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ABSTRACT

The purpose of the project was to identify a common core of basic skills for agribusiness and natural resources instruction in vocational education. This objective was undertaken through an inventory of 28 tasks and 28 occupational surveys. Completed task inventories were made for 28 representative occupations in agribusiness and natural resources: daily farmer, swine farmer, beef farmer, horse farm hand, grain farmer, forage producer, commercial vegetable producer, farm manager (owner-operator), feed salesman, feed mill worker, bulk fertilizer plant worker, chemical application equipment operator, animal health assistant, agricultural-industrial equipment mechanic, agricultural-industrial equipment set-up and delivery man, agricultural-industrial equipment partsman, tree service worker, floral designer, greenhouse worker, retail landscape and garden center salesman, horticultural firm equipment mechanic (small gas engines), park worker, buildings and grounds foreman, soil conservation aide, sawmill worker, all-round logger, meat cutter, and dairy plant worker. The final report does not include specific findings but discusses briefly project goals, procedures, results, and conclusions. Specific findings relating to each of the occupational surveys of the 28 occupations and findings relating to tasks common within the four taxonomies of agricultural production; agricultural business, supply, and service; agricultural mechanics; and horticulture are all reported separately in related project documents. (Author/EC)

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FINAL REPORT

PROJECT NO. V0033VZ
GRANT NO. OEG-0-74-1716

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DEPARTMENT OF AGRICULTURAL EDUCATION
IN COOPERATION WITH
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COLUMBUS, OHIO 43210

DETERMINATION OF A COMMON CORE OF BASIC SKILLS
FOR AGRIBUSINESS AND NATURAL RESOURCES

SEPTEMBER 1975

U.S. DEPARTMENT OF HEALTH
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ABSTRACT

To identify a common core of basic skills in agricultural occupations, a project was conducted with objectives to develop: (1) an initial inventory of tasks performed by workers in 28 selected occupations, (2) an occupational survey report of tasks performed by workers in the selected occupations, (3) tasks common to all occupational areas, and (4) recommendations for use of the common tasks to improve educational programs. Occupational surveys were completed for the: (1) dairy farmer, (2) swine farmer, (3) beef farmer, (4) horse farm hand, (5) grain farmer, (6) forage producer, (7) commercial vegetable producer, (8) farm manager (owner-operator), (9) feed salesman, (10) feed mill worker, (11) bulk fertilizer plant worker, (12) chemical application equipment operator, (13) animal health assistant, (14) agricultural-industrial equipment mechanic, (15) agricultural-industrial equipment set-up and delivery man, (16) agricultural-industrial equipment partsman, (17) tree service worker, (18) floral designer, (19) greenhouse worker, (20) retail landscape and garden center salesman, (21) horticultural firm equipment mechanic (small gas engines), (22) park worker, (23) buildings and grounds foreman, (24) soil conservation aide, (25) sawmill worker, (26) all-round logger, (27) meat cutter, and (28) dairy plant worker. A common core of basic skills was established within each of four taxonomy areas: agricultural production; agricultural business, supply and service; agricultural mechanics; and horticulture. It was concluded that establishment of a common core of basic skills across all agricultural occupations was not supported by the data from this study (author).

ERIC Descriptors

- *Job Skills
- *Agricultural Skills
- *Agricultural Occupations
- *Occupational Information
- *Job Analysis
- Agricultural Education

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PREFACE

This report of a funded research project is part of a continuing programmatic thrust within the Department of Agricultural Education at The Ohio State University for improved curricula in programs of vocational education in agriculture through research and development activity.

The content of the report is organized so that each appendix may stand alone as a useful document for users interested in its content.

Special appreciation is due the project staff for their work in compiling the information in this report: Edgar P. Yoder, J. Rick Byrd, Daniel R. Miller, Paul H. Waddy, Thomas W. Edwards, and Frederick C. Cooke. Thanks are also due Mary E. Earhart, project secretary, for her patience, cooperation, and excellent work.

J. David McCracken
Project Director

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INTRODUCTION

Basic skills traditionally included in the agribusiness and natural resources occupational cluster relate to animal science, plant and soil science, agricultural mechanization, farm and business management, leadership, and career opportunities. Decisions regarding skills to be taught have generally been made based upon advisory committee input, task inventories, or formal and/or informal community surveys. Primary effort has been directed towards identification of competencies for specific occupations rather than a common core of basic skills that might be utilized in orienting students and providing them with exploratory experiences in relatively broad career clusters.

Purpose and Objectives

A major purpose of this project was to identify a common core of basic skills for agribusiness and natural resource instruction in vocational education.

The primary objectives are stated as outcomes of the project:

1. An initial inventory of tasks performed by workers in selected occupations representing all occupational areas of agribusiness and natural resources.
2. An occupational survey report of tasks performed by workers in selected occupations in agribusiness and natural resources.
3. Tasks common to all occupational areas identified by analysis of data.
4. Recommendations for utilization of common tasks in curriculum revision and evaluation, and in career orientation and exploration.

An important secondary outcome included completed task inventories for 28 representative occupations in agribusiness and natural resources. The procedures used to accomplish the objectives of this project should also prove useful as a model in identifying a common core of basic skills for each of the other occupational clusters.

PROCEDURES

A state advisory committee was selected for the project. Members were: Dr. Ralph E. Bender, The Ohio State University; Mr. James E. Dougan, Ohio Department of Education; Dr. Harlan E. Ridenour, Ohio Agricultural Education Curriculum Materials Service; Dr. Earl B. Russell, Center for Vocational Education; and Mr. William C. Watt, Montgomery County Area Vocational Center.

Twenty-eight representative occupations in agriculture were selected by the state advisory committee. They were: (1) dairy farmer, (2) swine farmer, (3) beef farmer, (4) horse farm hand, (5) grain farmer, (6) forage producer, (7) commercial vegetable producer, (8) farm manager (owner-operator), (9) feed salesman, (10) feed mill worker, (11) bulk fertilizer plant worker, (12) chemical application equipment operator, (13) animal health assistant, (14) agricultural-industrial equipment mechanic, (15) agricultural-industrial set-up and delivery man, (16) agricultural-industrial equipment partsman, (17) tree service worker, (18) floral designer, (19) greenhouse worker, (20) retail landscape and garden center salesman, (21) horticultural firm equipment mechanic (small gas engines), (22) park worker, (23) buildings and grounds foreman, (24) soil conservation aide, (25) sawmill worker, (26) all-round logger, (27) meat cutter, and (28) dairy plant worker.

An initial inventory of tasks was constructed for each of the 28 occupations. The inventories were developed by utilizing available written materials and by interviewing people who were knowledgeable about the occupations being studied. Tasks were grouped according to duty areas and reviewed for clarity, consistency, and brevity. A selected sample of persons representing each occupation reviewed the items for communicability and also deleted irrelevant items, suggested additional items, and recommended improved organization of task statements.

Twenty-eight occupational surveys were conducted. Answers were sought for two questions:

1. Does the incumbent perform the task?
2. How essential is the task to successful performance in the occupation?

A sample of workers was selected for each of the occupations. Procedures for selection of each sample were described in the appendix to this report relating to each

occupation.

The data were analyzed by computer. The percentage of incumbents performing each task and the rating of importance assigned by the respondents were tabulated for each task in each occupation. Background information on each respondent was also collected and summarized.

The national advisory committee to the project met with the project staff at the American Vocational Association Convention in December to review procedures and suggest revisions. The national advisory committee members were: Dr. William E. Drake, Cornell University; Dr. Jasper Lee, Virginia Polytechnic Institute and State University; Mr. Foy Page, Texas A & M University; Mr. Wallace Reidel, Teacher of Vocational Agriculture, Calmar, Iowa; and Mr. Don E. Wilson, California State Department of Education.

The state and national advisory committees met in Columbus, Ohio in June to review the data and suggest conclusions and recommendations. The committees were assigned to subcommittees. The first day, subcommittees developed and applied criteria for selecting a common core of tasks for agricultural occupations and within each taxonomy area. The second day, subcommittees developed conclusions and recommendations concerning the utilization of project findings.

RESULTS

Specific findings relating to each of the occupational surveys of the 28 occupations are reported in Appendixes I through XXVIII. Findings relating to tasks common within the four taxonomies of agricultural production; agricultural business, supply, and service; agricultural mechanics; and horticulture are reported in Appendix XXIX.

A major purpose of the project was the development of a common core of basic skills across agricultural occupations. After examining the data, the advisory committees determined that the criterion for selection of tasks for the common core should be as follows: the task must be rated as 2.3 or higher (3 = essential, 2 = useful, and 1 = not important) in one-half (14) of the occupations. Based upon this criterion, 48 tasks qualified and were established as the common core of basic skills. The tasks follow:

Performing General Office Work

- Meet (greet) people
- Use telephone

Following General Safety Precautions

- Follow safe work habits
- Identify potential safety hazards
- Store chemicals
- Use fire extinguishers
- Wear appropriate protective clothing
- Ventilate work areas
- Interpret information on labels and signs
- Use proper lifting and carrying methods
- Store inflammable materials
- Wear appropriate work clothes
- Adjust safety devices
- Install safety devices
- Correct potential safety hazards
- Use electrical connectors and electrical safety devices

Maintaining Equipment

- Add coolant to radiators
- Add oil to equipment
- Change oil and oil filters
- Clean debris from equipment and vehicles
- Grease equipment
- Inflate tires
- Install and adjust belts
- Install and adjust chains
- Interpret general maintenance instructions in operator's manuals
- Service air cleaners

Using and Maintaining Hand and Power Tools

- Adjust tools
- Clean tools
- Identify tools
- Interpret tool operation instructions
- Select tools for specific jobs
- Sharpen tools
- Store tools
- Use hand tools safely
- Use power tools safely

Operating Equipment and Vehicles

Interpret gauge readings on equipment
Operate equipment and vehicles on public highways
Adjust equipment safety shields
Connect hydraulic systems and hydraulic operated equipment
Correct potential equipment safety hazards
Identify equipment safety hazards
Install equipment safety shields and devices
Interpret safety and operating instructions in equipment manuals
Interpret safety signs and symbols on equipment
Operate equipment and vehicles under work conditions
Refuel power units
Select proper equipment and vehicles for specific jobs

Maintaining Buildings and Structures

Remove trash from floors and work areas

The above tasks were selected from the over 2,500 tasks included in the study. Examination of the tasks will reveal that few of them are "agricultural" in nature. Agricultural tasks were generally not found to be common across the 28 occupations.

CONCLUSIONS

Specific conclusions and recommendations concerning the utilization of the findings and suggestions for further research are reported in Appendix XXIX. Conclusions relating to the 48 tasks identified as the common core of basic skills follow:

1. The tasks identified as the common core are needed by workers in most agricultural occupations.
2. The common core skills should be developed in students with career goals involving agricultural occupations.
3. The common core tasks represent only a small portion of the skills a worker must possess to succeed in

any of the agricultural occupations included in
this study.