

A Learning Assessment Tool for a New Natural Resources Curriculum in Utah's Agricultural Education Program

Poster Abstract

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Introduction

The Performance Based Skills Certification for Natural Resource Management is designed to provide for the assessment of program completer skills in the areas of forestry, rangeland resources, fish and wildlife management, natural resource policy/regulation implications and recreation.

A natural resources emphasis area (curriculum) was added to the Agricultural Education Program in Utah high schools in 1998. The Utah State Office of Education contracted agriculture and range educators at Utah State University (USU) to develop a performance-based skill certification assessment for this curriculum. Twenty-one competency standards, with supporting objectives, were developed by teachers in the Agricultural Education Program. Competency areas include: range, forest, recreation, fisheries/wildlife, soil, and watershed management; ecological concepts; environmental ethics conflict management; energy resources; waste disposal; land classification and planning; inventory and monitoring methods; business and economic principles; and career opportunities.

Project Objectives

1. Identify natural resource competency areas.
2. Solicit natural resource teachers' problem areas, conditions, and methods in relation to identified natural resource competencies.
3. Select, model, and develop problem centered assessment procedures applicable to performance based skill development.
4. Provide for complete performance

Procedure

In 1996, an Agricultural Education-Natural Resource Management Committee was assembled to determine the objectives and competencies necessary to prepare students for careers in natural resources. The committee arranged a program planning and curriculum development guide to assist the secondary agricultural science and technology instructors in planning for their teaching of Natural Resource Management. After 1998, a grant was

established to write the Performance Based Competency Assessment for Natural Resource Management.

In August of 1998, work began on refining and validating the standards and objectives. Soon after an activity design format was developed. It is important to note that the objective of the project was not to develop complete instructional units but an assessment guide to test the understanding of material previously instructed. It does not replace the teacher or the teacher's expertise. The assessments can be adapted to the location, materials, and individual students that teachers are provided with.

The guide is divided into 21 sections. Each section addresses a different facet of natural resource management, such as ecology, natural resource management, forestry, etc. The performance assessment activities allow students to hear from resource specialists, perform fieldwork, practice public speaking skills, develop teamwork skills, and investigate/analyze current natural resource topics. Where ever possible the activities provide Utah specific examples. Also, some activities have been designed to help prepare students for FFA activities.

Assessment Process Outline

The assessment guide is divided into standards. Twenty-one standards were defined through curriculum review and industry validation. Each standard is further supported by a series of objectives. The objectives become the assessment point in determining student learning. Each standard had a varying amount of objectives.

The assessments of each standard follow a uniform set of headings. Teacher familiarity with the assessment process is key to the successful implementation. The following headings were designated for the Natural Resource Management assessment guide.

Standard- A 5000-series number is used for Natural Resource Management. This describes the subject the standard addresses.

Objective- These items describe the specific areas of the standard that are to be met.

Objectives were written at the highest practical level of cognition.

Concept- A statement designed that orientates both the teacher and student to the general idea of the standard and objective.

Background-Not a teaching unit but provides enough information sufficient to help provide a basic understanding of the topic.

Teacher Responsibilities- Outlines what the teachers must do to prepare and conduct the assessment.

Materials/Resources- Items needed to conduct the assessment as proposed.

References- Suggested/recommended texts, videos, websites etc. where the teacher can find more information or activities.

Activity/Procedure- a detailed step by step list of instructions and procedures to allow for the successful completion of the assessment.

Performance Assessment- A detailed description/criteria of what is expected of the student to aid

Teacher In-Service Activities

The teachers involved in the Agricultural Education Program were introduced to the competencies, objectives, and activities at a 3-day workshop in August 1999. Teachers toured a wildlife refuge, a National Forest, and a private ranch as part of these tours activities were demonstrated as well as showing the potential for partnerships with various state and federal agencies. Teachers also practiced software application in a computer lab setting.

Follow Up Activities

A website <http://www2.aste.usu.edu/nr/> was established to inform teachers of updates in the performance assessments as well as provide resources and links to other natural resource related websites. Teachers can also e-mail questions or comments about the Natural Resource Project. A two-year review of the project will be conducted. Students involved in natural resource program will also receive a pencil/paper multiple choice that parallels the standards and objectives to verify student performance is equal to student cognition.