, teachers prefer having shop facilities inspected by shop students or themselves, rather than having outside or other agencies conducting inspections of their facilities.
4. That knowledge of and accessibility to first aid are important segments of their agricultural mechanics programs.
5. Based on the findings, vocational agriculture instructors consider the reporting of accidents to be important in their agricultural mechanics programs; however, maintaining accident records and evaluation of these records for improvement of the shop program were not considered to be of significant importance.
6. That vocational agriculture instructors consider good shop maintenance to be valuable to their agricultural mechanics programs.
7. Based upon the findings, vocational agriculture instructors want and need formal safety training.
8. Based on the findings, approximately half of the vocational agriculture instructors rated cuts and abrasions as the most prevalent accident in agricultural mechanics programs in the state.

Recommendations

The following recommendations are made by the author as a result of having conducted this study:

1. That safety be offered as part of the curriculum in

2. That safety be included as part of in-service training for new and returning vocational agriculture teachers.
3. That accident file maintenance be discussed in professional improvement meetings in an effort to reduce accidents and provide minimum standards for vocational agriculture instructors to utilize in evaluating their shop safety programs.
4. That a concerted effort be made by supervisory personnel to encourage participation in the National Chapter Safety Awards Program, thereby involving both chapters and students toward improving all aspects of safety.

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APPENDIXES

APPENDIX A

INSTRUMENT

Background Information

1. Number of years teaching experience. _____
2. Number of hours of formal (college) safety training. _____
3. Number of hours "on the job" training in safety. _____
4. Number of hours of safety instruction taught in your program. _____

Please indicate your response to the following statements as to their importance in relation to safety in your program. You would check "Of Extreme Importance" in those areas in which you spend the most time instructing and overseeing and "Of No Importance" in those areas in which you place little attention or time due to certain peculiarities of your program.

Of Ext. Impt.	Of High Impt.	Of Mod. Impt.	Of Little Impt.	Of No Impt.
---------------------	---------------------	---------------------	-----------------------	-------------------

Student Instruction

- | | | | | | |
|--|-------|-------|-------|-------|-------|
| 1. Safety instruction on tools in shop. | _____ | _____ | _____ | _____ | _____ |
| 2. Safety techniques demonstrated in shop. | _____ | _____ | _____ | _____ | _____ |
| 3. Standardized procedures in case of emergency. | _____ | _____ | _____ | _____ | _____ |
| 4. Proficiency level achieved by all students prior to shop instruction. | _____ | _____ | _____ | _____ | _____ |
| 5. Other (please specify). | _____ | _____ | _____ | _____ | _____ |

Safety Inspections

- | | | | | | |
|--------------------------------------|-------|-------|-------|-------|-------|
| 1. Conducted by you the instructor. | _____ | _____ | _____ | _____ | _____ |
| 2. Conducted by students. | _____ | _____ | _____ | _____ | _____ |
| 3. Conducted by administration. | _____ | _____ | _____ | _____ | _____ |
| 4. Conducted by advisory committee. | _____ | _____ | _____ | _____ | _____ |
| 5. Conducted by OSHA. | _____ | _____ | _____ | _____ | _____ |
| 6. Conducted by fire department. | _____ | _____ | _____ | _____ | _____ |
| 7. Conducted by insurance companies. | _____ | _____ | _____ | _____ | _____ |

	Of Ext. Impt.	Of High Impt.	Of Mod. Impt.	Of Little Impt.	Of No Impt.
<u>Safety Inspections (Cont.)</u>					
8. Conducted by peer instructors.	_____	_____	_____	_____	_____
9. Other (please specify).	_____	_____	_____	_____	_____
<u>First Aid</u>					
1. Medical attention readily available.	_____	_____	_____	_____	_____
2. School medical facilities accessible.	_____	_____	_____	_____	_____
3. Students knowledgeable in first aid.	_____	_____	_____	_____	_____
4. First aid station designated in shop.	_____	_____	_____	_____	_____
5. First aid supplies available in designated area.	_____	_____	_____	_____	_____
6. Other (please specify).	_____	_____	_____	_____	_____
<u>Accident Reporting</u>					
1. Established procedures for reporting accidents.	_____	_____	_____	_____	_____
2. Standardized accident reporting forms developed.	_____	_____	_____	_____	_____
3. Accident file maintained on each injured student.	_____	_____	_____	_____	_____
4. Accident forms periodically evaluated for solutions to accidents.	_____	_____	_____	_____	_____
5. Other (please specify).	_____	_____	_____	_____	_____
<u>Shop Maintenance</u>					
1. All equipment color coded.	_____	_____	_____	_____	_____
2. Fire extinguishers routinely checked for serviceability.	_____	_____	_____	_____	_____
3. Entry and emergency exits clearly identified.	_____	_____	_____	_____	_____
4. Proper storage facilities for combustible gases.	_____	_____	_____	_____	_____

Of Ext. Impt.	Of High Impt.	Of Mod. Impt.	Of Little Impt.	Of No Impt.
---------------------	---------------------	---------------------	-----------------------	-------------------

Shop Maintenance (Cont.)

- | | | | | | |
|---|-------|-------|-------|-------|-------|
| 5. Paint locker identified and secure from shop area. | _____ | _____ | _____ | _____ | _____ |
| 6. Guards and machines checked for safety. | _____ | _____ | _____ | _____ | _____ |
| 7. Broken tool reporting procedures established. | _____ | _____ | _____ | _____ | _____ |
| 8. Electrical "Look Out" policy established for shop. | _____ | _____ | _____ | _____ | _____ |
| 9. Warning tags available for use. | _____ | _____ | _____ | _____ | _____ |
| 10. Other (please specify). | _____ | _____ | _____ | _____ | _____ |

Personal Views

- | | | | | | |
|------------------------------------|-------|-------|-------|-------|-------|
| 1. Shop safety instruction course. | _____ | _____ | _____ | _____ | _____ |
| 2. In-service safety instruction. | _____ | _____ | _____ | _____ | _____ |
| 3. Pre-service safety instruction. | _____ | _____ | _____ | _____ | _____ |
| 4. Other (please specify). | _____ | _____ | _____ | _____ | _____ |

Rate the following accidents by inserting the number one by the accident which occurs most frequently in your school shop, the number two by the second most frequent accident, and so on throughout the list.

- | | | | |
|------------------------|--------------------------------|--------------------------|------------------------------|
| _____ Flash Burns | _____ Injury from Power Equip. | _____ Falls | _____ Smoke Inhalation |
| _____ Explosions/Fires | _____ Foreign Mat'l. in Eyes | _____ Cuts and Abrasions | _____ Other (please specify) |

APPENDIX B
CORRESPONDENCE

February 27, 1980

Dear Sir:

I recently sent you a questionnaire asking you to express your opinion on the amount of time and importance you place upon areas of instruction in Safety.

Without your opinion, the study will be incomplete. I need your questionnaire to have a 100 percent return.

I have enclosed another copy, in case you have misplaced the questionnaire that s sent to you previously.

Please take time to fill out the questionnaire and return it today, if possible.

Respectfully yours,

Disney H. Reece
Vocational Agriculture
Instructor
Ripley High School

January 24, 1980

Dear Sir:

Our goal as vocational agriculture teachers is to provide an instructional program that will provide a safe environment for our students to engage in mechanical activities in addition to our classroom studies.

I am presently conducting a study to compare the amount of emphasis placed on school shops safety programs involving vocational agriculture programs in Oklahoma.

Your response to each statement on the enclosed questionnaire will help provide the necessary information for this comparison and your responses will be used in the strictest confidence. I have included a self-addressed, stamped envelope for your convenience.

I appreciate your assistance in this matter.

Respectfully yours,

Disney H. Reece
Vocational Agriculture
Instructor
Ripley, Oklahoma 74062

APPENDIX C

SUMMARY OF RETURNS TABLE

TABLE XLIV
SUMMARY OF RETURNS

Safety Activity	Range of Mean Responses	State Mean	Category of Importance
A. Student Instruction			
1. Safety instruction on tools in shop.	4.36-4.69	4.5	Extreme
2. Safety techniques demonstrated in shop.	4.35-4.61	4.47	High
3. Standardized procedures in case of emergency.	3.90-4.32	4.11	High
4. Proficiency level achieved by all students prior to shop instruction.	3.84-4.24	4.06	High
B. Conduct of Shop Safety Inspections			
1. By the instructor.	4.18-4.52	4.36	High
2. By students.	3.35-4.12	3.78	High
3. By administration.	3.03-3.47	3.23	Moderate
4. By advisory committee.	2.85-3.69	3.11	Moderate
5. By OSHA.	2.23-2.70	2.53	Moderate
6. By fire department.	2.15-3.23	3.04	Moderate
7. By insurance companies.	2.01-3.16	2.74	Moderate
8. By peer instructors.	2.08-2.98	2.85	Moderate
C. First Aid			
1. Medical attention readily available.	3.92-4.29	4.15	High
2. School medical facilities accessible.	3.43-4.04	3.68	High
3. Students knowledgeable in first aid.	3.50-4.46	3.89	High
4. First aid station designated in shop.	3.44-4.10	3.67	High
5. First aid supplies available in designated areas.	3.47-4.03	3.78	High

TABLE XLIV (Continued)

Safety Activity	Range of Mean Responses	State Mean	Category of Importance
D. Accident Reporting			
1. Established procedures for accidents.	3.93-4.18	4.03	High
2. Standardized accident reporting forms developed.	2.60-3.36	2.94	Moderate
3. Accident file maintained on each injured student.	2.13-2.87	2.74	Moderate
4. Accident forms periodically evaluated for solutions to accidents.	2.63-3.30	2.85	Moderate
E. Shop Maintenance			
1. All equipment color coded.	3.06-3.46	3.53	High
2. Fire extinguishers routinely checked for serviceability.	3.53-4.46	4.18	High
3. Entry and emergency exits clearly identified.	3.35-4.29	3.86	High
4. Proper storage facilities for combustible gases.	3.26-4.24	3.88	High
5. Paint locker identified and secure from shop area.	2.66-3.88	3.55	High
6. Guards and machines checked for safety.	3.32-4.49	4.13	High
7. Broken tool reporting procedures established.	3.13-4.13	3.72	High
8. Electrical "Lock Out" policy established for shop.	2.96-3.75	3.45	Moderate
9. Warning tags available for use.	2.86-3.73	3.18	Moderate
F. Personal Views			
1. Shop safety instruction course for all instructors.	3.27-4.53	3.97	High
2. In-service safety instruction.	3.20-4.63	3.92	High
3. Pre-service safety instruction.	3.30-4.43	3.97	High

VITA²

Disney Harold Reece

Candidate for the Degree of

Doctor of Education

Thesis: A COMPARABLE ANALYSIS OF SAFETY STANDARDS BEING
STRESSED IN VOCATIONAL AGRICULTURE PROGRAMS

Major Field: Agricultural Education

Biographical:

Personal Data: Born near Haskell, Oklahoma, July 25, 1949, the son
of Disney and Jessie Reece.

Education: Graduated from Haskell High School, Haskell, Oklahoma,
May, 1967; received the Associate of Science degree from Con-
nors State College, Warner, Oklahoma, December, 1969; attended
military schools from 1969-74, including Officers' Candidate
School, The Basic School, Flight School, Aviation Logistics
School, Embarkation School, Survival School, and others; re-
ceived Bachelor of Science in Agriculture degree from Oklahoma
State University, Stillwater, Oklahoma, May, 1976; completed
requirements for the Doctor of Education degree at Oklahoma
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Professional Experience: Pipefitter/welder out of Local Union
351, Muskogee, Oklahoma, from 1967 to present; officer of Ma-
rines from 1969 to 1974, student at Oklahoma State University
from 1974 to 1980, taught Vocational Agriculture at Ripley
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Professional Organizations: Member of the Oklahoma Vocational Ag-
riculture Teachers Association; National Vocational Agricul-
ture Teachers Association; Collegiate FFA; Alpha Tau Alpha;
Phi Delta Kappa; Marine Corps Reserve Officers Association;
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ing and Pipe Fitting Industry of the United States and Canada;
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