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## ABSTRACT

This project was designed to meet the need for modified programs in agribusiness and natural resources education adapted to larger North Dakota school systems. The major purpose of the project was the development of an exemplary program to be implemented into the curricula of the Fargo Public School System, to serve as a guide for the development of similar programs in other schools in the State. Also included was the concurrent and cooperative involvement of the Department of Agricultural Education at North Dakota State University in developing a teacher education phase of the program and in making available curricular materials. Included are details of the courses taught at the high school and adult level during the life of the project, July 1, 1970 to June 30, 1973, and of the projected courses for 1973-74. Related instructional experiences, followup of graduates, and curriculum materials developed are briefly outlined. The agricultural teacher education phase of the project has included undergraduate and graduate courses. An independent evaluation for the 1971-72 school year is included.

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**FINAL PROJECT REPORT**

**AN EXEMPLARY PROGRAM FOR CURRICULUM DEVELOPMENT  
AND IMPLEMENTATION OF THE COURSE  
INTRODUCTION TO AGRI-BUSINESS**

**Exemplary Project in Vocational Education  
Conducted Under  
Part D of Public Law 90-576  
In Cooperation With  
The North Dakota State Board for Vocational Education**

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**June 22, 1973**

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FOR VOCATIONAL AND TECHNICAL EDUCATION  
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## ABSTRACT OF FINAL PROJECT REPORT

### PROJECT TITLE

An Exemplary Program for Curriculum Development and Implementation of the Course Introduction to Agribusiness.

### COOPERATING AGENCIES

The Fargo Public School District and North Dakota State University in cooperation with the North Dakota State Board for Vocational Education.

### DURATION OF THE PROJECT

July 1, 1970 to June 30, 1973.

### NEED FOR THE PROJECT

This project was designed to meet a need for modified programs in Agribusiness and Natural Resources Education adapted to larger North Dakota school systems.

### PURPOSES OF THE PROJECT

Major purposes of the exemplary project included

- A. The development of an exemplary education program to be implemented into the curricula of the Fargo Public School System. The program was planned to serve as a guide for the development of similar programs in other schools in the State of North Dakota.
- B. The concurrent and cooperative involvement of the Department of Agricultural Education at North Dakota State University in developing a teacher education phase of the program and in making available curricular materials.

## PROJECT DESIGN AND PROCEDURES

This Exemplary project was planned and carried out jointly by the Fargo Public Schools and the Department of Agricultural Education at North Dakota State University in cooperation with the North Dakota State Board for Vocational Education.

The project design included the following major phases:

- A. Planning and implementation of agribusiness curricula in the Fargo Public Schools
- B. Development of agribusiness curricular materials
- C. Expansion and development of the off-farm agriculture phase of Teacher Education in the Agricultural Education Department at North Dakota State University.
- D. A program of graduate studies and graduate assistantship duties closely correlated with items A, B, and C.

## PROGRAM DEVELOPMENT

Course implementation was begun in the Fargo Public Schools in 1970. A five-week Agribusiness Survey module and a one-year course in Introduction to Agribusiness were taught. In 1971 an additional course, Agribusiness I was added to the program. During the 1972-73 school year the program was designated as Natural Resources and Conservation with Natural Resources I and Natural Resources II being offered.

Enrollment (except for the survey module) grew from 30 students in 1970-71 to 225 students in 1972-73. Projected enrollment for 1973-74 includes 350 students.

## CURRICULUM MATERIALS DEVELOPED

Curriculum development activities were carried out throughout the three-year period of the project. Major accomplishments in this area include:

- A. What is Agriculture? A slide series (70 slides) accompanied by a taped narration to develop an awareness on the part of students of the seven major occupational areas within the field of agriculture.

- B. Natural Resources I Curriculum Guide. This curriculum contains guides for student and for teacher use and includes appropriate visual aids.
- C. Natural Resources II Curriculum Guide. Curriculum materials for Natural Resources II are currently being developed.

#### TEACHER EDUCATION PROGRAM

Developments in the Teacher Education phase of the program included course revision, adding of a graduate course and internship, use of video-tape equipment in teaching, and extensive updating of the reference library.

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# FINAL PROJECT REPORT

## PROJECT TITLE

An Exemplary Program for Curriculum Development and Implementation of the Course Introduction to Agri-business.

## COOPERATING AGENCIES

The Fargo Public School District and North Dakota State University.

## DURATION OF THE PROJECT

July 1, 1970 to June 30, 1973.

## I. NEED FOR THE PROJECT

The major purpose of the program was to develop an exemplary program of vocational education in agriculture principally in the agribusiness area. The effort included two major phases.

- A. The development of an exemplary educational program to be implemented into the curricula of the Fargo Public School System. The program was planned to serve as a guide for the development of similar programs in other schools in the State of North Dakota.
- B. The concurrent and cooperative involvement of the Department of Agricultural Education at North Dakota State University in developing a teacher education phase of the program and in making available curricular materials.

The overlying purpose of the program was to provide area students with expanded occupational alternatives and interests, and aid students in attaining the skills necessary to successfully enter the labor field at the job entry level or seek further training and skill development in agribusiness or related agricultural fields at the post-secondary school level.

## II. GENERAL OBJECTIVES OF THE PROGRAM

- A. To develop a program and a curriculum in vocational education in agriculture which will be suited to needs of the Fargo area and which will serve as an instructional model for other school districts to utilize in the development of similar programs.
- B. To explore the range of occupational opportunities in agriculture where current and projected labor market supply and demand indicate manpower shortage and high labor demand. Students will then be made aware of the career opportunities available within these fields of agriculture.
- C. To develop curricula, methodologies, field experiences, laboratory demonstrations, visitations, guest lecture series, and other educational programs and devices which will provide students insight into the career opportunities available within the agri-business field.
- D. To develop competencies needed by individuals engaged in or preparing to engage in agricultural occupations.
- E. To provide the student with the interest, curiosity, and commitment to pursue excellence in a chosen profession through a continuous upgrading of occupational skills and knowledge.
- F. To develop and expand the non-farm agricultural occupations phase of the teacher education program in the Department of Agricultural Education at North Dakota State University.
- G. To provide a center for observation and student teaching for students preparing to teach in this field.
- H. To develop and make available to other schools in North Dakota curricular guides and/or materials which may be helpful to assist in planning and operating similar programs.

### III. PROJECT DESIGN AND PROCEDURES

This Exemplary project was planned and carried out jointly by the Fargo Public Schools and the Department of Agricultural Education at North Dakota State University in cooperation with the North Dakota State Board for Vocational Education.

The project design included the following major phases:

- A. Planning and implementation of agribusiness curricula in the Fargo Public Schools.
- B. Development of agribusiness curricular materials.
- C. Expansion and development of the off-farm agriculture phase of Teacher Education in the Agricultural Education Department at North Dakota State University.
- D. A program of graduate studies and graduate assistantship duties closely correlated with items A, B, and C.

Course planning and implementation were the responsibilities of the Fargo Public Schools. Curriculum materials development was a joint concern of the Fargo Public Schools and the Department of Agricultural Education. The program of graduate studies and the graduate assistantship duties were closely correlated with program and curriculum development in the other phases of the project.

Beginning July 1, 1970, Michael Anderson was employed on a one-half time basis by the Fargo Public Schools to initiate the course development and teaching phases of the project. On that date, Mr. Anderson was also appointed as a half-time Graduate Research Assistant in the Department of Agricultural Education at North Dakota State University.

Included in Mr. Anderson's initial responsibilities were the following:

- A. To teach basic courses of a developmental nature on the high school level for beginning agribusiness students.
- B. To develop curriculum and course materials for those courses, and
- C. To assist in planning and developing future high school level courses in agriculture of a more specialized nature.

During the school years of 1970-71 and 1971-72 (the first two years of the project), Mr. Anderson devoted approximately half of his time to the instructional program in agribusiness offered by the Fargo Public School District and devoted equal time to the pursuit of his program of graduate studies and to his work as a graduate assistant in the Department of Agricultural Education.

Mr. Anderson's program of graduate studies and his graduate assistantship duties were closely correlated with the curriculum development program which was carried out within the Fargo Public Schools.

Mr. Anderson's appointment as a Graduate Research Assistant in the Department of Agricultural Education was terminated on June 30, 1972. He was then employed on a full-time basis to continue curriculum development and teaching in the growing agribusiness program conducted in the Fargo Public Schools. During the third year of the project (July 1, 1972-June 30, 1973), Mr. Anderson continued to maintain a close working relationship with the Department of Agricultural Education staff.

Professor Shubel D. Owen served as Chairman of the Agribusiness Advisory Council and also as Chairman of the Vocational Education Advisory Council for the Fargo Public Schools.

IV. RESULTS AND ACCOMPLISHMENTS

A. Instructional Program (1970-71)

1. High School Classes Taught

High school classes in Agribusiness and Natural Resources Education taught during the first year of the project (1970-71) were Agribusiness Survey and Introduction to Agribusiness.

(a) Agribusiness Survey

Agribusiness Survey was taught as a 5 week module of a full year course (1 unit of credit) entitled Vocational Survey. The course (Vocational Survey) was offered on the 9th grade level at South High School and was organized into seven sections with approximately 20 students enrolled in each of the seven sections. The course was designed to

provide students with an opportunity to explore career opportunities in seven vocational areas. Instructional areas included in the 5 week Agribusiness Survey module were introduction to career selection, introduction to the world of work, introduction to agriculture and natural resources, introduction to plant and soil science, and introduction to animal science. Seven five-week sessions of this course were taught during the school year.

(b) Introduction to Agribusiness

This course was taught at North and at South High Schools. The course was designed primarily for students enrolled in the 10th grade, but students from grades 9 - 12 were enrolled. Included in the course were the following units: introduction to careers in agriculture, career selection, basic plant and soil science, basic livestock science and introduction to agribusiness marketing and management.

Enrolled in this course were 18 students at North High School and 12 students at South High School. Class distribution of students enrolled included two 9th grade students, eleven 10th grade students, seven 11th grade students and ten seniors. Included among the twelve students enrolled in Introduction to Agribusiness at South High School were three students from West Fargo who were bussed to South High School under an area school agreement. Four of the students enrolled were identified as handicapped and fifteen were listed as disadvantaged.

2. Adult Program

A class entitled "Spring Gardening" was offered during the spring quarter as a horticulture option class for all interested adults. Its purpose was to improve the gardening prowess of home gardeners in the Fargo area. The class dealt with vegetables, flowers and turf gardening. The class met for two hour periods one night a week for eight weeks, totaling 16 hours of instruction. Eighteen were enrolled, three men and fifteen women.

## B. Instructional Program (1971-72)

### 1. High School Program

The courses in Agribusiness and Natural Resources Education were taught only at South High School. North High School students who wished to enroll in the courses offered were provided with bus service between the two schools. Courses taught were: Agribusiness Survey (a five-week module of a full year course, (refer to description for 1970-71), Introduction to Agribusiness and Agribusiness I.

#### (a) Introduction to Agribusiness

This course as taught in 1971-72 was basically the same as in 1970-71. It was designed to be a basic agricultural science offering on the 10th grade level, but students from all high school grade levels were enrolled. Ten students were enrolled in the class from South High School and four from North High School.

#### (b) Agribusiness I

This course was designed to provide student job entry skill development experiences in agribusiness. Units included in the course were human relations, getting a job, marketing of agricultural products, basic horticulture, advanced plant and soil science, livestock marketing and wildlife management. Enrolled in the course were 4 students from the West Fargo High School, 4 students from North High School, and 8 students from South High. Those enrolled were primarily juniors and seniors. Two of the students were identified as being disadvantaged and two were handicapped.

### 2. Adult Program

A course in spring gardening was offered for 16 hours of instruction with 27 adults enrolled. Topics included in the course were plant propagation, pruning, plant selection, safe use of pesticides and the culture of flowers and vegetables.

## C. Instructional Program (1972-73)

### 1. High School Program

In an attempt to attract more students and to try a new approach to agricultural subjects, the program was designated as Natural Resources and Conservation. The purpose of the change was not to remove agribusiness from the curriculum but rather to approach it from a point of view which was more popular with the students. It was hoped that the approach would create a future demand for expanded agribusiness offerings.

Courses taught were:

#### (a) Natural Resources I.

This course was taught on the 10th grade level at both North and South High Schools. It was taught as an exploratory course including careers in natural resources and agribusiness. Units of instruction in the course included basic soil science, wildlife management, basic horticulture, water use and conservation and basic ecology.

At South High School 116 students were enrolled in this course and at North High School 91 students were enrolled.

To assist Michael Anderson, the original instructor of Agribusiness and Natural Resources Education approved for this exemplary project, a teacher was employed with an emergency certificate to teach classes in Natural Resources I offered at North High School and at South High School. A science teacher taught two sections of the class.

#### (b) Natural Resources 2

This course was designed to be an 11th or 12th grade level offering for students who had completed one year of agribusiness education. It was designed to provide for skill development leading to job entry in a natural resources career. Units of instruction in the course included advanced plant and soil science, wildlife management, soil engineering, irrigation and career analysis.

This course was offered at both North and South High Schools with an enrollment of 9 students in each class.

Of the 225 students enrolled in the Natural Resources class offering at North and South High School during 1972-73, twelve were handicapped and fifty-eight were identified as disadvantaged.

The total enrollment during the year in the Natural Resources program by grade at North and South High Schools was: 10th grade-130 students; 11th grade-49 students; and 12th grade-46 students.

## 2. Adult Program

Two classes, Spring Gardening with an enrollment of 17 adults and Landscaping with six adults enrolled, were taught. Each class met for a total of 16 hours of instruction.

## D. Projected Instructional Program (1973-74)

Preliminary registration for the 1973-74 school year indicated the class enrollment for 1973-74 will be as follows:

### South High School

Natural Resources I	130
Natural Resources II	36
Natural Resources III -	
3 students enrolled in Natural Resources III	
on an independent study basis.	

### North High School

Natural Resources I	120
Natural Resources II	64

The 350 students registered in the Natural Resources classes offered in 1973-74 represents an increase in enrollment of 125 over the 225 students enrolled during the 1972-73 school year. To accommodate the increased number of students enrolled, John Nowatzki, presently completing the requirements at North Dakota State University for a M. S. Degree with a major in Agricultural Education has been employed by the Fargo Public School District to teach and direct the program at Fargo North High School.

## E. Related Instructional Experiences

A goal of the project was to provide varied experiences for students in career exploration and skill development. Included among the student activities carried out during the 3 project years were:

1. Student attendance at the North Dakota Winter Show.
2. Pruning fruit trees for an area farmer.
3. Attendance at JFFA Parent-student banquets.
4. One day spent working at a fish hatchery.
5. Tour of the McClusky Canal irrigation project area and Garrison Dam.
6. Attendance at the International Conservation Festival at Bottineau, North Dakota.
7. Cooperative work experience.
8. Placement of students in related jobs not associated with cooperative work experience.
9. Tour of Tamarac Federal Wildlife Refuge.
10. Grading, fertilizing, and establishing a lawn for a local resident.
11. Speakers for class, including representatives of Agribusiness firms and the State Game and Fish Department.
12. Attendance at the Local Farmers Forum.
13. Student visitation and observation of agribusiness operations.
14. Numerous telephone interviews with agribusiness representatives.
15. Tour of Departments of the College of Agriculture, North Dakota State University.
16. Sponsoring, staffing, and supplying a flower shop, "The Green Thumb", at an all-school benefit.
17. Experience in taxidermy, preparation of mammal and bird mounts.

#### F. Cooperative Work Experience

Cooperative Work Experience Programs in the Fargo Public Schools are coordinated by Mr. David Tehle, Diversified Occupations Coordinator. Due to the developmental nature of the project and the inclusion of simulation experiences, a very limited number of students were placed in Cooperative Work Experiences.

#### G. Youth Organization

Interest in organizing an FFA Chapter was slow in developing. Early in the life of the project, it was decided that interest on the part of students should be expressed before undertaking to organize such a group. During the 1972-73 school year, youth enrolled in the program expressed an interest in organizing a youth organization to be related to the regular instructional program. A 12 member steering committee of interested persons has been named by Mr. Anderson to design and plan a course of action which will lead to the establishment of a program of youth activities which will tie in closely with the classroom instructional program.

#### H. Follow-up of Graduates

1970-1971--Ten seniors completed the course, "Introduction to Agribusiness". Of that number, three are employed in agribusiness. It was not expected, however, that a large number of the students would go on to employment in agribusiness after only one year of instruction.

1971-1972--There were fourteen seniors who completed two years of instruction in agribusiness at the end of the second project year. They represented the first group to complete more than one year of agribusiness classes under the exemplary project. Of the 14, four are employed in agribusiness, two are enrolled in post-secondary programs of diesel mechanics, and one is enrolled in the College of Agriculture at North Dakota State University. Three are in military service, two are employed in non-agricultural fields, and the status of two is unknown.

1972-1973--At the end of the 1972-73 school year, eight of the 46 seniors enrolled had completed two or more years of agribusiness and natural resources instruction. Of the eight, six have made plans to pursue employment or further education in agribusiness and natural resources. Follow-up information on the remainder of the 1973 graduates is not yet available.

## I. Curriculum Materials Developed

Curriculum development activities were carried out by Mr. Anderson throughout the three year period of the project. Major accomplishments in this area include:

1. What Is Agriculture? - a slide series (70 slides) accompanied by a taped narration to develop an awareness on the part of students of the seven major occupational areas within the field of agriculture.

Note: this set of slides together with the taped narration is available for loan from :  
Office of the State Supervisor of Agricultural Education  
900 East Boulevard  
Bismarck, North Dakota 58501  
or from  
the Department of Agricultural Education  
North Dakota State University  
Fargo, North Dakota 58102

2. Natural Resources I Curriculum Guide  
This curriculum contains guides for student and for teacher use and includes appropriate visual aids. A copy of these materials are included as a supplement to this report.
3. Natural Resources II Curriculum Guide  
Curriculum materials for Natural Resources II are currently being developed.

## V. DEVELOPMENTS IN THE AGRICULTURAL TEACHER EDUCATION PROGRAM AT NORTH DAKOTA STATE UNIVERSITY

### A. Introduction

Since the passage of the Vocational Education Acts of 1963, there has been a decided broadening of Vocational programs in agriculture to include all phases of agriculture, off-farm as well as farming and ranching. The implementation of this broad new program of Agribusiness and Natural Resources Education brought with it the need for teachers prepared to cope with new and broader responsibilities.

One of the goals of the Exemplary project was the development of an expanded off-farm agriculture phase of the Teacher Education Program in Agriculture at North Dakota State University. During the three year duration of this program many significant developments in teacher education were implemented in the Department of Agricultural Education at North Dakota State University.

### B. Technical Agriculture Courses

Students qualifying in Agriculture at North Dakota State University are expected to become broadly prepared in technical agriculture. In recent years additional emphasis has been placed on courses dealing with various phases of agribusiness such as agribusiness management, horticulture and courses dealing with agricultural products.

### C. Undergraduate Courses

The course, Agricultural Education 322--Occupational Experience and FFA Programs--has been increasingly geared to planning, organizing and conducting Supervised Occupational Experience Programs for students preparing for a broad scope of occupations in agribusiness and natural resources.

Through Agricultural Education 322, a series of Agricultural Education 496 one credit courses, and the North Dakota State University Collegiate FFA Chapter, students are prepared to become advisors of FFA Chapters whose activities reflect the broad range of agribusiness and natural resource occupations.

## D. Graduate Courses

### 1. Supervised Occupational Experience Program Courses

A new graduate level course, Agricultural Education 505, Supervised Occupational Experience Programs in Agriculture, has been implemented during the term of the Exemplary project. This course emphasizes both the farm and off-farm phases of Supervised Occupational Experience programs.

### 2. Agribusiness Education Internship

During the summer of 1972 an internship program in Agribusiness Education was launched. Five graduate students were placed in agricultural businesses for 3 full days during each of 3 consecutive weeks. During portions of the other two days each week, the application of these experiences to secondary and post-secondary programs was studied.

Businesses where graduate students were placed included two farm equipment dealerships, one agricultural seed and chemical dealership, one feed processing and sales firm, a garden store and nursery, and a greenhouse and florist business.

## E. Video-Tape Instruction

Partially as a result of the Exemplary project, portable video tape equipment has been secured which has made possible an increased effectiveness of micro-teaching exercises. The equipment has also made possible an improved system of self-evaluation by student teachers.

## F. Department Library

One of the requisites for an effective teacher education program is an adequate supply of reference materials, particularly those which might be used on the teaching job by the beginning or experienced teacher.

Partially through the Exemplary project, the library of reference materials in the Department of Agricultural Education has been substantially expanded, improved and up-dated. Particular emphasis has been placed on securing reference

materials concerning off-farm agriculture although an effort was made to build a balanced set of reference materials for program planning and reference use.

- G. As part of the Graduate Research Assistant's responsibilities of the Exemplary Project, Michael Anderson, under the direction of Professor Shubel D. Owen, completed a study of "A Determination of Instructional Commonalities in Agricultural Occupations in the Fargo, West Fargo, North Dakota, Metropolitan Area." This study was conducted to examine agricultural employment opportunities and educational requirements for selected occupations. A copy of this study is included as a part of this report.

## VI. EVALUATIONS AND RECOMMENDATIONS OF PROGRAM IN VOCATIONAL EDUCATION IN AGRI-BUSINESS, NATURAL RESOURCES AND CONSERVATION EDUCATION IN THE FARGO PUBLIC SCHOOLS BY THE NORTH CENTRAL ACCREDITING ASSOCIATION EVALUATION TEAM.

During the 1971-72 school year, South High School was evaluated by an evaluation team representing the North Central Association Commission on Secondary Schools. The vocational agribusiness department was among those evaluated. Following is a copy of their report on the agribusiness program.

The program of vocational education in agribusiness, natural resources and conservation education is an exemplary project conducted with the approval of the State Board of Vocational Education. Cooperatively involved in the project are the Board of Education of the Fargo Public Schools, the Department of Agricultural Education of the North Dakota State University, and the State Board for Vocational Education. The exemplary project is a three-year program and is currently in its second year of operation.

### A. Areas of Strength

1. There was abundant evidence of the presence of excellent rapport between the instructor, Michael Anderson, and the members of the classes visited.
2. The students in the classes were attentive, cooperative and evidenced general interest in the instruction being offered.

3. The instructor employed a variety of teaching procedures and gave the students many opportunities to participate in the discussions, to raise questions, to volunteer information, and to participate in other appropriate and meaningful learning activities.
4. The instructor made a clearly defined effort to keep the instruction "geared" to the needs and to the interests of the class members.
5. The observer had occasion to visit and to observe the program carried out in the department the first year of its operation. To be highly commended is the more favorable attitude of the students enrolled this year toward the instructional program offered in agriculture.
6. The observer is of the opinion that the program of the department of vocational agribusiness, natural resources and conservation education is highly compatible with the philosophy of South High School (as described on mimeo distributed to members of the visitation team).

B. Items of Concern

The instructor is working diligently to make the school's program of vocational agribusiness, natural resources and conservation education more than a "teacher talk-student listen" course. If this objective is to be realized, anticipating a marked increase in the number of students to be enrolled in the program during the school year of 1972-73, the following improvements are urgently needed before the start of the "new" school year:

1. The department needs a "permanent home", a class-laboratory facility to serve as a "home base" for the in-school instructional program.
2. The class-laboratory facility will need to be equipped with tools, references and "other equipment and supplies" adequate to meet the needs of all of the students enrolled in the program. It is further recommended

- a. That the items to be added be selected after making an analysis of the instructional program to be offered during 1972-73.
  - b. Consultation with the Office of the State Supervisor of Vocational Education in Agriculture.
  - c. A consideration of the availability of items already present in the school and available for use in the department on a shared basis.
3. To provide for enriching the program to more adequately meet the interests and needs of students in a small group and individualized basis, it is recommended that an instructional media center for the department be established. This area should be readily accessible to all students enrolled at all times (be available for use during scheduled class periods and open periods). Also it is very desirable that this center be located in an area whereby the instructor would be easily available for occasional guidance and consultation by students "working" in the center. '