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By-Sweany, H. Paul

The Development and Demonstration of Unified Vocational-Technical Education Programs in Small Rural Area High Schools. A Developmental Vocational Education Research and Teacher Education Program Based on a Clinical School Concept.

Michigan State Univ., East Lansing.

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Changes in occupational patterns of local rural communities and outmigrating rural youth led to apparent deficiencies in small rural schools' vocational, occupational education programs. This project provided in-service workshops to develop courses and to review and revise the curriculum for various occupational fields. The project resulted in extensive curriculum revision and improvement of the vocational phase of guidance. Project recommendations for future development included: (1) providing in-service education for teachers to aid them in the development of simulated work stations which will improve students' competencies with the essential skills needed for successful job entry; (2) offering a "Survey of Occupations" course at the eighth grade; (3) continuing to up-date occupational information; (4) utilizing community resources to augment instructional staff; (5) continually up-dating and evaluating curriculum; (6) preparing teachers in the skills required for analysis of student occupational competencies; and (7) utilizing a variable class scheduling technique to optimize student learning and instructional requirements. A related document is ED 019 472. (DK)

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**U.S. Department of
Health, Education and Welfare
Office of Education
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A Developmental Vocational Education Research and
Teacher Education Program Based on a Clinical School Concept

THE DEVELOPMENT AND DEMONSTRATION
OF UNIFIED VOCATIONAL-TECHNICAL EDUCATION PROGRAMS
IN SMALL RURAL AREA HIGH SCHOOLS

By
H. Paul Sweany

Michigan State University
East Lansing, Michigan

March 1969

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education and Welfare. 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 Office of Education position or policy.

U.S. Department of
Health, Education and Welfare
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Bureau of Comprehensive and Vocational Education Research

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The success of a developmental project, such as this, is dependent on the cooperation and active support of many individuals and institutions.

The school personnel at Onaway, Felch-Channing and Crystal Falls, both administrators and teachers, gave wholehearted support to the project. Teachers and counselors in the schools were active in developing curricular and instructional materials and in offering instructional programs for students. Administrators assisted greatly in "smoothing the way" in terms of adjusting schedules and in making it possible for teachers to attend workshops and in-service meetings where details of the project were developed. Finally administrators accepted recommendations of teachers for changes in curriculum and initiated the action necessary to introduce the courses recommended.

The assistance of Michigan State University, College of Education, the Michigan Department of Education and of the United States Office of Education is also recognized. Without the financial and professional support of these agencies the project could not have been conducted in its present form. Although it was necessary to discontinue the project due to withdrawal of U.S.O.E. funds, the accomplishments of the first two years of the project have been significant.

TABLE OF CONTENTS

I.	Introductory Section	1
	Summary	1
	Introduction	5
	Methods	11
II.	Findings and Analysis	17
	Career Choices and Educational Planning	17
	Curriculum Study and Reorganization	19
	Simulation of Occupational Experience Programs	22
III.	Conclusions and Recommendations	24
	Introduction	24
	Occupational and Self Study for Educational Planning for Career Goals.	25
	Unified Vocational-Technical Education Programs in Rural High Schools	27
	Simulated Work Conditions for Occupational Experience	29
IV.	Supplementary and Appendix Materials	31
	Appendix A: Memorandum of Agreement	32

I. INTRODUCTORY SECTION

SUMMARY

The Problem

Small schools in rural areas have not offered broad, comprehensive, reimbursed programs of vocational education. Many have offered vocational homemaking, a few vocational agriculture, but practically none have offered vocational business nor vocational shop or trade skills. The sparcity of the population and the relative absence of industrial development make any form of education in rural areas costly even though supported generously by state funds. Yet the rural youth need all types of vocational education for many will eventually seek employment in urban centers. If they do not have occupational preparation for urban jobs, they will be forced to accept low-level, low-paying ones. The major goal in any vocational education is to provide that level of preparation which is consistent with one's ability. If rural youth are not as skilled as their potential would permit, they will be an economic burden in the community. The problem of providing adequate vocational education in rural schools must be solved by the state or nation and not solely by the rural community because many rural persons will be drawn to the urban labor market.

Conditions in rural areas call for different patterns of schools and courses than those being developed in urban areas. The vocational program in rural areas cannot be based solely upon the needs of people working in rural communities. This problem is not only what should be offered but how. Occupational experience programs provided by rural business and industry are often radically different than actual work in urban communities. Educational techniques must be found to develop vocational competency for jobs that are remote from the schools.

The Scope of the Study

The study was limited to three schools that accepted the development plan for improved programs of vocational education. One of the three schools, Felch-Channing, was unable to continue its commitments due to its inability to function in a single school plant. Each of the three schools did develop a course that offered a study of occupations and directed students to make tentative career plans on which educational plans could be developed. Nearly all ninth grade students were enrolled. Vocational education faculties in the two schools also reviewed the course offerings and proposed changes in the curriculum for the various occupational fields.

The Objective Pursued

This project sought to develop ways to extend the programs of vocational education by interrelating traditional curricula in one unified program specifically designed to occupational goals of rural students. Occupational education programs which had not met minimum standards were upgraded and new programs covering other occupational fields were added to the curriculum. Changes in occupational patterns in the local community and kinds of work which outmigrating youth could obtain in urban communities were made elements of the courses offered.

Methods Used

Workshops and other in-service education were offered to permit teachers to develop courses and to review and revise the curriculum for the different occupational fields. These activities resulted in closer working relationships within the faculties which became united in seeking to achieve common goals.

Results Obtained

Systematic instruction in career and educational planning was offered to students who were entering high schools and making decisions regarding the kinds of courses that they would take to prepare for life work. Several new vocational courses were added to the curriculum and the sequence and grade level of courses were changed. A study of the amount of duplication in courses preceded consideration of courses which cut across occupational fields. Although few intra-

curricular courses were offered, the teachers were made to understand the nature of courses and how the specialties of teachers could be utilized in offering courses to students preparing to enter different occupational fields.

Significant Findings

The nature of the project was to develop and improve instructional programs. Teachers who cooperated in the workshops and in-service meetings were stimulated to propose major changes in the curriculum, in the instructional methods and in the teaching aids. The morale of the teachers was raised by the introduction of new features in their programs. Administrators expressed gratitude for the success of the undertaking and considered offering the same opportunities for teacher-administrator discussions to discover ways to improve the educational programs in academic disciplines.

The close cooperation between the school counselor and the vocational teachers resulted in the improvement of the vocational phase of guidance. Students were reported as being able to discuss occupational opportunities with increased understanding. Their occupational goals were more consistent with their ability to achieve. Even the attitude of students in most situations was noticeably improved. The planned programs gave meaningful direction to many previously uncertain youth.

Significance and Implications

The pooling of efforts by teachers and by teachers and administrators broke down barriers, real and imagined, which might prevent a high type of cooperation in school matters. A real appreciation of the capabilities of the faculty in planning and revising programs was shown by administrators who sought ways to implement the recommended changes. The progress made in introducing desired changes gave teachers new confidence in their administrators.

In a similar way the observed changes in the occupational goals of students brought a maturing attitude which teachers recognized as evidence of the worth of their instruction. In both schools the success of efforts of administrators and teachers to work toward commonly accepted goals will surely stimulate many other cooperative undertakings initiated by either faculty or administrators.

Recommendations

The principal regret in the whole project was the inability to conduct the project a third year so that the vocational program could provide occupational experience through simulated work activities.* Experiences of teachers and administrators have suggested changes in practices which are expressed as recommendations:

1. Provide in-service education for teachers to help them simulate work stations which will develop competencies with the essential skills needed for successful entry in jobs.
2. Offer the "Survey of Occupations" course in the eighth grade prior to a choice of a vocational field for occupational preparation. Limit the course to one semester.
3. Continue to up-date occupational information and improve the learning activities to make the instruction more effective in individual planning of careers.
4. Utilize community resources in augmenting the instructional staff competencies.
5. Continue the study and development of courses which can productively enroll students from several occupational fields.
6. Prepare teachers who can analyze the occupational competencies needed by students and organize courses which can provide the instruction and learning activities to develop the desired skill levels.
7. Organize the school schedule so that the length of courses and the length of class periods are optimal for the learning needed. All courses do not need to have the same length and all students do not require the same length of time to develop adequate competency.

* This project, like many others, was forced to curtail its expenditures due to a reduction of federal funds for educational research. The project was cut off before its completion.

INTRODUCTION

The failure of the vocational education programs to keep abreast with economic growth and development was a primary cause for the passage of the Vocational Education Act of 1963. Although the evaluation was made in terms of the numbers enrolled in specific curricula, there was a recognition that vocational education was not accessible to youth and adults who might benefit from it if they had ready access to it. Occupational preparation based on needs and interest as well as a person's "ability to benefit from such training" suggests that various levels of vocational education should be provided. The Vocational Education Act of 1963 specifically states that federal funds may be used to provide "vocational education for (1) persons attending high schools, (2) persons who have completed or left high school and who are available for full-time study in preparation for entering the labor market, (3) persons ... who need training or retraining to achieve stability or advancement in employment (and) (4) persons who have academic, socio-economic, or other handicaps that prevent them from succeeding in the regular vocational education program." *

This Research and Development Project was directed specifically to the development of vocational education in rural areas. (See Figure 1 for counties with less than 50,000 persons. Over 80 percent of the population in Michigan lives in the 21 counties that are shaded.) Concern for rural areas of the nation was based on the fact that vocational education programs had not been available for youth under the Smith-Hughes and subsequent vocational acts and still might not be available under the Vocational Education Act of 1963, even though in its purpose the goal specifically stated was that programs be developed "...so that persons of all ages in all communities of the State, ...will have ready access to vocational training or retraining". **

In this project during a three year period, three major objectives were to be achieved: (1) to assist ninth grade students in tentatively planning their careers and educational programs, (2) to organize and teach courses covering competencies common to several occupations needed by students with different

* Public Law 88-210, Vocational Education Act of 1963, Part A - Vocational Education, Sec. 4a 1,2,3, and 4.

** Public Law 88-210, Vocational Education Act of 1963, Section 1.

occupational goals, and (3) to utilize simulated work activities as a substitute for supervised work experience when job stations are not available in the community. *

Kinds of Vocational Education in Rural Areas

During the first fifty years of reimbursed programs of vocational education in Michigan, only home economics and agriculture have been offered to any extent in rural areas. In each case the curricula for these programs was limited -- in home economics to homemaking and in agriculture to farming. These limited concepts of nature and scope of occupations in each field have greatly restricted the development of programs in vocational education for persons anticipating employment in other types of work in these occupational fields.

The cooperative experience program offered primarily in distributive, office, trade and industrial occupations has not been available in rural areas. A recent annual report ** lists only six of 449 programs in Michigan in schools of less than 300 high school students, while 342 of these programs were offered by high schools having more than 900 high school students. This clearly shows that schools with relatively small enrollments have not been able to offer, or be approved for, occupational experience programs.

Changing Occupations Patterns in Rural Areas

The occupational evolution in rural areas has become very pronounced during the life of reimbursed programs of vocational education in the United States. The introduction of electricity and mechanical power has materially increased agricultural production per worker. The percentage of the total population and to a lesser extent the number of persons required to produce food for our population has declined rapidly. Today's farmer produces the food consumed annually by more than 40 persons.

* These objectives and much other information were first reported in the interim report on this project in 1967. That report, also authored by Dr. H. Paul Sweany was entitled *The Development and Demonstration of Unified Vocational-Technical Education Programs in Small Rural Area High Schools*. East Lansing, Michigan: Research and Development Program in Vocational-Technical Education, Department of Secondary Education & Curriculum, Michigan State University, 1967, 15pp.

** *Directory of Reimbursed Vocational Education Programs in Michigan Secondary School Districts*.

Many other persons are employed in other functions which process, preserve, transport and market food to the consumer. Some of these workers, together with those in sales and service of equipment and supplies needed in agricultural production, are people who are considered to be in (non-farm) agricultural occupations. Nor is all agricultural production related to food. The production of fiber, ornamentals and wood raw products utilizes large acreages and involves a number of people.

The release of workers from food production in this country contributed to a shift of a part of the rural labor force to urban centers to produce other goods and services which people demand when such a small percentage of their wages is needed for food, clothing and shelter. Since the market for the luxury goods and the available manpower was increasingly found in urban centers, the manufacturing plants developed there; similar plants could not be justified in rural communities. Even though the production of parts for the manufacture of goods is often done by small firms, they have been located relatively close to the large manufacturing plants. Earlier efforts of some manufacturers to locate small plants in remote rural areas, far from the main assembling plants, have not been continued. Migration of people from rural areas to urban centers in search of work can easily be documented by comparing the population in rural areas by age groups for succeeding censuses. Many rural counties in Michigan still show a continuing decline in population, but not in birth rate. The need to prepare surplus rural youth for job entry in urban centers is an educational responsibility of rural schools as well as to prepare a proportion of them for occupations which are still found in rural areas.

In Michigan rural areas, the need to expand vocational education in health, hospitality, distributive, trade, industrial and agricultural occupations is as mandatory as it is in any community. Actually the curriculum problem faced by the rural school educators is no different than that faced by any public school educators who seek to provide meaningful and appropriate vocational education for high school youth seeking to prepare for relatively specific occupations. Some solutions may be different and conditions which seem to force different solutions appear in the next sections.

Present Problems of Vocational Education in Rural Areas

Many rural areas could be classed as economically depressed. The equalized tax base per student is likely to be so low that schools may be forced to curtail

programs which are elected by a small percent of the student body. Vocational education programs, if organized as specific occupational training in the high school, will be expensive if classes are smaller than the number which is considered optimal for most vocational courses. The need to develop courses to serve the common vocational needs of students with different occupational goals is one of the major objectives of this project.

Other limitations are related to the economic development of the area. The latest equipment, usually found in urban centers, is not available either in the school or in the community which may be used to prepare youth for work. Few job stations are available for occupational experience programs where manufacturing, business, or service occupations are lacking and the number of potential students for occupational experience programs far exceeds the economic development of the area. Many adults are underemployed in rural areas and compete with high school youth for job stations either on a full-time or part-time basis.

The shortage of teachers in general, and particularly those in vocational education, places rural schools at a disadvantage in offering quality vocational programs. Teacher education departments in colleges have not met the need nor has demand forced the adjustment of their teacher preparation programs to provide teachers for new and challenging programs of vocational education nor for new types of teachers needed for vocational education programs in rural areas.

Consolidation of present school systems in rural areas is stymied often by the distance between small schools and by the sparse population of the proposed total area. The distance to school for a majority of the rural students in high school is now great in miles and time. Students spend a large portion of their day in commuting. This travel is usually non-educative and time consuming. Students can hardly be bright and eager to learn if they have spent more than an hour in traveling to school. This time is usually duplicated on the return trip. The development of area schools poses a greater problem in rural areas than in urban centers. If students commute to an area school after traveling first to the home high school, distances may be multiplied. There is probably some physical formula that could be derived to determine the effect of travel by school bus on its passengers; fatigue likely increases with the square of the distance. Rural educators, particularly those in sparsely populated areas, feel that area schools at the high school level may not be a realistic solution to

the problem of making vocational education available to youth in rural areas. Yet all sense the need to introduce vocational education during the high school years if a large percentage of the students is to have access to vocational instruction while still in school. The number of youth preparing for specific jobs in rural schools, or even in any sized school, may be so small that group instruction for a cluster of jobs is a defensible solution when it is accompanied by individual or small group instruction and study.

There are other factors that tend to make the problem of providing vocational education in rural areas more difficult than that in or near urban centers. Some deal with school finance; others may be related to sociological and educational factors. There is evidence* that suggest rural-farm people as a group are educationally disadvantaged in terms of ability and in the amount and quality of education provided those who are present-day parents. The rural community has suffered greatly from outmigration of its most able people, but it also suffers from under-educated persons who remain. There are sufficient differences in present conditions and in their continuation to infer that special attention should be given to rural areas in planning and developing programs to meet the vocational needs of youth. Even though the percentage of the population in rural areas is small, state administration of vocational education must not disregard these people nor minimize their problems.

It is the hypothesis of this developmental project that programs differing in format, if not in objectives, can be designed and executed so that youth will begin their preparation for the world of work while they are still enrolled in secondary schools. This vocational education can be organized so that it will be basic not only to the work which they will do as they enter the labor force but also to the work which they will do as they improve their status or adapt to changing conditions.

* Economic Research Service, U.S. Department of Agriculture. *Rural People in the American Economy*, Agricultural Economic Report No. 101, pp. 20 & 21. Washington, D.C.: Superintendent of Documents, Government Printing Office, Oct. 1966.

METHODS

Innovations for Vocational Education Programs in Rural Areas

Certain conditions which are highlighted in the introductory section should be the basis for innovations considered. Changes in occupational work, slow economic growth, isolation from urban areas, declining population, migration from rural to urban areas, unavailability of jobs, and dissatisfaction of parents with the hardships which their families had experienced are factors which rural youth face as they consider their life work. The scarcity of federally supported programs of vocational education, the lack of a strong economic base for the support of schools, small and inefficient school systems, a shortage of fully qualified teachers, inadequate facilities and equipment, and a community whose social and economic problems require special consideration in program planning are factors which the school educators face as they seek to provide vocational education in rural areas. Finally, the lack of job stations, the scarcity of equipment needed for developing job entry skills, the shortage of staff necessary for vocational counseling and placement of students in exploratory and cooperative occupational work experience, the absence of vocational testing service for work-bound students, too few occupationally experienced teachers, or vocationally qualified instructors are factors which limit the educational program for developing job entry skills by vocational students.

Needs of Students from Rural Areas

The three major needs of students preparing for work were tied up in these three sets of factors. These may be stated as follows:

1. The need for knowing one's self more objectively and having a broad orientation to the world of work before planning one's occupational career or selecting an educational program to prepare wisely for adult work.
2. The need for appropriate and adequate vocational instruction unhampered by departmental loyalties or stymied by long courses and programs loaded with non-essentials for one's specific occupational choice.
3. The need for pertinent occupational experience through simulated learning activities provided by the school when job stations are not available for cooperative work experience.

The Initial Plan for the Project

At the outset, this project was considered to have three phases: the planning phase, the training phase and the demonstration phase. It was never considered that the planning phase was to be completed before the training phase was started nor that the first two be completed before the demonstration phase could be undertaken. A developmental project implies that the director utilize the total staff of administrators, supervisors and teachers in developing all aspects of the project. Furthermore it was considered to be a three year project at the minimum and some elements could not be undertaken until the students who were participating in the first steps of the program at the ninth grade level could participate also at the twelfth grade level in the latter steps.

It was necessary for the director to plan some form and substance for the nature and scope of the project which would later be developed to achieve desired goals. The proposed rural school program was described in a mimeographed paper* which was discussed in some detail with administrators in four Michigan high schools. These schools were chosen because of observed and expressed interest in improving their vocational education and recommended by vocational leaders at Michigan State University and in the Michigan Department of Education.

This mimeograph was developed while the Project Director was located at the National Center for Research and Leadership Development in Vocational and Technical Education while on a sabbatical leave from Michigan State University. This absence made it difficult to maintain close working relationship with the staff for the Research and Development Program at Michigan State and to make contacts with the schools. Three of the four originally contacted became cooperating schools. In each case the local school boards officially directed their local school staffs to participate in the project as established in a project agreement. (See Appendix A.) These schools, all in the northern part of Michigan, were the Onaway Area Community Schools at Onaway, Forest Park Schools at Crystal Falls and the Felch-Channing Schools in Dickenson County. The latter school had just been consolidated, but the original school organization has

* Paul Sweany, *The Development and Demonstration of Unified Programs of Vocational-Technical Education in Small Rural Area High Schools*. East Lansing, Michigan: Research and Development Program in Vocational-Technical Education, Department of Secondary Education and Curriculum, College of Education, Michigan State University, 1966. Mimeograph, 13pp.

been continued since a new building has not been constructed. Because a limited staff taught many classes to few students, only a minimum of participation was possible by teachers and others in the Felch-Channing School System.

Three Innovations for the Project

Based on the major needs found on page 11 of this report three innovations in vocational instruction were selected. They were:

1. Teach in-coming high school students a course combining a survey of occupations and a study of one's capabilities before making a tentative selection of career options and developing an individual educational program that would prepare for entry and advancement in an unfolding career.
2. Restructure the secondary curriculum so that any vocational student could study any vocational course if it appeared to develop occupational competence for his tentatively selected career.
3. Provide occupational experience programs through simulated work stations which would develop practical and true-to-life competencies similar to those normally obtained for job entry through cooperative work experience programs.

Career Choices and Educational Planning

The title of this innovation is neither new nor unique but the emphasis placed on some of its elements are particularly needed in rural areas. Many youth consider too few alternatives when making decisions regarding their future. This is not surprising. Many youth, wherever they live, do not know what their parents do if working away from home; they probably know where they work but they may never have seen just where in businesses or plants they are working or the conditions or the nature of their work. They could hardly expect to know much about many of the types of work which people do. It would not be easy to introduce youth to all the jobs which people do, but they need to know much more about the nature of different types of work if they are to choose more wisely the kind of work they may capably do when they have had access to an appropriate vocational education program. For youth in rural areas and to a lesser degree for any youth, the kind of work which they will do may be many miles from their teenage homes. The mobility of people results in many people working miles from their parental homes. With the industrial and social revolutions continuing it is logical to expect that many new jobs will be

created in the occupational life time of present day youth which could become their career if they are able to make the necessary occupational adjustments which a new occupation might force upon them.

Since in rural areas the number of persons having few contacts with the "so-called" outside world is great, the need to provide youth with an understanding and appreciation of the opportunities for work in many distant businesses and industries is very important. This was the challenge that was given the vocational teachers and counselors in the cooperating schools. Although the behavioral objectives and outcomes were to be the same in cooperating schools, the methods of achieving them were not prescribed. The goals which were established were these: (1) All students were to receive a brief introduction to all occupational fields, particularly those which were included in vocational education programs. (2) Each youth would take some of the standardized interest and aptitude tests in addition to the achievement and academic tests commonly given so that they might know their capabilities objectively. (3) Each would be encouraged to compare his capabilities with the demands of occupational fields which seemed to interest him. (4) A tentative selection of specific jobs would be made within interesting occupational fields for more intensive study. Job requirements would be related to one's potential before making a tentative choice of an occupational field and the level of work which he could successfully master. (5) A high school program of study for each student would be planned that would enable a student to enroll in any vocational course that would help to develop those competencies needed for successful job entry. (6) Make tentative plans for continuing in whatever post-high education is essential for advancement in this occupational career.

In all cases this instruction was offered at the ninth grade. In the high schools at Crystal Falls and Felch the instruction was given during the class time allotted for home economics, general shop, and agriculture. Only a limited amount of time was devoted during the year to this teaching since it was a part of beginning vocational classes. At Onaway, a separate course was offered and most ninth grade students were enrolled. In the latter case, the time devoted to the instruction was equal to any hour class in the school schedule. The difference between the amount of time devoted to this instruction is not as great as it might seem since in the former schools, individual and small group counseling was provided by the guidance director as students worked on their educational plans independently and brought them in for review when they had

completed a form provided by the school for selecting classes for their remaining high school years.

Revision in the methods of offering this instruction have been made since this first-year experience and these will be discussed in the findings section of this report on pages 19 - 21.

Curriculum Revision

The kinds of classes offered and the high cost of instruction was mentioned in the introductory section. The cost of many classes was not reimbursed by state and federal funds for a variety of reasons, and the schools were providing vocational instruction of differing qualities. One cause of the high cost per pupil was small number of students in the classes. Curriculum study and possible reorganization of courses both in terms of content and of objectives might enable students to enroll in interdisciplinary courses. Both the use of faculty committees as well as professional study by teachers were utilized to prepare teachers to study possible changes in the curriculum that might be made. Two goals were suggested for this work: one, to develop new courses which covered areas of instruction which were duplicated by teachers in courses that were offered to students in each occupational field; and secondly, to discover areas of needed instruction which were not taught in courses because teachers were not qualified nor prepared to offer them. The more effective use of teachers, or the hiring of new ones who were prepared to offer the instruction needed, was suggested if new courses offered such content.

Both in-service meetings or workshops and/or graduate credit courses were conducted for the teachers in the cooperating high schools to increase the professional competency in curriculum work. Some suggested courses of study were provided to serve as illustrations for some that might be recommended by teacher groups. Some of the examples were for semester or quarter length courses which if adopted in principle would make major changes in the scheduling process. Resource persons were invited to workshops to explain how flexible scheduling worked in their schools and to present the merits and problems faced in introducing a new pattern of schedules.

Some of the outcomes of these efforts are reported in the section devoted to the findings.

Simulation of Work Experience Programs

In small communities the number and size of businesses and industrial plants are also small. The number of possible job stations for students who might wish to be enrolled in cooperative work experience program would also be small. For this reason, some other provision for work experience seemed necessary if rural youth were to have learning activities that were similar to those obtained on-the-job in cooperative work experience programs. The development of these simulation activities were to receive major attention in the third year of this project. The graduate assistant as a part of his normal graduate work was to search the literature for types of activities which had been used to substitute for life situations to develop desired competencies. Some of these have been reviewed and appear in a separate paper outlining the steps in simulating work.* Through in-service meetings and workshops the project directors and teachers were to plan work experiences similar to those provided in job stations used in cooperative work experience program. Before using these simulated experiences on a large scale the different techniques were to be tested to determine their effectiveness. Everything possible was to be done to revise and refine the steps necessary for maximum outcomes to be achieved.

Normally students have senior standing when they are enrolled in cooperative work experience programs. In 1969 those students, who had studied their capabilities and selected a tentative career so they could prepare for it, would be eligible for on-the-job training.

* May be obtained from Paul Sweany, 337 Erickson Hall, Michigan State University, East Lansing, Michigan 48823.

II. FINDINGS and ANALYSIS

CAREER CHOICES AND EDUCATIONAL PLANNING

In the section dealing with methods the different procedures used by the cooperating schools were mentioned. The schools at Crystal Falls and Felch placed most of the responsibility for the instruction pertaining to the world of work in the hands of the vocational teachers whereas at Onaway the assignment was given to counselors. The counselor at Crystal Falls assumed a major role in directing the testing program and counseling with either large or small groups as he taught the ninth grade students how to interpret the objective data obtained from standardized tests. He was responsible for counseling students when they did make tentative choices of occupational and jobs to become basic to the kind of vocational education that would be included in their educational plan. In Onaway the counselors who taught the entire course provide the services which the counselor provided at Crystal Falls.

In order for the reader to understand some of the differences between the methods used in offering the course, information is given in tabular form.

Differences in the Organization of Instruction in a Course for Career Choices and Education Planning

	<u>Onaway</u>	<u>Crystal Falls</u>
Number of class meetings	150 (separate class)	25 (periods in 9th grade shop or home economics courses)
Classes taught by	counselors	vocational teachers
Testing programs directed by	counselors	counselors
Interpretation of test scores	counselors/teachers	counselors
Director of educational planning	counselors/teachers	counselors
Initial average score on vocational maturity scale	low	average
Gain in vocational maturity (test/retest)	large	small

Reactions of Teachers and Administrators to the Course Offered in 1966-67

1. The educational plans made by ninth grade students who were enrolled in the course were more complete and more realistic than those made by similar students in previous years.
2. Students discussed their educational plans more maturely with their counselors. They had a background which gave them confidence in discussing their plans and their reasons for them. Freshmen who had taken the course seemed to have a vocational maturity commonly associated with juniors and seniors.
3. The data obtained in a companion study of vocational maturity which included both Onaway and Crystal Falls showed that students made considerable growth during the freshman year. Growth in vocational maturity was greater for students who scored lower at the beginning of the year than those with higher maturity scores.
4. More time was devoted to class instruction in the school where students showed greater growth.

Due to changes in the vocational curriculum recommended by teachers, the number of incoming 9th grade students electing the course in the second year at Onaway was not large. A new business education course offered ninth-grade students was especially attractive to them. Teachers in the Onaway schools also had offered some instruction regarding specific occupations in 9th grade vocational courses duplicating some of the specific information provided in the new course.

Data were obtained from ninth and twelfth-grade students in the Onaway and Crystal Falls schools for the 1967-68 school year. The objective was to determine how students who had not taken the course compared with the 1966-67 freshmen in terms of their vocational maturity. These data have not been analyzed because of a shortage of funds.

The curriculum study and observed differences in ninth-grade students in the Onaway Schools caused a course to be offered in the second semester of the eighth grade in 1968-69. The occupational study course to be offered to all eighth grade students will enable them to plan their high school programs before they enroll in their ninth-grade courses. The course was shortened to make more efficient use of student time. It is hoped that a shorter amount of time may increase interest of the students.

CURRICULUM STUDY AND REORGANIZATION

One of the more significant changes in the curriculum occurred as a result of curriculum study. In both Crystal Falls and Onaway similar changes were made using different processes.

Onaway

In Onaway the high school faculty members were assigned to committees which made recommendations for instruction and course organization. Nearly all of the vocational teachers had enrolled in a graduate course partially subsidized by research and development funds. The vocational staff spent three days in a workshop under the direction of the project leader, assisted by the instructor of the curriculum course and four graduate assistants from the vocational fields. Each teacher provided a breakdown of the content of courses offered. This revealed considerable duplication, particularly in the distribution phases of the occupational fields. This evidence supported the concept of a unified program in vocational education so that students might receive instruction by the most qualified teacher, both in experience and education, in the school system.

In addition to the curriculum study teachers were encouraged to discover what their professional and occupational education qualified them to offer students who were commonly taught in other vocational courses. For example, agricultural teachers had much to offer to students majoring in food service, not in the production phase but in recognition of quality products and how to maintain this quality. Both agriculture and shop teachers could provide basic training in the maintenance and construction of facilities and grounds used in hospitality occupations. Rural communities in Northern Michigan and in the Northern Peninsula were rapidly becoming tourist and winter sports areas and occupations related to this recreation industry had overtones of occupational skills formerly reserved primarily for farming and forestry. This growth in tourism seemed to justify the study of land utilization and development of natural resources on private property for gaining a return from the crop of tourists and outdoor sports enthusiasts.

The curriculum revision was not limited to vocational courses. Instruction in science, math, English, communication and to a lesser degree, the social

sciences, were modified to meet the needs of a majority of students who did not aspire nor have the capability to study an academic curriculum needed for entrance into four-year colleges. New courses are being offered in applied science which places less emphasis on theoretical aspects of learning and more on understanding basic principles and their application to things found in the technical and occupational world. Since many basic principles apply to more than one occupational field, these courses could be offered to students in any occupational field that would utilize the basic principles. It is anticipated that classes in science, math, English and some social science courses for college-bound students might have smaller enrollments than similar courses for vocational students. A recent curriculum guide* printed by the school, document these changes in the curriculum. If this project had been continued through 1968-69, the first experiences with new courses and team teaching, with two or more vocational teachers or with a vocational and an academic teacher, could have been reported.

Crystal Falls

No curriculum course was offered to teachers in the Crystal Falls community. One teacher did attend an appropriate course in the Iron Mountain area approximately 40 miles away. Through a workshop offered to both Onaway and Crystal Falls teachers, some direction was given to curriculum study. This was followed by a special consultant in-service program. Two-hour conferences were held with teachers of each vocational curriculum with the superintendent, principal and guidance director. Teachers reported their recommendations for changes in courses offered in their fields. This provided the administrative staff with the judgments and conclusions that teachers had made regarding their courses. A vocational course in electronics was recommended by shop teachers. A personal typing course for one semester was recommended for all students at the 10th grade level so that those taking advanced work could be enrolled in vocational courses in typing. A change in the shorthand instruction was suggested with emphasis on transcriptions. Many new office machines were recommended and secured so that in 1967-68 the personal typing course was introduced and in 1968-69 other recommended changes were being implemented.

* Onaway Area Community Schools, *Curriculum Guide K through 12*. Spring 1968.

At the conclusion of this experience with vocational teachers the administrators agreed that this procedure should be initiated with other secondary teachers.

Within six months after the teacher suggestions were given, administrators reported that many courses were being added and if not added what problems were being encountered in implementing the changes in the curriculum. It did much for the morale of the teachers to hear of the intent of the administrators to carry out suggested changes.

Summary

In summary it is significant to observe that curriculum reorganization that had been initially introduced by work with vocational teachers was not allowed to end with them. The total reorganization of the curriculum was necessary in order for it to be coordinated into a workable program. The anticipated improvements in the instruction could not be immediately evaluated since many of the changes are being introduced in 1968-69. Since the programs in the schools differ and the types of adjustments also vary, only subjective data will offer information pertaining to the value of the changes. Each school can be treated as a case and reactions of students, teachers, and administrators can be used to evaluate the worth of the program undertaken. It is hypothesized that any student will achieve at the level of his ability in these new courses and, if students who might pass satisfactory college preparatory courses are enrolled in these applied science courses, they will not be short changed if they should later decide to pursue an educational program leading to a baccalaureate degree.

SIMULATION OF OCCUPATIONAL EXPERIENCE PROGRAMS

Occupational experience programs paralleling class instructional programs have long been recognized as an important segment of any vocational education. When the vocational skills were based on farming or homemaking, occupational experience could be provided by realistic projects in the home environment. Since most occupations today are removed from the home situation, the need to find job stations in businesses or in industries for gaining experience is apparent. Many occupations today in technical agriculture or home economics are not home based. The increase in the number of vocational students requiring work experience away from the home environment is great and the organization of successful programs is dependent upon the opportunity for occupational experience in real life work.

The rural areas do not have large businesses or industries where youth may be placed to work. Often the wages for regular employees are low and the wages for students may be less than the minimum wage. Employers in small businesses are quite reluctant to employ youth who have not reached their 18th birthday. Even though coordinators or teachers have explained the deviations which can be obtained to permit student workers to do work when they have been carefully taught to do this kind of work by the vocational teacher, they still refrain from employing students under 18 years of age.

Even though the scarcity of good work stations may not be a limiting factor in offering occupational work experience, all schools in providing good instruction in vocational education are looking for ways to teach skills. Simulation of work conditions is necessary to provide real true-to-life situations for teaching students to work efficiently. The laboratories and the shops have been used for years to develop both manipulative and managerial abilities and to increase understanding of principles and procedures taught in the classroom. Often very little repetition is provided in shops or laboratory. When projects are involved, evaluation may be directed toward the product and little attention given to the processes or procedures. Vocational speed and accuracy are both essential for a worker's success and youth have an opportunity in an occupational experience program to develop these qualities.

Simulation of real situations have been used in many training programs. Military training has benefitted from the use of simulated trainers. The

audio-visual materials have been used and they have proved effective in the learning activities. There is little doubt that simulation of work situations will be an effective substitute for actual work stations in providing a synthetic work experience. Its success hinges on the development of aids to achieve effective teaching and learning. It will require considerable creativity to develop the situations and the visuals needed. Our cooperating schools need financial support for the space and for the equipment needed. Additional teachers will be needed to direct the activities organized and taught. Technical help is needed to sharpen the efforts of both the director and his assistant and teaching staff to maximize the chances of success in this venture. It is the plan of the University to solicit support of this phase of the project both for the University staff and for participating schools. It is recognized that a companion evaluation project must be undertaken to compare the student outcomes of those having simulated learning experiences and those with actual occupational work experience.

It is regretted that a delay has been necessary in this phase of the project, however, students that were involved in the first phase of the project could still be the first to be involved in the simulated work experience if funds were available during the school year.

III. CONCLUSIONS and RECOMMENDATIONS

INTRODUCTION

Although few objective data have been secured by the schools, introduction of new courses, identification of and emphasis on occupational objectives by students and changes in the educational practice have been accepted as evidence of progress in improving vocational programs which utilized some of the innovations being used in programs throughout the United States. In this case they were being introduced into and adapted to small rural high schools. In most cases the introduction was being made without a great expenditure of funds so that other schools without the benefit of additional financial support could adopt the practices, found worthy, in their school systems.

The conclusions and recommendations must be related more to educational process than to the educational product because there has not been a long enough time interval to develop, test, and revise the innovations before the student occupational competencies (as outcomes) could be tested and tried in their chosen occupational fields. Long-time goals require evidence that objectives have been achieved. Since the project cuts across vocational fields, many evaluative instruments still must be developed to determine the occupational growth of youth seeking entry into many vocational fields.

General conclusions have been drawn by the teachers and administrators and changes are being planned and introduced into the high school curriculum. The recommendations listed are usually based on the changes being considered or introduced in the vocational program.

OCCUPATIONAL AND SELF STUDY FOR EDUCATIONAL PLANNING FOR CAREER GOALS

Based on the assumption that no youth has had an experience which would enable him to wisely choose reasonable life-goals, all students should study several possibilities before committing themselves to one and enrolling in appropriate courses. Furthermore, no youth starts at the top; he must have initial and intermediate goals. These may be clearer and the preparation needed more easily determined.

Because of this position, students in all cooperating schools were directed to study the world of work, themselves, and finally the nature of work in a few occupational fields in order to narrow their choices before planning an educational program to prepare them for their future. The conclusions and recommendations in this section are based on experiences with this innovation.

It was recognized that other schools were using group counseling through organized courses to guide students in planning for their future. Differences in these efforts were determined in part by the goals which were to be achieved. In this project a student's choice was not left to chance, but careful study of occupational literature was needed before a student committed himself to a vocational field. This was considered an important phase of vocational education because it is one of the most important decisions that anyone can make.

CONCLUSION: *One can increase the vocational maturity of early high school students through a study of occupations and the student can make more realistic choices of occupational goals if he relates his known abilities, interests and potential for educational and occupational growth to the level of work which he can master.*

RECOMMENDATION: *That the course used by students to study and plan their educational and occupational careers, be offered at the eighth grade level and that it be a one semester course.*

It is recognized that many educational leaders are recommending that this study be a continuing activity through the elementary school. In the above recommendation it is to be inferred that this course is dependent on exploratory courses offered in the seventh and eighth grade and on units related to different kinds of work which teachers in elementary schools regularly offer. The success of the above recommendation is not based on isolated educational

and occupational experiences. It is intended that students have an overview of many occupational fields so that their similarities and their differences will be clearly understood.

RECOMMENDATION: *That the school utilize appropriate instruments to measure student interests, attitudes, and abilities so that each may have objective evidence of these factors as an index of his potential. Furthermore it is recommended that the student and his parents be aided in interpreting these data so that the choices made are realistic in terms of the student's potential as measured by imperfect instruments.*

UNIFIED VOCATIONAL-TECHNICAL EDUCATION PROGRAMS IN RURAL HIGH SCHOOLS

It has been observed that persons may change their occupation as many as five to seven times in their lifetime. Some of these changes may be within a single occupational field or if changes in fields, the nature of the work in the two occupational fields may be very similar in function so that one's preparation and experience may be ideal for the change. But for persons who lose jobs due to automation or obsolescence and are forced to seek employment in other occupational fields, basic vocational courses will alleviate some problems of qualifying for other kinds of work.

Vocational education that prepares youth so specifically for one job that they have no preparation for other jobs, if they must seek employment in other fields, can hardly be classified as education. It becomes as it is sometimes called "training", with emphasis on how to do with little understanding of the principles that are involved and no consideration for other work which utilizes the same principle in other operations.

There is need to break down the barriers that exist between vocational departments in high schools, which block the organization of a curriculum based on functions workers do in many occupational fields. To achieve this goal, cooperating schools were encouraged to develop a unified curriculum for vocational education. In an effort to accomplish this goal, school personnel sought to eliminate needless duplication of content in classes offered in separate occupational fields.

CONCLUSION: Semester courses of six-or nine-week courses should be organized so that major units based on functions of workers in business may be offered in a single course to students planning to work in different occupations.

CONCLUSION: Curriculum study and reorganization by a school faculty will result in developing a more unified approach to teaching and learning with a greater relationship being developed between the different fields of vocational education and between vocational courses and science, math, or English courses.

CONCLUSION: Changes in curriculum will occur if teachers and administrators confer regularly about the adequacy of the courses for preparing youth for entry jobs and about possible changes to improve the organization or the instruction.

RECOMMENDATION: *Curriculum study and evaluation should be a joint effort of both administrators and teachers and in-service programs should be offered to improve the competencies of local educators to improve the curricular offerings of the secondary schools.*

CONCLUSION: *Many small rural schools cannot be staffed to provide highly qualified teachers in all vocational fields. When qualified teachers in a vocational field cannot be obtained, currently employed vocational teachers may teach courses which they are qualified to offer, to meet the occupational needs of students even though in different occupational fields. Regular vocational teachers should also be used to direct the teaching of special teachers from occupational fields employed part-time or for short periods to fill the instructional gaps due to the unavailability of regularly certified teachers.*

RECOMMENDATION: *When content that is applicable to more than one field can be organized in one class, students with different occupational goals can benefit even though the teacher may not have had occupational experience in each field. Furthermore, workers in occupational fields should be employed on a part-time basis to teach under the supervision of qualified vocational teachers in other fields that instruction which is needed by students.*

SIMULATED WORK CONDITIONS FOR OCCUPATIONAL EXPERIENCE

Many schools offering vocational education programs are not able to provide occupational experience for all types of work which youth preparing for job entry may need. Some kinds of laboratories may be developed without serious competition with local businesses or factories. They may be reasonably good replications of work stations which might be found in the community. Others can never be realistic when transplanted to a school environment. Many cannot be economically placed in the school. If all could be, the program would still fall short of the ideal.

Two types of work stations still would be unavailable -- (1) the type of work not found in the local community and (2) that which will be added later to the economy. The former relates to the sectional characteristics of certain occupational fields; the latter pertains to new industries that develop to provide necessities or luxuries for mankind. Workers can be prepared for these work opportunities through simulated work stations. It will be easier to simulate occupations which occur in areas of the state which normally attract workers from rural communities. It is urgent that both communities, the rural and the urban community help to prepare youth for work that is available when workers migrate to the urban community.

CONCLUSION: Occupational experience is not often made a part of programs that lack reimbursement. In many rural areas where there is an outmigration of population, the number of businesses which can cooperate with the school and provide occupational experience for high school youth is not adequate for the number seeking to gain this experience for initial entry into full-time work. Furthermore, many youth who leave the rural community have opportunity for employment in types of work not found near their home. As a result, the quality of occupational experience in the rural community is low or lacking entirely.

The simulation of occupational work conditions in school facilities to give youth occupational experience is being considered as a substitute. Application cards which certify the kind and amount of experience supervised by school personnel is one means of informing prospective employers of preparation youth have had for work. Youth should have experience in actual work if possible. The opportunities that exist in rural areas during the tourist, hunting or winter sports seasons offer work opportunities on a seasonal basis that must

be used to maximize the learning of general work competencies if not specific experience for one's chosen field.

RECOMMENDATION: *The schools must seek to utilize all community resources to provide either actual work or simulated experiences.* The renting of buildings or businesses open for only certain seasons of the year may offer facilities that can be utilized much more economically than can be owned and utilized by the school. Even equipment may be rented in these businesses. The schools should use limited resources to purchase some audio-visual equipment which could be used to record actual work situations that can be repeated with different students to make instruction more realistic when correlated with simulated work experience.

IV. SUPPLEMENTARY and APPENDIX MATERIALS

APPENDIX A

RESEARCH AND DEVELOPMENT PROGRAM
IN VOCATIONAL-TECHNICAL EDUCATIONMichigan State University, 310 Erickson Hall

MEMORANDUM OF AGREEMENT

The Research and Development Program in Vocational-Technical Education at Michigan State University and the _____ School District, City of _____, State of _____ agree in principle via this memorandum to conducting a research program in vocational education. This agreement is one of cooperative intent to work for the improvement of vocational education, rather than a legal contract.

The research activity to which this memorandum pertains is mainly supported by a grant from the United States Office of Education to Michigan State University under contract #OE-5-85-111.

Both Michigan State University and the _____ School District agree to carry out the research effort beginning _____ 1966 and continue at least through _____, depending on United States Office of Education continuation of fund support. The personnel at Michigan State University and at _____ School District recognize that each should be free to suggest modification of this research program at any time and that either may withdraw at any time.

The specifications of this research endeavor are shown on the attachment.

Considerations of this agreement include:

1. All research data and reports are confidential and the property of the United States Office of Education until formally released by the M.S.U. Project Director in conformity with the terms of the U.S.O.E. contract.
2. Pilot schools and state departments involved in this research program are considered for payment purposes as providing consultant services. Subject to U.S.O.E. approval, payments will be made by purchase order directly to schools involved.

/s/ _____
Peter G. Haines, Director
Research and Development Program
in Vocational-Technical Education
Michigan State University

/s/ _____
Superintendent or Authorized
Representative
School _____
City _____ State _____

APPENDIX A (cont.)

Unified Vocational Technical Education Pilot
Program in Small High Schools

Established to develop unified programs utilizing three specific innovations:

1. Organize and teach courses covering content common to several occupations for students with different occupational goals.
2. Use simulated work experience as a substitute for supervised work experience.
3. Offer a broad survey course of Occupations.

Responsibilities of Michigan State University

- provide one-week workshop in late August to make final preparations for new courses being outlined and introduced in the current year. Room, board, travel, and books and materials will be provided for each approved participant.
- provide instructional material, staff library in the pilot school and a circulating library. Secure a collection of free occupational materials for school use to become school property.
- assist with the development of course outlines and curriculum guides.
- provide consultant time of M.S.U. research staff for visitation at cooperating school and for in-service meetings, workshops, and evaluation (10 days of school visitation; 5 in-service meetings; one week workshop; 2 days evaluation session).
- provide such tests or other evaluation instruments that will be used over and above those normally given students to obtain information for guidance and counseling.
- develop simulated occupational experiences to substitute for actual occupational experiences not available locally.
- reimburse selected teachers for preparation of special student materials that will be duplicated and used in all cooperating schools.
- reimburse school 50% of one period per day of one teacher to be devoted to evaluation and research (approximately 2 1/2 hours per week).

Financial Arrangement

M.S.U. will provide the local district such funds that are equivalent to 50% of the salary for one period per day for a teacher's time (less any state vocational reimbursement for that period of time). Such M.S.U. contributions

APPENDIX A (cont.)

will be paid to the school in three installments on November 30, March 31, and June 30 of each school year that the project is in operation.

M.S.U. will reimburse selected teachers for preparation of special student materials as contracted for on November 30, March 31, and June 30.

Responsibilities of Local School District

- initiate and operate program according to pilot plan specifications.
- provide 5 days released time for teachers to attend in-service meeting during the school year.
- send teachers to a one week workshop at a time approved by cooperating schools and M.S.U.
- designate one of the team of teachers as the program leader.
- provide for testing of students in the pilot program at selected intervals of the school year.
- provide usual instructional materials such as textbooks, reference books, and materials, and audio-visual materials.
- provide for adequate room space and for facilities, furniture, and fixtures as needed for operation of the program.
- establish a local advisory committee for the program.
- provide M.S.U. research staff with opportunity for observation of the pilot program.
- provide for follow-up of pilot classes.

Local School Contact Person

Name _____ Position _____

Address _____ Phone _____

Michigan State University Project Leader

Dr. H. Paul Sweany
337 Erickson Hall
Michigan State University
East Lansing, Michigan

Phone: 353-6455
355-1835

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PERSONAL AUTHOR(S)
H. Paul Sweany

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ABSTRACT
This is a developmental project designed to expand and improve the vocational offerings for high school students in small rural schools in Michigan. These schools are located in sparsely settled areas of the state where there is very little industry and where there is a large amount of out-migration of people.
The program involved three schools in northern Michigan. The project sought to develop ways to extend programs of vocational education by interrelating traditional curricula in one unified program specifically designed to meet the occupational goals of rural students.
Workshops and other in-service education were offered to permit teachers to develop courses and to review and revise the curriculum for the different occupational fields. These activities resulted in closer relationships within the faculties which became united in seeking to achieve common goals.
Records, observations of the director and of local personnel, and reports from the schools indicate the success of the project in terms of a broader scope of career information and in terms of improved working relationships by administrators, counselors and teachers in the schools that were involved. New programs were introduced and the total curricula in the secondary schools were being revised to meet the needs of occupationally oriented students.

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