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ABSTRACT

This report describes a project conducted to design, develop, and disseminate modular instructional materials needed for infusing safety and health instruction into pre-employment vocational training curricula. Training needs were identified and specific content areas determined. Content areas were agriculture and agribusiness education, allied health education, business and office education, marketing and distributive education, technical education, trade and industrial education, and vocational home economics education. Existing materials were located and evaluated for suitability for this program. Topics, content, objectives, and outlines for materials needed were determined. Fifty instructional modules were developed, evaluated, and revised. Seven instructor resource guides were prepared to provide assistance in selection and implementation of training in specific safety and health areas. Limited visibility and dissemination activities, including six regional workshops, were conducted to create an awareness of the developed instructional materials and networks to assist in stimulating an interest in the use of the materials in vocational training. (Appended materials include a list of the members of the National Advisory Committee for Occupational Safety and Health in Vocational Education, a listing of the 50 module titles, module format and author guide, list of module and instructor resource guide reviewers, and a typical agenda for the diffusion workshops.) (CT)

Final Report

Project No 498AH90020
Contract No 30079C709

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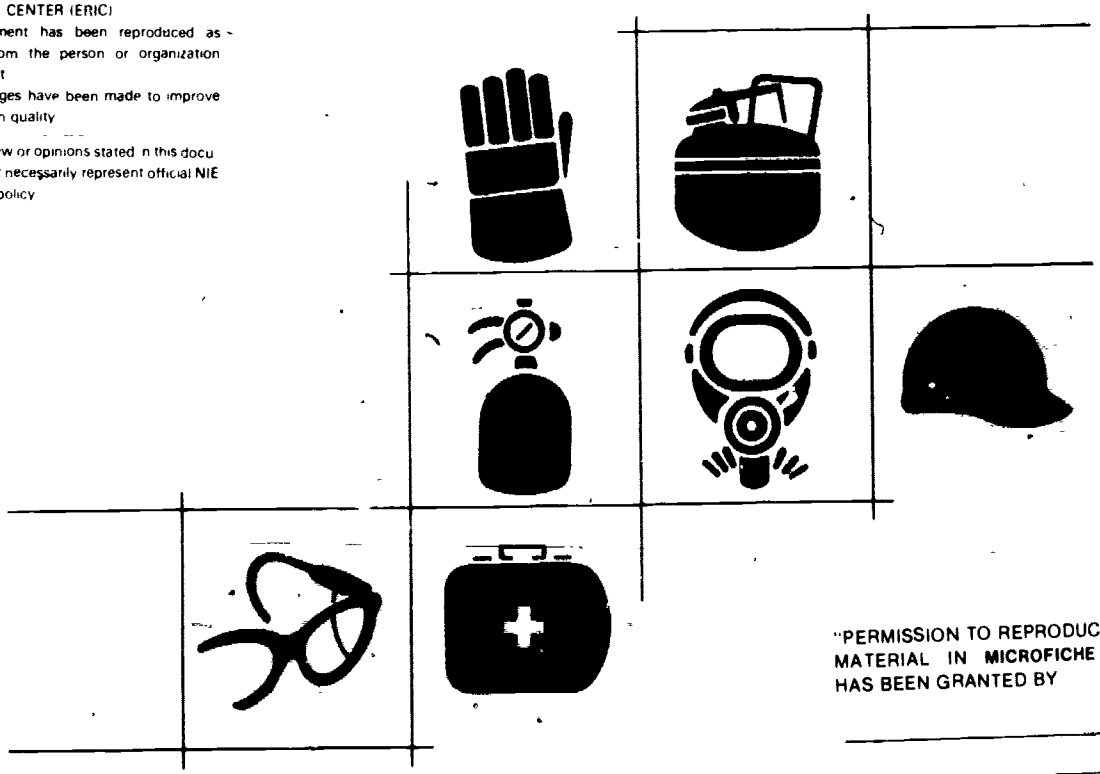
DEVELOPMENT OF SAFETY AND HEALTH INSTRUCTIONAL MATERIALS



January 1982

UNITED STATES DEPARTMENT OF EDUCATION
Office of Vocational and Adult Education
Division of National Vocational Programs

ABSTRACT

Studies have shown that a disproportionate number of accidents occur during the first several months of a worker's career. This evidence suggests that vocational-technical curricula should include instruction in safety and health so that new workers not only are knowledgeable of factors that affect job safety, but that they also possess the proper attitude toward this important part of their jobs.

The Job Safety and Health Instructional Materials (JSHIM) project provides vocational educators and industrial training officers with a series of flexible learning modules that cover a wide variety of safety and health subjects. A total of 50 modules (each about 30 pages) were developed for use in secondary, postsecondary, and adult vocational programs. Instructor resource guides were prepared to aid in selection and use of the modules in each of seven occupational clusters (e.g., Trades and Industrial, Agriculture, Business and Office, etc.).

The modules were written by safety professionals from education and industry. Experts throughout the country, including the OSHA training staff, reviewed and commented on each module. Six workshops held throughout the country provided over 225 vocational educators and industry representatives with copies of these materials. Implementation procedures were described and discussed during the workshops. Those potential users who have examined these materials indicate that their potential utility is extremely broad.

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Waco, Texas

January 1982

The work reported herein was performed pursuant to a contract with the Office of Vocational and Adult Education, United States Department of Education. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Department of Education position or policy.

UNITED STATES DEPARTMENT OF EDUCATION

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PREFACE

Until we experience the consequence of their neglect, the impact of good safety and health practices on our lives, jobs, and economy are seldom recognized. Many workers and employers regard safety and health practices as a nuisance to which low-priority attention must be paid in order to comply with minimum regulatory standards.

Much can be said about the indifference of many employers toward enthusiastic endorsement of safety as a critical skill for job performance; however, except for isolated cases, vocational education has also avoided its responsibility to systematically address safety and health as an essential part of all occupational curricula. The difficulty in these instances is that we are attempting to address personal attitudes in addition to teaching factual information and skills.

Despite this somewhat global criticism about safety attitudes in schools and industry, many individuals do continue to stress safety in the classrooms and pioneer causes to bring about changes in the system. Representatives of this group comprised the cooperative and responsive Project Advisory Committee, whose membership is listed in Appendix A. Two members of this committee who were continuously active and contributed greatly to this project are Dr. Roland Espenschied, Chairman of the AVA Safety Committee, and Mr. Fred Tromley, OSHA Program Chairman at Texas State Technical Institute. In terms of interagency governmental cooperation, a special thanks goes to Dr. Roger Penn and his staff at the OSHA Division of Training and Educational Development, and to Ms. Kate Holmberg, Project Officer for the Department of Education.

Last of all, I want to express my appreciation to a competent, congenial, and hardworking staff, particularly:

Mr. Bruce Lube - Associate Project Director.

Ms. Carolyn Prescott - Research Associate.

Daniel M. Hull

Project Director

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INTRODUCTION

BACKGROUND

The quality and effectiveness of the nation's workforce is significantly influenced by our ability to maintain a safe and healthy work environment. Every year, an estimated 300,000 persons experience some form of occupational disease. 12,000 people die from work accidents, and at least two million more suffer disabling injuries. The 245,000,000 work days lost annually due to job-related illnesses and injuries represent a degradation to the quality of life, a needless escalation in the cost of goods and services, and a serious burden on our nation's productivity.

Because a majority of job-related accidents involve workers within their first six months of employment, safety and health information should be provided during preemployment training. Unnecessary exposure to potential health hazards can be minimized if proper training is provided. Health and safety information, the development of a positive safety attitude, and safe working procedures should be part of the curriculum for every vocational or occupational student. This can be accomplished by offering a separate health and safety course or, more easily, by infusing the information into appropriate, existing courses.

A careful examination of the existing literature on healthy and safe working practices will reveal a wealth of information, very little of which is presented in a format and style suitable for use in classroom, laboratory or on-the-job training situations. Furthermore, much of the existing safety and health information is not identified and/or categorized according to specific occupations.

In order for safety and health instruction to be effective in preemployment vocational training programs, it must be relevant, well organized, understandable, and infused in the job/task training when and where it is needed. In addition, the safety training should be specific, and based on measurable objectives.

PROJECT DESCRIPTION

On October 1, 1979, the Technial Education Research Center - Southwest (TERC-SW) began a two-year project to design, develop and disseminate modular instructional materials needed for infusing safety and health instruction into preemployment vocational training curricula. Specifically, the project included the following major activities:

A. Identify the safety and health training needs for vocational education. Determine specific content areas.

B. Locate and evaluate the suitability of existing materials for use in safety and health vocational training.

C. Determine the topics, content, objectives and outlines for safety and health training materials needed in vocational education.

D. Develop, evaluate and revise approximately 50 instructional modules for safety and health training in vocational education.

E. Prepare 17 instructor resource guides to provide assistance in selection and implementation of safety and health training in specific vocational areas.

F. Conduct limited visibility and dissemination activities to create an awareness of the developed instructional materials and networks to assist in stimulating an interest in the use of the materials in vocational training.

Four modifications were made to the original project Statement of Work:

1. Originally the project called for identification of the needed safety and health training according to the fifteen occupational categories used in career education materials. This requirement was subsequently changed to align the training needs to the seven occupational clusters commonly used in vocational education; i.e.:
   - Agriculture and Agribusiness Education
   - Allied Health Education
   - Business and Office Education
   - Marketing and Distributive Education
   - Technical Education

- Trade and Industrial Education
- Vocational Home Economics Education

Information about job safety and health related to handicapped and special-needs students was to be folded into the seven resource guides related to the occupational clusters.

This meant that the requirement for the original seventeen guides was change to seven, more comprehensive guides.

2. The origina project Statement of Work called for fifteen modules to be completely developed on the project and thirty-five modules to result from minor revisions and format changes of existing materials. However, a search of existing materials revealed only five modules suitable for use on this project. Furthermore, these five were combined to form only two "revised modules;" consequently, 48 modules were completely developed on the project instead of 15.
3. One program dissemination workshop was to be held, and representatives from all the states were to be brought to the workshop (participants' travel to be paid out of contract funds). In order to reduce participant travel costs the Statement of Work was changed to six regional workshops to be held as follows:
   - Newark/November 5-6, 1981
   - Salt Lake City/November 12-13, 1981
   - Indianapolis/November 19-20, 1981
   - Atlanta/December 3-4, 1981
   - Dallas/December 10-11, 1981
   - Honolulu/January 7-8, 1982
4. The duration of the project was extended from 24 to 28 months (until January 31, 1982) because of the time lost in reorganizing the training to align with the seven occupational clusters instead of the 15 career categories, and because of delays in receiving module drafts from contract authors.

This document reports on the activities and achievements of this project, methodologies used, initial reponses to dissemination activities, and projections on the future use of the project deliverables.

PROJECT ACTIVITIES AND RESULTS

The JSHIM project began October 1, 1979, and was completed January 31, 1982. The following major tasks accomplished during the course of this project will be discussed in this section.

- Organize and assemble a Project Advisory Committee.
- Analyze OSHA requirements and their implications in vocational education.
- Conduct a search and prepare a state-of-the-art report on existing occupational safety and health instructional materials.
- Develop new safety and health instructional modules in areas where deficiencies exist.
- Develop vocational safety and health program resource guides for teacher use in organizing vocational safety instruction.
- Conduct visibility activities, including regional diffusion workshops, for teacher trainers, state vocational personnel, and selected industry safety personnel.

USE OF PROJECT ADVISORY COMMITTEE

The first task outlined for the JSHIM project was to develop and maintain cooperative relationships with public and private agencies and groups including the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the National Safety Council, and the National Safety Council Joint Safety Committee with the American Vocational Association. Within two weeks after receipt of this contract, the Technical Education Research Center - Southwest had assembled a Project Advisory Committee of 18 members that consisted of the following:

- Secondary and postsecondary educators.
- Representative of National Institute for Occupational Safety and Health.
- Representative of Occupational Safety and Health Administration.
- Representatives of National Safety Council.
- Industrial hygienists.
- State vocational personnel.

A list of Project Advisory Committee members appears in Appendix A of this report.

The Project Advisory Committee held its first meeting in Dallas, Texas, on November 7 and 8, 1979, to review the direction of project activities.

This meeting early in the project established the Committee in an essential role that was critical to the successful outcome of the project. Major actions and outcomes were as follows:

- A review and modification of a preliminary list of subject titles for which instructional modules should be developed.
- A recommendation that seven occupational clusters - rather than the 15 suggested by the project Statement of Work - be used for grouping instructional modules and instructor resource guides.
- Suggestions for and concurrence with TERC-SW's approach to analyzing OSHA's requirements for their implications in vocational education, and conducting a search and preparing a state-of-the-art report on occupational safety and health instructional materials for each occupational cluster.
- Concurrence of the basic format for modules to be developed.

The second meeting of the Project Advisory Committee was held in Waco, Texas, on May 21 and 22, 1980. Significant actions at this meeting are listed below:

- Reviewed and suggested revisions to the report prepared as an analysis of OSHA requirements for their implications in vocational education.
- Reviewed and suggested revisions to the report showing the state of the art of occupational safety and health instructional materials.
- Suggested an approach and format for the report on the discrepancies that existed between OSHA requirements and the state of the art.
- Examined a sample draft module for structure and content. Concurred on module format, with minor revisions.
- Provided names and addresses of potential module authors and reviewers.

This meeting was critical to the development of outlines and objectives for each of the modules to be developed.

Prior to the third meeeting, held on July 9 and 10, 1981, several modules had been prepared in draft form for examination by Committee members. The following actions were accomplished at this meeting:

- Reviewed contract modifications to extend project time and to develop materials relevant to seven occupational clusters.
- Critiqued an example instructor resource guide and suggested several changes in format, language and content.

- Discussed the utility and function of a certification plan.
- Reviewed a plan for the six diffusion workshops. Suggested other agenda items and speakers. (Two committee members volunteered as keynote speakers at the workshops.)
- TERC-SW project staff requested and received from Committee members suggestions for dissemination strategies.

While the third meeting was the final official gatnering of the Project Advisory Committee, it should be noted that members' participation and contributions were continuous throughout the project and represented an estimated 750 hours donated to the project. Some significant contributions include:

- Identification of module authors.
- Module review.
- Instructor resource guide review.
- Presentation of keynote talks at diffusion workshops.

ANALYSIS OF OSHA REQUIREMENTS AND THEIR IMPLICATIONS IN VOCATIONAL EDUCATION

For the accomplishment of this task, an examination was conducted of the following:

- The purpose of the Occupational Safety and Health Act (OSHAct) and the objectives of the Occupational Safety and Health Administration.
- The scope of "safety and health," including rights and responsibilities of workers and employers.
- Concept, design, format, and educational target population for instructional modules to be developed and/or adapted.

A result of the analysis was establishment of a frame of reference concerning the impact of OSHA, the American National Standards Institute (ANSI), National Electric Codes, the National Fire Protection Association, and other federal, state, and private entities that impact safety for vocational education. The report that resulted from this analysis of OSHA requirements and their implications in vocational education is available from the Center for Occupational Research and Development.*

*Analysis of OSHA Requirements and their Implications in Vocational Education. Waco, TX: TERC-SW, 1980.

SAFETY AND HEALTH INSTRUCTIONAL MATERIALS FOR VOCATIONAL EDUCATION - THE STATE OF THE ART

TERC-SW conducted an examination of safety- and health-related materials to determine the state of the art of vocational materials in this area. The discovered materials were cataloged according to category (print or nonprint) and correlated to the 15 occupational clusters called out in the RFP.

A useful reference document resulted from this search, which can be used as a master catalog by educators interested in finding supporting media and documents to teach safety and health to their students. The report offers answers to the following two questions:

- What safety and health concepts, knowledge, and skills are needed by students and employees?
- What print and nonprint safety and health instructional materials exist relevant to the occupational clusters?

The most prevalent format discovered in the search for existing instructional materials was 16-mm film, available on either a loan or a purchase basis from private industry and public agencies. Included in the second-most abundant classification are single-concept pamphlets that address one topic, often using a "how to" approach. The occupational cluster that has received the most attention by developers of safety and health instructional materials is the Trades and Industrial Education cluster - perhaps because this cluster contains the construction occupations in which hazards are most readily recognized. Other occupational clusters - perhaps because they are perceived as "low hazard" - have received less attention from materials developers.

The report that resulted from this task, "Safety and Health Instructional Materials for Vocational Education - A State-of-the-Art Report," has been included in the ERIC system (No. CE026890), making it available in microfiche format. The report also can be obtained in hard copy from CORD.

DEVELOPMENT OF SAFETY AND HEALTH INSTRUCTIONAL MATERIALS MODULES

By comparison of results of the two preceding studies, TERC-SW was able to determine discrepancies between instructional materials needed for the training of vocational students and those actually available.

The project statement of work called for 50 modules be produced, 35 to result from modification of existing modules, and 15 to be entirely new modules. The state-of-the-art study revealed only five student-oriented modules with specified behavioral objectives that were suitable for modification and/or revision.

Titles, outlines, and objectives were specified by the project staff and Advisory Committee for the 50 instructional modules.* Through study of these titles, outlines, and objectives, the TERC-SW project staff and the Project Advisory Committee members determined that 10 of the 50 modules should prove useful to workers in all seven occupational clusters. Those 10 modules - containing general job safety and health material - were classified as "core modules." The remaining 40 modules treat specific subjects and are needed by workers in one or more, but less than all seven, occupational clusters. They were referred to as specific modules. Thus the core modules (SH-01 through SH-10) contain information useful to all occupational categories, whereas specific modules (SH-11 through SH-50) contain information that is useful to fewer than all of the occupational categories.

The 50 instructional modules included in this project were chosen by staff and Advisory Committee as those for which the need in the seven occupational clusters was most apparent. The lack of available material for use in job safety and health instruction, and the modular design of these 50 modules make this project open-ended in nature. Many cluster-specific modules, beyond the 40 identified, could be developed as time and resources become available. The additional development would add to the impact and applicability of this project. It would also be possible to update the

*Titles of the modules appear in Appendix B; module outlines and objectives can be found in the appendix to the report that resulted from Task E of this project, i.e., identification of discrepancies in materials needed and those available.

existing materials by addition, deletion, or revision of information as OSHA regulations are revised and technological advances are made.

Design of the module format and preparation of the modules are presented in the following subsections.

Design of Module Format

Each of the 50 Job Safety and Health Instructional Materials modules developed by TERC-SW contains the following components:

Introduction - A synopsis of what is presented and why.

Objectives - Measurable objectives that relate to the content of each module are presented, and the objective's page location in the subject matter is noted.

Subject Matter - For most modules, this consists of 20 to 25 pages of content, with all content related to one of the stated objectives.

Activities - Following each portion of subject matter related to an objective is a question for the student to answer as an indication of mastery of that objective.

References - Suggestions for supplementary reading.

Though content will vary from module to module, the basic purpose and function of each section remains the same. TERC-SW recommends that each section be examined during use of a module. The modules are organized in a format that permits maximum flexibility and makes them suitable for use by instructors in almost any occupational or vocational area. This format makes it possible to use the safety and health materials in either of the two following methods of presentation to students.

1. One method of presentation is to organize a separate and distinct safety and health course for students in one vocational area. This approach would permit uniformity of the content presented to all students in that area. Specifically-allocated time frames are available when using this technique.
2. A second approach is to insert safety and health instruction into existing training programs on an as-needed basis. This method would benefit instructional programs that have only limited time and/or facilities available for training activities. Additional advantages

are realized by the ability to present the exact content when it is most relevant to the student's training cycle. For instance, the best time to present information about selection of proper personal protective equipment is immediately before the student needs the information. More specifically, if the student were about to perform a task that required wearing a respirator, the section concerned with respirators of Module SH-12, "Personal Protective Equipment," would be most appropriate.

Modules SH-01 through SH-10 are considered to be core modules, and they have been recommended for use by all vocational education instructors. Much of the content in those first ten modules is basic enough for them to be presented as a unit at the beginning of a course. This does not mean that each objective of the ten core modules must be presented. The recommended approach would be to select those objectives that are appropriate for a given instructional sequence.

Because the Subject Matter section of a module contains distinct subparts relative to each objective, the option is provided to present only that part (or those parts) of the module useful to specific instructional designs. If, at another point in the training cycle, additional information is needed from that module, the additional content can be studied without loss of continuity. Student retention and interest will be enhanced when the safety and health principles have an obvious and direct relationship to activities being performed. If a group presentation format is used, visuals found in the modules can be made into overhead transparencies for ease of discussion.

Module Authors

After outlines and objectives for the 50 modules were developed and approved, the following steps were taken:

- An author was selected for each module. (These authors were not on the project staff, but were subject matter experts who contracted with TERC-SW to write one or more modules.)
- Initial drafts were prepared (edited, typed, illustrated, reproduced).
- Drafts were reviewed and critiqued.

- Modules were revised for use.

Identification and selection of authors was greatly enhanced by suggestions from the JSHIM Advisory Committee members. Thirty-one authors were selected to prepare drafts of the 48 modules. Each author received several items from TERC-SW. The first cover letter identified the person's commitment to author the module and identified some of the basic parameters to be followed (see Appendix C). A second item was an outline and a set of objectives to be used as a guide for module content. Authors were told they might vary from the suggested outline and objectives if needed, provided that they received concurrence from project staff as changes were made.

Specific instructions were also provided in an author's guide that identified the format and basic requirements for each module (Appendix C). These additional items were included in the author package:

- List of the 50 module titles.
- In-house agreement forms.
- Example module.
- Any available references that might be useful in development of this module.

Close contact was maintained with each author during the development process. Some of the authors initially selected were unable to complete their modules and the final number of authors (31) only represents approximately half of those considered during the development cycle.

Preparation of Initial Drafts

Most authors who participated in the development phase were subject matter experts, but some experienced difficulty with the actual process of writing. Drafts received from the authors varied from handwritten with incomplete sentences and only sketchy illustrations to a few that were submitted in a typed format with easily modifiable illustrations. When a draft was received it was given an initial grammatical edit, typed, and preliminary illustrations created for the review process. In many cases, authors were contacted for clarification of content during the draft preparation phase.

Review of Module Drafts

Volunteers were identified to review copies of draft modules. Potential users in secondary and postsecondary schools were among those selected. Not only was the Advisory Committee helpful in identifying reviewers, but most members also participated in the review cycle. A list of reviewers is found in Appendix D. Draft copies of all 50 modules were sent for review to Dr. Roger Penn, Chief of the Division of Training and Educational Development at OSHA. He and his staff carefully critiqued each module and provided significant feedback for the review cycle. An estimated 170 hours of expert review time was donated by OSHA through Dr. Penn and his staff.

Nine reviewers were selected for each of the 50 modules, which means that a total of 450 reviews were solicited for these modules. It was estimated that from one to five hours was spent reviewing each module, or as much as 1300 professional person hours were contributed to this project for module review.

Module Revision

The task of revising the 50 modules proved to be more time-consuming than was originally anticipated. Analysis and resolution of all reviewer critiques resulted in approximately 30 person hours per module, or 1500 hours of staff effort to produce the final drafts of all 50 modules. The revision cycle established one item beyond a doubt: If these modules are to continue to be useful to educators they must be periodically revised and updated.

INSTRUCTOR RESOURCE GUIDE DEVELOPMENT

An instructor guide consisting of five sections was developed for each of the seven vocational or occupational clusters. The purpose of these guides was threefold:

- To define safety and health training in the various occupations.

- To describe the modules and their use.
- To encourage instructors to consider the safety and health needs of all students.

Vocational instructors identify very closely with their respective occupational clusters. For the instructor guides to be useful, each must give specific information that would be factual and credible to instructors within that cluster. The Preface and Introduction of each guide were intended to present that specific factual information and to confirm the realization of the need to teach safety and health to their students.

To assure instructors that the job safety and health instructional modules were in fact designed for their students, each of the program areas within a cluster was defined in the first section of every guide. Some common safety and health problems for each program area were cited. Along with each program area description was a list of modules recommended to the instructor for use in teaching students in that area.

Because only module titles are provided in the first section of a guide, it was considered important to give the instructor an idea of the content of each of the recommended modules. Section II provides that description in a short, two- or three-sentence narrative.

The third section of each instructor guide identifies the basic structure of the 50 modules and describes the function of each of the various parts. Specific descriptions are given to indicate various ways in which an instructor might use the modules. Follow-up activities applicable to almost any instructional situation are also identified. The flexibility of the module format is described in detail, and instructors are encouraged to take advantage of that flexibility by teaching the exact parts of the module appropriate for their instructional program.

In Section IV of the guides, a brief summary of some of the special-needs students is given. No attempt is made to specify all handicaps that could exist; the section merely identifies the need for the instructor to be sensitive to these people and to ensure their safety in classrooms and laboratories. It is recommended that instructors with special-needs students consult with state vocational education agencies for assistance in establishing a safe and healthful environment for their special-needs students.

The final section of each guide describes a procedure that can be used by instructors to issue a certificate to their students acknowledging successful completion of safety and health training. Industry representatives have indicated that this certification would be useful to determine the extent of safety information obtained from a formal training program. The availability of additional certification through the OSHA Training Institute in Chicago, Illinois, is also described.

Two appendices complete each of the guides. The first appendix is a complete list of the 50 module titles. It is anticipated that an instructor may on occasion note a title that appears on the list that has not been formally recommended, but may contain information useful to a particular instructional program. Appendix B of each guide contains a sample module. Each of the seven guides contains a different specific module. The module in each guide is one that has been recommended for several of the program areas in that cluster.

One of the key functions of the resource guide is to aid the instructor in selection of appropriate information to use in a classroom or shop. To ensure accuracy of the recommendations, each of the seven guides was sent to nine reviewers. Selected reviewers included potential users in the various occupational clusters, and AVA Vice Presidents representing each of the AVA subgroups that relate to the seven clusters were included. A list of instructor resource guide reviewers is included in Appendix D.

VISIBILITY AND DISSEMINATION ACTIVITIES

Numerous opportunities were available to project staff to inform vocational educators about the existence of the instructional modules. Specific activities undertaken are listed in chronological sequence.

- The safety and health instructional materials awareness brochure developed for this project was included in a display of TERC-SW educational materials at the Annual Conference of the Texas Technical Society in Wichita Falls, Texas, November 15-17, 1979. Approximately 150 brochures were distributed to attendees.
- Approximately 100 safety and health instructional materials awareness brochures were displayed and distributed through National Safety Council booths at a convention of the American Vocational Association (AVA) in Anaheim, California, December 1, 1979.

- The safety and health instructional materials awareness brochure was made available to approximately 300 members who attended the National Conference on Meeting Energy Workforce Needs held in Washington, D.C., February 26-28, 1980.
- Approximately 200 safety and health information brochures were sent to schools and individuals who inquired about TERC-SW instructional materials.
- Professor Roland Espenschied, Department of Agricultural Engineering, University of Illinois, made a presentation to the Region III AVA meeting in St. Louis, Missouri, May 30 and June 1, 1980, describing the JSHIM project and recommending AVA support for these materials.
- A paper that described the project and its products was submitted to the Adult Vocational Education Association for presentation at the National AVA meeting held December 5-9, 1980, in New Orleans, Louisiana.
- Copies of the reports resulting from Tasks C, D, and E of this project were provided to Dr. Michael Dyrenforth, Professor at the University of Missouri in Columbia.
- The Project Director visited Utah Technical College and the City College of San Francisco to describe the JSHIM project to instructional and administrative staffs.
- The Associate Project Director presented a paper entitled "Job Safety and Health Instructional Materials Project" to the Adult Education Division at the National AVA Conference in December 1980.
- An update report concerning the status of the JSHIM project was presented to the AVA/NSC Joint Safety Committee in December 1980.
- The State-of-the-Art Report was submitted to ERIC, and an accession number was assigned to the report.
- Mr. Lorin (Bud) Chapman, made a presentation on "Youth Safety in the Workplace" to the Illinois Cooperative Vocational Educational Coordinators' Association in August 1981. He was provided with JSHIM brochures for use during his presentation.
- Mr. Dan Elwood, Supervisor of Curriculum and In-Service Training in South Dakota, conducted an in-service workshop for a group of vocational instructors in September 1981. He distributed several JSHIM brochures during his discussions of the Safety and Health project.
- The Project Director and Associate Project Director attended the NNCCVTE meeting for state liaison representatives, in Atlanta, Georgia (July 1981), and presented information about the JSHIM project. Products of current and past TERC-SW projects were displayed and information distributed at the NNCCVTE meeting in Atlanta.
- Mr. Ben Albright presented the JSHIM project and its products to industrial arts teachers in South Carolina, November 5, 1981.

- Presentations were made to the Joint Safety Committee and the National Vocational Agricultural Teachers Association meeting in Atlanta, Georgia, at the annual AVA meeting, December 1981. More than one hundred copies of various materials were distributed to conference attendees.

DIFFUSION WORKSHOPS

Six regionally located workshops were scheduled at the following locations on the dates listed, to acquaint state and territory educators and employers with the Job Safety and Health Instructional Materials available as a result of this project:

- Newark, New Jersey, November 5-6, 1981
- Salt Lake City, Utah, November 12-13, 1981
- Indianapolis, Indiana, November 19-20, 1981
- Atlanta, Georgia, December 3-4, 1981
- Dallas, Texas, December 10-11, 1981
- Honolulu, Hawaii, January 7-8, 1982

The diffusion workshops were designed to accomplish two general objectives:

1. To familiarize participants with the materials developed during the project, their use and availability.
2. To determine what mechanisms could be used to enhance utility and accessibility of project materials for all interested users.

A common agenda (see Appendix E) was used throughout the workshops to accomplish the stated objectives. The first day of each workshop was primarily spent discussing various aspects of objective one. Specific items covered provided participants with:

- Basic information concerning steps in the developmental process.
- An insight into format and use of the modules.
- A review copy of all completed modules.
- Practice in selecting modules for a given program.

During the second day of activities participants were asked to provide feedback to three questions, including:

1. What are the major problems and attitudes encountered when implementing safety and health training?

2. What are some techniques used to create student interest in safety and health training?
3. What mechanisms are useful wthin your state to best disseminate these materials to instructors?

Results of discussions concerning the three questions will be summarized in the following three sections.

1. Problems Implementing Safety and Health Programs

While each workshop produced a different specific list of problems there were several common elements of concern expressed by most of the participants in each workshop. No attempt is made to rank order the concerns, but the list does represent the most frequently noted problems:

- A basic lack of support for safety and health from administrators and management was evident. Most agreed that all administrators and managers are not opposed to these programs and activities but are reluctant or unable to expend funds for proper tools, equipment, and personal protective items. Lack of support is also demonstrated when teacher loads are increased, creating dangerous overcrowding in classrooms and laboratories.
- The limited amount of teaching time available means that safety and health training requires a high priority in their curriculum content. Schedules are already tight, and adding any significant instructional activities means that certain skills training might have to be eliminated.
- Many instructors indicated they were not aware of the existence of appropriate teaching materials for their students. Curriculum Coordination Center (CCC) staff were present at five of the six workshops and were provided time on the agenda for describing the availability of the CCC as a source for searching for instructional materials. All participants felt that the project-developed material would relieve this problem.
- The lack of a uniform set of safety standards at the state, district, or even local level was another commonly noted problem. Inconsistent or nonexistent enforcement create difficulty for individual teachers trying to include safety and health as a part of their programs.

- Students, faculty, and administrators with negative safety attitudes were another concern of many of the participants.
- Inadequate training for instructors (which may contribute to poor faculty attitudes) was cited on several occasions. In some cases, the lack of training might be a reflection of lack of administrative support as well.

A few other specific problems were noted by participants, but many were fundamentally a result of or part of one of the previously-noted problems.

2. Creating Student Interest in Safety and Health

All participants agreed that, regardless of what is being taught, student attitudes and involvement are critical to a successful safety and health program. Specific techniques for behavior modification are almost as varied as the number of participants, but a common element was noted. In all cases the techniques employ either positive or negative reinforcement in an attempt to modify student behavior.

One common approach suggested is to include a student's safety and health knowledge and attitude as a significant component of the course grade. An obvious application of this approach is to lower a student's grade when safety infractions occur. Other instructors indicated that they require a specific level of safety achievement before the student is allowed to use specific equipment or procedures.

A second approach is to actively involve students in school-wide safety and health programs. Some instructors work through youth organizations to encourage a safety-conscious student body. Other suggestions were to have student monitors and student-operated inspections for not only the classroom but, in some cases, the entire educational facility. Safety awards and recognition are part of some instructors' planned safety activities. The general consensus was that peer pressure is an effective tool and that student involvement is a good approach to use if possible.

Other suggestions included:

- Bring in accident victims to talk to classes.
- Simulate an accident to practice emergency procedures to be used.
- Show films, slides, or other graphics depicting accidents and their results.
- Have students prepare slides and presentations for their own class and outside work areas for discussion.
- Take field trips to local industries and observe actual safety and health conditions (good and bad).
- Involve students in design and development of safety rules for their shops.
- Issue a certification card when a student passes safety tests.
- Post the number of days worked (or in a class) without an accident.
- Use current and relevant posters to create safety interest and awareness.

One problem of student motivation in safe practices centered around the use of personal protective equipment and machine guards. One instructor indicated that, when he sees a guard on a saw or other piece of machinery being bypassed, he takes a small box from his desk drawer. The box is lined with cotton and has a hole in the bottom for his finger to pass through to lie on the cotton. When the box is opened, it appears as if the finger is detached and lying on the cotton. The students are asked if that is the way they want their fingers to look.

Eye protection for students was a major concern for many instructors. Various techniques were suggested to motivate continuous use of eyewear. Some shop facilities provide protective eyewear, others expect students to bring their own. Signs, posters, or plaques should be posted in prominent places near the entry of the room, indicating the requirement that all who enter must wear eye protection. When students fail to either bring or wear their glasses, some instructors require students to use odd-shaped or colored glasses to wear until they bring their own. Other instructors refuse the student entry into the work area unless protective eyewear is used.

When one instructor notices students with their protective eyewear hanging around their necks or on top of their heads, he takes a small box of artificial, glass eyes and asks them to select the one they would like so that he can order it for them before the accident.

While these techniques have a good dramatic effect, and serve to get students' attention, many instructors felt that teaching safety through shock, drama, and fear was, at best, a limited approach. Safety must be a part of the entire program. As one vo-tech school administrator put it, "If they aren't learning to work safely, they aren't learning to do the job."

The consensus was that, regardless of rules and regulations, if the proper example is not set by the instructor or visitors, it is difficult to convince students that they need to follow the rules. All instructors should be consistent in practice, as well as in their enforcement of established safety rules.

3. Dissemination Mechanisms.

Responses to this question indicate that there is definitely not a single dissemination mechanism applicable to all schools, districts, or even states. Many individuals indicated that there is no organized mechanism to ensure that all teachers within a state receive all information or materials that have been identified. Some participants noted that a communications network is available within either the school, district, or state but not within all three. Another network that exists is within an occupational cluster, as faculty periodically meet with state and/or district supervisors for that cluster. Some states have state-level vocational administrators who maintain close contact with all state vocational educators.

A consensus was that the most effective approach should result in the individual instructor receiving timely, accurate, useful and inexpensive teaching materials. All participants were generally well pleased with the safety and health modules and felt that they were going to be very useful in their respective programs. Many also indicated their willingness to share the modules and resource guides they

received with other instructors within their school systems. Administrators and supervisors outlined plans for instructor conferences and meetings to be used to encourage instructors to use these materials. The project staff was encouraged by many participants to continue actively promoting the use of these materials; several requested that project staff members make presentations of these materials to faculty meetings. Participants were also provided copies of the seven instructor resource guides with a detailed explanation of their use. A final agenda item was a discussion of the availability of the safety and health materials from CORD.

CONCLUSIONS AND RECOMMENDATIONS

The safety and health of the American worker has been the concern of many individuals and organizations since the beginning of the industrial revolution. Only during recent years, however, has emphasis been placed upon training as a mechanism to reduce accident and injury rates. This project represented a major effort on the part of the Federal government to assist vocational education and industrial trainers in the development of pertinent, usable materials to help them provide safety and health training. An overall conclusion resulting from feedback of those who have seen the materials combined with the number of requests for copies from those who have not seen the materials, indicates that a significant step has been made toward achieving that goal. The project, however, was not completed without some problems and significant challenges to project staff, authors, and reviewers.

PROJECT PROBLEMS

Initial research was bound by the original contract to use a cataloging approach that suggested vocational education be grouped into 15 career categories. A significant amount of time was devoted to an attempt to divide vocational education programs into these 15 categories. It was finally concluded that the use of these categories caused difficulty not only for the contractor but also for vocational educators. Although the switch to a seven-cluster approach required a contractual modification that consumed project time, it resulted in a much more usable end product.

A second problem arose during the module development phase. Outside authors were used to gain the greatest expertise available for each module topic. Even though all authors were given careful individual guidance as they created their drafts, an unexpected amount of effort was required to prepare a preliminary draft for review purposes. Many authors missed time deadlines, submitted incomplete drafts, and failed to indicate sources of copied text and illustrations. Reviewers noted many inconsistencies in content, and most modules received a severe critique from reviewers in the Occupational Safety and Health Administration. As a result, a significantly increased effort was expended by project staff during the revision cycle.

Final drafts of the modules presented at the dissemination workshops, however, received high praise for their quality and content accuracy.

Addressing the materials to handicapped and special-needs students represented a third project-related problem. It became obvious early in the project that it would not be reasonable to consider all forms of handicaps and special needs that an individual could possess. An attempt to include content in each module also became unrealistic due to module length and the previously mentioned diversity of individuals in this group. For these two reasons it was conceived that the instructor resource guides would be the most appropriate place to include this type of information. The basic groups were identified, and suggested instructional adaptations were recommended to accommodate these individuals. It was also pointed out that each state has representatives dedicated to assisting to instructors in adjusting of programs for special-needs students.

PROJECT CHALLENGES

One significant challenge was met when it was realized that, though authors were submitting modules dedicated to content mastery, the Advisory Committee stressed a greater need for positive attitude development. A major effort was expended by project staff during the revision cycle to avoid the trap of making the modules appear to be OSHA compliance manuals. Lists of "do's and don'ts" were carefully eliminated. An increased use of visuals and examples replaced lengthy descriptions to make the materials more interesting.

A second challenge occurred early in the project when it was realized that there were thousands of occupational categories to address within the scope of 50 modules. By necessity then, many modules are topical in nature, appealing to several occupational areas. Subdivision of each module by objective allows instructors in each occupational category to select those parts applicable to their training needs. For example, Module SH-22 "Ladders and Scaffolding Safety" might contain some information useful to each cluster. A hypothetical percentage of content in SH-22 that might be applied to each cluster would be as follows:

100% - Trade and Industrial Vocations
75% - Agricultural and Agribusiness Education
50% - Technical Education
30% - Marketing and Distributive Education
25% - Business and Office Education
10% - Allied Health Occupations
10% - Home Economics Education

A final challenge for CORD is to maintain the modules with current updated information and continue the dissemination activities. Regardless of quality and relevance of these materials at the time of this writing, it is realized that some will be obsolete within a few months. The project staff and management of CORD act on the belief that the benefit of this and other projects is not the survival of this organization, but the development and continued updating of materials that will have a positive impact on the education and training of American youth and workers.

RECOMMENDATIONS

- Many classroom teachers who reviewed these materials felt they would be used more effectively if they contained appropriate media: at a minimum, a set of overhead transparencies or transparency masters to accompany each module. Much of the material would benefit from the addition of other forms of media such as slides, and audio or video tapes to demonstrate safe practices.
- The entire field of safety and health cannot be covered in 50 modules of approximately 30 pages each. Modules resulting from this project, however, form an excellent framework to which other subject specific modules can be added. A basic study of selected occupations could identify other topics to be added that would create a more specifically tailored package of instruction.
- Considerable interest in the safety and health instructional materials has been demonstrated by schools and employers. Additional dissemination efforts are required to move these interests into a broad usage of the materials. Workshops for vocational teachers should be conducted in each state.

- A project is needed to provide similar instructional modules related to mine safety and health. Mining is an extremely hazardous occupation in an expanding field and apparently in need of assistance in systematic training. A cooperative effort with USED and MSHA could produce additional training materials that have potential for saving many lives.

APPENDIX A

National Advisory Committee for Occupational Safety and Health in Vocational Education

NATIONAL ADVISORY COMMITTEE FOR OCCUPATIONAL SAFETY AND HEALTH IN VOCATIONAL EDUCATION

Mr. Daniel M. Hull, Chairman
President
Center for Occupational Research and Development (formerly Technical Education Research Center - Southwest)
Waco, Texas

Mr. Robert C. Barr
Assistant Division Director
National Fire Protection Association
Boston, Massachusetts

Mr. Jerry Bigham
Director of Vocational Education and Industrial Arts
Borger Independent School District
Borger, Texas

Mr. James M. Cogdell
Assistant Director, Vocational Industrial Education
Texas Education Agency
Austin, Texas

Dr. Roland F. Espenschied
Professor of Agricultural Engineering
University of Illinois
Chairman, AVA Safety Committee
Urbana, Illinois

Mr. Charles L. Gilmore
Associate Professor, Industrial Engineering
Texas A & M University
College Station, Texas

Mr. Steve Goode
Industrial Hygienist
Firemen's Fund Insurance Company
Dallas, Texas

Mr. Jesse M. Harris
Director, Science and Technology Magnet High School
Dallas Independent School District
Dallas, Texas

Mr. Harold E. Heldreth
Secretary, American Vocational Association/ National Safety Council Joint Safety Committee
Chicago, Illinois

Dr. Larry Key
State Director of Vocational Education
Helena, Montana

Mr. Carrol V. Lovett
Manager, Safety and Property Protection
Xerox Corporation
Stanford, Connecticut

Ms. Donna McMullen
Special Needs Instructor
Waco Independent School District
Waco, Texas

Dr. George Mehallis
Executive Director, Technical Education
Broward Community College
Fort Lauderdale, Florida

Mr. Frank Paschal
Industrial Hygienist
General Dynamics Corporation
Fort Worth, Texas

Dr. Roger Penn
Chief, Division of Training and Educational Development
Occupational Safety and Health Administration
Washington, D. C.

Mr. Frederick A. Trombley
Program Chairman, Occupational Health and Safety
Texas State Technical Institute
Waco, Texas

Ms. Donna Volatile
National Safety Council
Chicago, Illinois

Mr. James Walters
Public Health Advisor
Division of Training and Manpower Development
National Institute of Occupational Safety and Health
Cincinnati, Ohio

APPENDIX B

JOB SAFETY AND HEALTH INSTRUCTIONAL MATERIALS
MODULE TITLES

JOB SAFETY AND HEALTH INSTRUCTIONAL MATERIALS
MODULE TITLES

SH-01 Materials Handling
SH-02 The Role of OSHA in Safety and Health
SH-03 Fundamentals of Electrical Safety
SH-04 First Response to Medical Emergencies
SH-05 Fire Prevention and Emergency Procedures
SH-06 Walking and Working Surfaces
SH-07 Safety Signs, Tags, and Color Codes
SH-08 Recognizing Job Health Hazards
SH-09 Recognizing Job Safety Hazards
SH-10 Structural Egress and Emergency Procedures
SH-11 Business and Office Safety
SH-12 Personal Protective Equipment
SH-13 Industrial Sanitation and Personal Facilities
SH-14 Using Ropes, Chains, and Slings Safely
SH-15 Agribusiness Safety
SH-16 Material Hoist Safety
SH-17 Mechanized Off-Road Equipment Safety
SH-18 Safe Operation of Commercial Vehicles
SH-19 Safety with Hand and Portable Power Tools
SH-20 Precautions for Explosive Materials
SH-21 Marine and Longshoring Safety
SH-22 Ladder and Scaffolding Safety
SH-23 Warehousing Storage and Retrieval Safety
SH-24 Machine and Woodworking Tool Safety
SH-25 Safety Features of Material and Personnel Movement Devices
SH-26 Safety for Compressed Gas and Air Equipment
SH-27 Safety in Elevators and Grain Handling Facilities
SH-28 Welding, Cutting, and Brazing Safety
SH-29 Hazardous Materials Safety
SH-30 Safe Handling and Use of Flammable and Combustible Materials
SH-31 Overcurrent and Electrical Shock Protection
SH-32 Working Safely in Confined Spaces

SH-33 Vibration and Noise Control
SH-34 Safety Guards for Machinery
SH-35 Ionizing and Nonionizing Radiation Protection
SH-36 Safety Features for Floor and Wall Openings and Stairways
SH-37 Safety of Concrete, Forms, and Shoring
SH-38 Excavating, Trenching, and Shoring Safety
SH-39 Steel Erection Safety
SH-40 Electrical Power Transmission and Distribution Safety
SH-41 Safety Practices for Demolition Procedures
SH-42 Safe Use of Powered Industrial Trucks
SH-43 Safety Practices for Commercial Diving
SH-44 Exhaust, Dust Collection, and Ventilation Systems
SH-45 Coast Guard Regulations Applied to Offshore Drilling
SH-46 Chemical Hazards and Waste Disposal Safety and Health
SH-47 Safety and Health in Vocational Education
SH-48 OSHA Training Programs
SH-49 Establishing a Company Safety and Health Program
SH-50 Agricultural Chemical and Pesticide Hazards

APPENDIX C

Letter to Authors

Author Guide

TECHNICAL EDUCATION RESEARCH CENTER · Southwest
801 Lake Air Drive, Suite C Waco, Texas 76710
Telephone 817-772-8756

March 12, 1981

Mr. Bill Kircheiner
Corporate Safety and Health Department
Brown and Root, Inc.
P. O. Box 3
Houston, TX 77001

Dear Mr. Kircheiner:

Your interest in the Job Safety and Health Instructional Materials project is appreciated. In your telephone conversation with Mr. Ellis Lindsey, you requested more information concerning Module SH-39, "Steel Erection Safety." Enclosed are several items that you or one of your colleagues should find useful when writing this module. They include:

- A suggested outline and set of module objectives. These are to be used as a guide when writing the module. Deviations are acceptable, but should be coordinated with project personnel.
- List of all 50 modules to give you a perspective of the other modules that appear in the series.
- An Authors Guide, which specifies some module requirements for all authors.
- An example module for you to use as a reference as to how another author has treated a specific topic.
- A consultant agreement form to be signed and returned.
- One copy of an author invoice form to be signed and returned.

Modules should be approximately 30-50 pages, complete with illustrations. You are not required to submit finished illustrations, but they should be in a form usable by our illustrators for redrawing. Please identify your sources for all illustrations.

These modules are intended to be used by students with an approximate eighth-grade reading level. Students could be in secondary, postsecondary, or adult education programs representing any vocational or occupational area. Module SH-39 has a greater degree of audience specificity than some other titles; however, keep in mind that those reading the module probably have little or no work experience in steel erection.

Project deadlines are such that I must ask authors to complete their modules as quickly as possible. The preferred time frame would be by the end of this month. A few days flexibility might be possible if coordinated with project staff. Please contact me as soon as you have received these materials and have made a judgment concerning the authorship of this module.

Sincerely,

Bruce M. Lube

Bruce M. Lube
Associate Project Director

BML:pk
Enc.
cc: Daniel M. Hull, Project Director

JOB SAFETY AND HEALTH INSTRUCTIONAL MATERIALS
AN AUTHOR'S GUIDE

The Job Safety and Health Instructional Materials (JSHIM) modules have an established format and, to maintain consistency, authors are asked to follow this format in order to submit an acceptable module. Each module has a series of parts, including:

- Introduction
- Prerequisites
- Objectives
- Subject Matter
- References
- Answers to Activities

While the content of each section will vary from module to module, its intent and function remain the same. A brief description of the intent of each part is described below.

INTRODUCTION - (approximately ½ to 1 page)

In the Introduction to the module, students should be given a synopsis of what they are going to be studying - and why. The author might relate probable applications for the knowledge and skills students will have acquired after studying the module to job-related activities. Remember, this is the place to "sell" the student on the need to master this content.

PREREQUISITES - (brief, one sentence)

The author must suggest prerequisite student knowledge for each module. The sentence begins as follows: "The student should have completed..." The prerequisites could be other modules. If no prior knowledge or skills are required, it is permissible to so indicate, such as "No previous safety and health information or instruction is needed."

OBJECTIVES - (approximately 10 to 15 objectives per module)

Authors have been provided measurable objectives that describe and identify what the students are expected to learn. The objectives and content outline are provided as a guide to the desired information in the module. Authors are permitted to suggest additions, deletions, or modifications to the objectives and outline, but should consult with project staff before making changes.

SUBJECT MATTER - (approximately 20 to 25 pages)

Most modules will lend themselves to 20 to 25 pages of subject matter. The suggested length is only a guide. The author should treat the subject thoroughly and sequentially, using the objectives and outline. As subject matter is developed, it should be related to each objective, and the objective should be restated at the beginning of that content. This might be equated to a "mini-chapter" within the subject matter.

ACTIVITIES - (at least one for each objective)

Following each of the "mini-chapters," authors are to include at least one item that students can use to test their comprehension of the objective and subject covered.

Each activity should be in the form of a short answer, multiple choice, matching, or true-false kind of question. The intent is to summarize the content just covered and allow the student to receive immediate and, hopefully, positive feedback. All answers to activities should be included at the back of the module.

REFERENCES

The author should list all references used as resource material for writing the module. If copyrighted material is used as a source of illustrations, the information should be noted and correlated to the specific illustration(s) used.

Each module should be approximately 30 to 35 pages, complete with illustrations. Authors are not required to submit finished illustrations, but they should be in a form usable by our illustrators for redrawing. Please identify your sources for all illustrations.

The intended audience for these modules includes secondary, postsecondary, and adult education students in any occupational or vocational area. Hopefully, industry-based training programs might find these materials equally useful.

Because these modules are being designed for use by all workers, including those with handicaps, any comments relative to limitations that might exist for the handicapped worker are desirable.

While writing styles vary from person to person, if the above guidelines are used and the following Rules of Style are followed, a useful module should result.

RULES OF STYLE

The author should keep the following points in mind when writing an instructional module:

1. Assume nothing.
2. Always define terms and acronyms. If they are important enough to be included, they are important enough to be understood by the student.
3. Always write in third person. Do not use first or second person pronouns, such as I, you, we, he, she...
4. Hold use of adverbs to a minimum.
5. Pay attention to gender by avoiding masculine pronoun reference.
6. Do not write in a "folksy" style.

7. Use short sentences. Compound-complex sentences should be kept to a minimum.

8. Organize subject matter so that thought patterns flow smoothly (one idea leads to the next).

9. Typed copy is preferred. If the module is handwritten, please do not use pencil. Use black ink on 8 1/2 x 11 white paper.

10. Before submitting a module, please check to be sure that all parts are included and clearly labeled.

11. These modules are intended to be suitable for students with approximately an eighth-grade reading level, with little if any safety and health skills or knowledge.

APPENDIX D

List of Module Reviewers

List of Instructor Resource Guide Reviewers

JOB SAFETY AND HEALTH INSTRUCTIONAL MATERIALS

MODULE REVIEWERS

Chester Abernathy, Diesel Mech. Instructor
Carrigan Training Center
Wichita Falls, Texas

Richard Adamsky, Professor of Education
Temple University
Philadelphia, Pennsylvania

Dale Alexander, Auto Mechanics Instructor
University High School
Waco, Texas

W. L. Alexander, Director
Institute of Environmental Studies
Baylor University
Waco, Texas

Henry Alf, Safety Consultant
Dix Shipping Company
Corpus Christi, Texas

David Baker, President
National Institute of Farm Safety
Columbia, Missouri

Thomas Boster, Safety Consultant
Lawrence Livermore Laboratories
Livermore, California

Don Boyd, Safety Inspector
Central Texas Clarklift, Inc.
Waco, Texas

Margaret Brewner, Special Needs Consultant
Elgin School District Vocational Programs
Elgin, Illinois

Gary Brim, Central Freight Lines, Inc.
Waco, Texas

Ben Bullard, Assist. Director of Safety
Texas Farm Bureau
Waco, Texas

Warren John Burdick, Loss Control Rep.
Floyd West Insurance Company
Waco, Texas

Elinor Burgess, Supervisor, Marketing and
Distributive Education
Fairfax County Public Schools
Falls Church, Virginia

Manuel Cerda, Jr., Auto Mech. Instructor
Nixon High School
Laredo, Texas

Doyel Chandler, Vocational Director
Kirbyville Independent School District
Kirbyville, Texas

Thomas K. Chisholm, Safety Manager
University Safety Office
Austin, Texas

Donald Clay, Building Trades Instructor
Brazosport High School
Freeport, Texas

James M. Cogdell, Assistant Director
Vocational Industrial Education
Texas Education Agency
Austin, Texas

Joseph D. Crum, Electrical Trades Instr.
Killeen High School
Killeen, Texas

Walter Cunningham, Printing Instructor
Andrews High School
Andrews, Texas

Paul Day, Vice President
American Vocational Association
St. Paul, Minnesota

Ken Delucca, Industrial Educ. Instructor,
& Joint Safety Committee
Keene State College
Keene, New Hampshire

Robert Dennis, CVAE Instructor, General
Construction Trades, Olton High School
Olton, Texas

Herman Diaz, Auto Body Repair Instructor
Edinburg High School
Edinburg, Texas

Doug Dry, Safety Manager
Midco Sling and Cable Company
Dallas, Texas

Robert Dugger, International Union of
Elevator Constructors
Dallas, Texas

Edwin Eaton, Machine Shop Instructor
Borger High School
Borger, Texas

Leonard Eisenberg, Elec. Wiring Instr.
South Technical Education Center
Boynton Beach, Florida

Roland F. Espenschied, Professor
Agricultural Engineering
University of Illinois
Champaign, Illinois

L. D. Friesen
Federal Highway Administration
Fort Worth, Texas

Dan Fulkerson, Technical Editor
MAVCC
Stillwater, Oklahoma

Cruz Garza, Jr., Auto Body Repair Instr.
Rio Grande City High School
Rio Grande City, Texas

Fred George, Safety Manager
Stutz Industries
Waco, Texas

Bill Gillam, Safety Manager
Electrical Power Technology
Texas State Technical Institute
Waco, Texas

Steve Goode, Industrial Hygienist
Firemen's Fund Insurance Company
Dallas, Texas

Bill Goodwin, Sales Manager
DuPuy Oxygen Company, Waco, Texas

Randy Gray, Owner-Manager
Waco Welder's Supply, Waco, Texas

Jesse Harris, Director
Science and Technology Magnet School
Dallas Independent School District
Dallas, Texas

Thomas Harris, Associate Professor
Pittsburgh State University
Pittsburgh, Kansas

Dennis Hirschfelder
Director of Eye Safety Programs
National Society for the Prevention of
Blindness, New York City, New York

Paul Holroyd, Safety Director
Central Texas Iron Works, Waco, Texas

Bob Honaker, Vice President
J & J Marine Diving Company
Pasadena, Texas

Phillis Jones, Vocational Office Education
Austin, Texas

J. Carl Kee, Program Chairman
Nuclear Technology
Texas State Technical Institute
Waco, Texas

Larry Key, Director of Vocational Educ.
State of Montana
Helena, Montana

L. C. Kilbreth, CVAE Instructor
General Mechanical Repair
Pampa High School, Pampa, Texas

Jose Leal, Printing Instructor
Weslaco High School, Weslaco, Texas

Henry Lippe, Boiler Inspector
Central Engineering Co., Waco, Texas

Bill Lipscomb, Safety Manager
General Tire Company, Waco, Texas

Tom Liston, Manager of Student Services
Texas State Technical Institute
Waco, Texas

C. F. Lovett, Manager of Safety and
Property Protection
Xerox Corporation, Stanford, Connecticut

Ray Mabry, Owner, Texas Power Vac
Waco, Texas

Edith Maletsky, R. N., Educ. Coordinator
Burn Foundation of Greater Delaware Valley
Philadelphia, Pennsylvania

Jim Mallory, Independent Safety Consultant
Safety Management Associates
Hewitt, Texas

Bob Masak, Director of Infection Control
and Safety, Hillcrest Baptist Hospital
Waco, Texas

Joan R. McFadden, College of Family Life
Logan, Utah

Lee Noble, President, Local 1224
International Longshoremen's Association
Corpus Christi, Texas

Oliver Oberlander, Associate Professor
Industrial Education and Technology
Central Michigan University
Mount Pleasant, Michigan

Frank Paschal, Industrial Hygienist
General Dynamics Corporation
Fort Worth, Texas

Wallace C. Pelton, Machine Shop Instr.
Texas State Technical Institute
Waco, Texas

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Roger Penn, Chief, Division of Training
and Educational Development
Occupational Safety and Health Administration, Washington, D. C.

Bobby Pettigrew, Production Superintendent
Pettigrew Painting, Waco, Texas

James Phillips, Area Supervisor
Vocational Agriculture
Texas Education Agency, Austin, Texas

Sam Pierce, Independent Safety Consultant
Tuscaloosa, Alabama

Alan Pitney, Industrial Engineer
Levi-Strauss & Co., Waco, Texas

Charles Prescott, General Contractor
Durham, North Carolina

Jack Reed, Director of Business Education
and Office Administration
University of Northern Iowa

Olen T. Robinson, Vocational Administrator
Building Inspector/Safety Director
Chipola Junior College, Marianna, Florida

Evan Rosof, Independent Truck Driver

Elwood E. Rowe, Safety Inspector
Lehigh Valley Vocational Technical School
Schnecksville, Pennsylvania

Pedro Ruiz, CVAE Instructor
General Mechanical Repair
Big Spring High School, Big Spring, Texas

Jean Samples, Marketing and Distributive
Education, Houston, Texas

Vince Seyer, Director of Physical Plant
Southeast Missouri State University
Cape Girardeau, Missouri

Doyle Short, Commercial Diving Consultant
Texas State Technical Institute
Waco, Texas

Ed Smith, Industrial Electrical Contractor
Waco, Texas

Edward Smith, Radiologist
Waco Radiological Clinic, Waco, Texas

Travis L. Smith, Auto Mechanics Instructor
Abilene High School, Abilene, Texas

William R. Smith, Director of Facilities,
Equipment, and Safety Control
New Jersey Department of Education
Trenton, New Jersey

Bill Snow, Safety Director
Texas Power and Light Company
Dallas, Texas

Tom Sommer, Assistant, Safety Competencies
Project, Center for Studies in Voc. Ed.
Florida State University
Tallahassee, Florida

Frederick A. Trombley, Program Chairman
Occupational Health and Safety
Texas State Technical Institute
Waco, Texas

Brian Truelove, Metaire, Louisiana

Jo Watts, Vocational Office Education
Austin, Texas

James Weaver, Building Trades Instructor
Coahoma High School, Coahoma, Texas

James D. White, Auto Mechanics Instructor
Denton High School, Denton, Texas

Sue Williams, Electrician
Fusion Research Center
University of Texas
Austin, Texas

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JOB SAFETY AND HEALTH INSTRUCTIONAL MATERIALS

RESOURCE GUIDE REVIEWERS

AGRICULTURE AND AGRIBUSINESS OCCUPATIONS

Dr. David Baker
Extension Safety Specialist
University of Missouri

Dr. Roland F. Espenschied, Chairman
AVA Safety Committee

Mr. John Hillison, Assoc. Professor
Agricultural Education
Virginia Polytechnic Institute and State University

Mr. Robert Kelley, State Director
Agribusiness Education
Kentucky

Mr. Layle Lawrence, Teacher Educator
West Virginia University

Dr. James W. Legacy
Agricultural Education and Mechanization Department
Southern Illinois University

Mr. Kenneth Olcott, Exec. Director
National Postsecondary Agricultural Student Organization

Mr. Bob Patton, Director
Midwest Curriculum Coordination Center

Dr. Roger Penn, Chief
Division of Training and Educational Development
Office of Training and Education
Occupational Safety and Health Administration

ALLIED HEALTH OCCUPATIONS

Ms. Marianne Boetner, Supervisor
Health Occupations Education
Colorado State Board for Community Colleges and Occup. Education

Mr. James Forcher, Chairman
Dental Laboratory Technology
Texas State Technical Institute

Ms. Edith Maletsky, R.N.
Education Coordinator
Burn Foundation of Greater Delaware Valley

Ms. Gretchen Moine, Assistant Dean
Health Occupations Education
Kirkwood Community College

Mr. Bob Patton, Director
Midwest Curriculum Coordination Center

Dr. Roger Penn, Chief
Division of Training and Educational Development
Office of Training and Education
Occupational Safety and Health Administration

Ms. Mildred Pittman, Assist. Prof.
Health Occupations Teacher Education
Texas Woman's University

Ms. Nancy L. Raynor, Chief Consultant
Health Occupations Education
North Carolina

Ms. Janice Roberson, Director
Allied Health Programs
McLennan Community College

BUSINESS AND OFFICE EDUCATION

Ms. Velma Clark
Jena, Louisiana, High School

Ms. Gloria Couch, Instructor
Technical Communications
Texas State Technical Institute

Ms. Dorothy Goodman, Exec. Director
Office Education Association

Mr. Charles R. Long
Department of Business Education/
Office Administration
University of District of Columbia

Ms. Kathleen C. Mills, Assist. Dir.
Business Education
Houston, Texas, School District

Mr. Bob Patton, Director
Midwest Curriculum Coordination
Center

Dr. Roger Penn, Chief
Division of Training and Educational
Development
Office of Training and Education
Occupational Safety and Health
Administration

Dr. Jack Reed, Teacher Educator
Department of Business Education
and Office Administration
University of Northern Iowa

Ms. Jo Watts
American Vocational Association
Austin, Texas

MARKETING AND DISTRIBUTIVE EDUCATION

Ms. Anne Ahearn
Bradford School of Retail Management

Mr. Jerry Bigham
Director of Vocational Education
Borger, Texas, School District

Mr. James R. Bowers, State Supervisor
Cooperative and Marketing Distribu-
tive Education
Mississippi

Ms. Elinor F. Burgess, Supervisor
Department of Marketing and
Distributive Education
Fairfax County Public Schools

Mr. Norman Irish, Marketing and
Distributive Education Department
Brooklyn, Ohio, High School

Ms. Mary K. Klaurens, Teacher Educator
Distributive Education
University of Minnesota

Mr. Bob Patton, Director
Midwest Curriculum Coordination
Center

Dr. Roger Penn, Chief
Division of Training and Educational
Development
Office of Training and Education
Occupational Safety and Health
Administration

Ms. Jean Samples, Marketing and Dis-
tributive Education Department
Milby, Texas, High School

TECHNICAL EDUCATION

Mr. Joseph D. Crum, Instructor
Electrical Trades
Killeen, Texas, Area Vocational School

Dr. J. W. Fair, Head
Department of Technology and
Industrial Education
Lincoln University

Mr. James R. Johnson, Chairman
Laser/Electro-Optics Technology
North Central Technical Institute

Mr. Edward Mann, Assist. Professor
Trade & Industrial Voc. Tech. Educ.
Memphis State University

Ms. Ivonna McCabe, Chairman
Mathematics and Science Division
Tacoma Community College

Mr. Bob Patton, Director
Midwest Curriculum Coordination
Center

Dr. Roger Penn, Chief
Division of Training and Educational
Development
Office of Training and Education
Occupational Safety and Health
Administration

Ms. Bennie Van Court, Drafting Instr.
Mississippi Gulf Coast Junior College

Mr. Richard Zimpel
Supervisor of Technical Education
Colorado Board of Community Colleges
and Occupational Education

TRADE AND INDUSTRIAL EDUCATION

Mr. Larry Johnson, Executive Director
Vocational Industrial Clubs of America

Mr. George Lovejoy, Chairman
Auto Body Technology
Texas State Technical Institute

Mr. Arnold Norred
Texas APL Special Project
The University of Texas at Austin

Mr. Bob Patton, Director
Midwest Curriculum Coordination
Center

Dr. Roger Penn, Chief
Division of Training and Educational
Development
Office of Training and Education
Occupational Safety and Health
Administration

Mr. Olen R. Ricketts, Instructor
Building Construction Technology
Texas State Technical Institute

Mr. Harry Tooker
CVAE Instructor
Waco, Texas, High Schools

Mr. Frederick A. Trombley, Chairman
Occupational Safety and Health
Technology
Texas State Technical Institute

Mr. Jim Wall
Somerset County, Pennsylvania, Area
Vocational Technical School

VOCATIONAL HOME ECONOMICS EDUCATION

Ms. Betty Keathley
Home Economics Supervisor
Waco, Texas, School District

Ms. Patricia Lindley
Educational Program Director
Texas Education Agency

Ms. Joan McFadden
Dean of Home Economics
Utah State University

Ms. Edwynna Nolan
Home Economics Instructor
Batchelor Middle School
Bloomington, Indiana

Mr. Bob Patton, Director
Midwest Curriculum Coordination
Center

Dr. Roger Penn, Chief
Division of Training and Educational
Development
Office of Training and Education
Occupational Safety and Health
Administration

Ms. Mildred Reel, Executive Director
Future Homemakers of America

Ms. Virginia Schiferl, Supervisor
Adult Home Economics
St. Petersburg, Florida

Ms. Greta Watson
Home Economics Instructor
Mart, Texas, School District

APPENDIX E

Job Safety and Health Instructional Materials Diff -ion Workshops
Typical Agenda

SPONSORED BY:

United States Department of Education
Office of Vocational and Adult Education
Division of National Vocational Programs
Curriculum and Instruction Branch
Contract No. 300790709

CONDUCTED BY:

The CENTER FOR OCCUPATIONAL RESEARCH AND DEVELOPMENT – a nonprofit corporation that conducts research, development, evaluation, and dissemination activities in education and training for technical occupations.

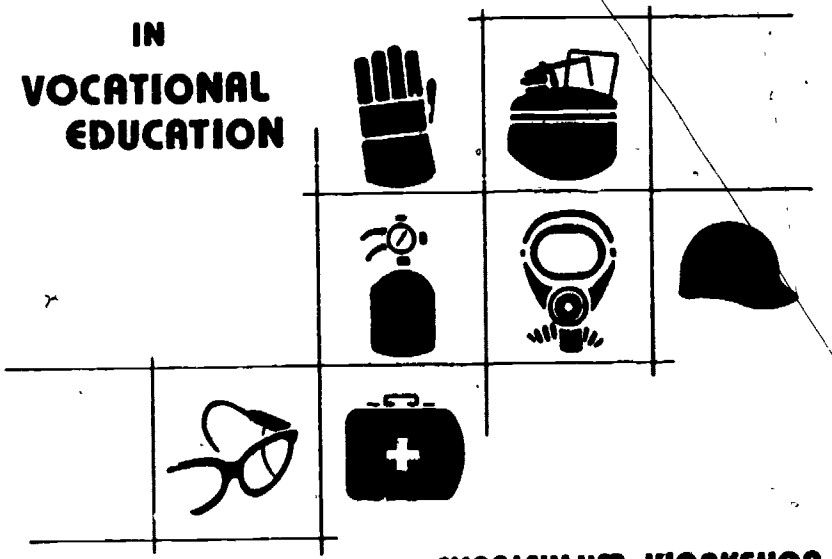
CORD (formerly Technical Education Research Center – Southwest) identifies workforce needs in new and expanding occupations and develops program plans and instructional materials to be used by institutions that provide specialized training programs. CORD also assists schools and industry in implementing the programs and adapting them to meet local needs.

For more information on the JSHIM program and/or instructional materials, contact:

Materials Sales Department
Center for Occupational Research and Development
601 Lake Air Drive, Suite C
Waco, Texas 76710
817/772-8756

JOB SAFETY

IN VOCATIONAL EDUCATION



CURRICULUM WORKSHOP AGENDA

November 5 and 6, 1981

Howard Johnson Hotel
U. S. Highway 1 at Haynes Avenue
Newark, New Jersey

THURSDAY, NOVEMBER 5

1:00 P.M.	Welcome Introductions Purpose of Meeting Daniel M. Hull, President Center for Occupational Research and Development
1:20	Introduction of Keynote Speaker Joseph Kelly, Director Northeast Curriculum Coordination Center
	Safety and Health Training Needs for Students in Occupational Education William R. Smith, Director Facilities - Equipment and Safety Control Division of Vocational Education and Career Preparation New Jersey Department of Education
1:50	The JSHIM Project Tasks - Products Bruce M. Lube, Associate Project Director Center for Occupational Research and Development
2:20	Instructional Modules Format - Usage CORD Staff
2:50	Break
3:15	Review of Modules Core Modules - Specific Modules CORD Staff
4:30	Selection of Modules for Use in a Particular Occupational Area CORD Staff
5:15	Informal Discussion

FRIDAY, NOVEMBER 6

8:30 A.M.	Identifying Major Problems and Attitudes About Safety Training Participants
9:15	Implementing Safety and Health Training Review of Resource Guides CORD Staff
10:15	Break
10:30	Creating Student/Worker Interest in Practicing Safe Work Habits Participants
11:15	Availability of Instructional Materials CORD Staff
11:45	Check out of Hotel
12:00	Lunch - Hotel Ironbound Room
1:15 P.M.	Program Dissemination Strategies in the States Participants
2:20	Concluding Remarks
3:00	Adjourn