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ABSTRACT

This publication provides a descriptive report of 24 mini-grant proposals funded by the Oklahoma Research Coordinating Unit to secondary teachers and counselors. Each report includes: (1) the director(s) and title(s), (2) school affiliation, (3) school administrator, (4) estimated cost of the project, (5) summarization of activities, (6) illustrations of products or examples of materials if any were generated in the project, (7) dissemination activities following completion of the project, and (8) some editorial comments regarding the apparent success or failure of the project. Of the 24 projects, 10 proposed to develop curriculum materials, five resulted in new programs or a new unit in an existing program, and seven others resulted in development of techniques new to the investigators. A total of 18 investigators were successful in reaching their project objectives. It was concluded that vocational teachers and counselors are competent in conducting research and development projects which lead to improved practices in their teaching, and the mini-grant program is an efficient and economical technique for use as a change catalyst. Several recommendations were made, and the major proposal for the mini-grants is appended. (SB)

Teachers with IDEAS

TEACHERS WITH IDEAS--IN ACTION

A Report of Mini-Grant Projects Approved in 1971

Compiled and Edited By

William D. Frazier

1972

RESEARCH COORDINATING UNIT
DIVISION OF RESEARCH, PLANNING, AND EVALUATION
OKLAHOMA STATE DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION

The work presented or reported herein was performed pursuant to a Grant from the Oklahoma State Department of Vocational and Technical Education. However, the opinions expressed herein do not necessarily reflect the position or policy of the Oklahoma State Department of Vocational and Technical Education and no official endorsement by the State Department should be inferred.

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INTRODUCTION

The project herein reported was developed for the expressed purpose of giving teachers "seed" money with which to develop new and innovative ideas. It was hypothesized that teachers would be able to develop improved teaching methods, techniques, materials or resources given only minimal support and encouragement from the Research Coordinating Unit. Projects were limited to $1,000 or less in State support.

In order to establish the program, the RCU in January of 1971, put out a call for proposals to vocational and technical teachers and counselors in Oklahoma. As a result of the request, seventy-three proposals were submitted. These proposals were reviewed by staff of the State Department, Division of Research, Planning, and Evaluation, and by the State Supervisors of program Divisions.

A total of twenty-four proposals were approved for funding with the anticipation that each would result in a report which would have practical application to other teachers or counselors in similar situations. Eight proposals were tabled because of minor deficiencies and limited funds; five were referred, because of their content, to a different funding source; and thirty-six were disapproved.

An effort was made to require each project director to evaluate his or her activities in the project. However, because of the time constraints, evaluation was not made a component of the total program. Evaluation of the total project will be carried out through the 1973 fiscal year as stated in the proposal.

The major portion of this report which follows is the descriptive report of each mini-grant project including a summarization of the activities, illustration of products or examples of materials if any were generated in the project, any dissemination activities following completion of the project, and some editorial comments regarding the apparent success (or failure) of each project. Each report will list the director (or directors) of the project, his title and school affiliation, the school administrator, and estimated cost of the project. It should be pointed out that the very diversity of these projects requires a variety of reporting formats. The bulk of a report as summarized in this publication

is not intended to relate to the value of the project, but rather to the most efficient method of communicating to those who may have interest in the report.

A final section of this report offers a summation of the total projects and empirical conclusions regarding the mini-grants project as a whole.

Title: A Text-Correlated Cassette Tape Program to Improve Typing Speed and Accuracy
Director: Ellen Lowrey, Business and Office Education Instructor
School: Indian Capital Area Vocational-Technical School
Administrator: Gene Beach, Superintendent
State Support: $127.50

Purpose: The purpose of this project is to determine if students' typing speed and accuracy can be improved by use of a professionally prepared tape program that is correlated with a specific textbook.

The Report

The Mini-grant that provided the Business and Office Education Department with correlated cassette tapes for Typing Drills for Speed and Accuracy was definitely a beneficial addition to the classroom.

When the application was made for the grant, it was hoped that a comparison of scores could be made and any improvement in typing speed and accuracy noted after using the taped instruction for the last two months of the school term. However, they arrived in time for the beginning of the second term, and after using the tapes for this year's students, it is evident that a comparison of last year's scores with those of this year would not have been valid, because of the great difference in the students. The learning ability and manual dexterity of this year's students were much greater than those of the preceding year.

The tapes were correlated with 57 drills in Gregg/McGraw-Hill's textbook, TYPING DRILLS FOR SPEED AND ACCURACY, 3rd edition, with inventory timings and progress tests. They were played on cassette recorders, channeled into our individual listening station system in the classroom.

Each student set her own goal for improvement, three to five words above what she was currently typing, and on attaining this goal, would set another. There was no competition among students on this particular project. Each student was encouraged to break her own record. A bulletin board with real music records was made to go with the project, with the caption, "Care to Break Your Record?" Each time a student topped her former record in speed, her name was placed on the bulletin board record-breaker list. This was motivation for all students, regardless of their present ability.

Reviewing the benefits of this tape program, it might be noted that:

1. The tapes provided specific instructions for the arrangement of paper and setting up the machine, timing, proofreading, and scoring of papers.

2. Use of the tapes freed the instructor to observe techniques of the students, their posture, hand positions, and operation of the typewriter.

3. By increasing speed and accuracy on timed writings, they also increased speed and accuracy on their production work.

4. The tapes were equally effective for a group or on an individual basis.

The greatest span of improvement in speed and accuracy was made by one student whose average speed on a five-minute timed writing was 50 wpm with eight or more errors to 70 wpm with one or no errors.

Because there was no control group for comparison purposes, there was no way to determine what the students' typing scores might have been had they not had the use of the tapes, but students and teacher agreed that they were very beneficial. Our purpose here is to train students to turn out excellent work in a reasonable length of time, and these text-correlated tapes definitely helped fulfill that purpose.

Editorial Comment:

The original intent of this project was to evaluate the use of the tapes by comparing the students with themselves. Scores of individual students indicated that they had reached a "plateau level." Usefulness of the tapes was to be determined by calculating the trend upward in both speed and accuracy through use of the tapes. Since no such comparison was made, the project obtained only empirical results. We would recommend that the project be repeated with research controls so that some generalizable results would be available for other business education teachers.

Title: Cooperative Teaching for Machine and Tool Design
Director: Russel Kline, Industrial Drafting and Design Instructor
School: Oklahoma State University Technical Institute
Administrator: Dr. Phil Chandler, Director
State Support: $500.00

Purpose: The purpose of this project was to test a method of providing actual industrial design problem solving situations to students in their final semester in Drafting & Design Technology.

The Report:

Conversation Fragments:

Instructor: Yes, I would like to cover that subject material in this course, but we just don't have the facilities available.

Industry: We'd even allow the students access to our shop areas to observe the machines in action. This would help them to fully understand the processes needed to produce a component.

Instructor: It's hard to evolve realistic design problems that are applicable to the real world of applied engineering.

Industry: We have a backlog of small design projects that have good application for your needs. How many students do you have this semester?

Instructor: I'd cover that if I had some experience in the subject. It's too technical to blunder into and through.

Industry: Our Production Engineer could handle that subject in one tour and 3 class meetings. Could you arrange to have your class meet out here?

Instructor: That interviewer said that they couldn't use our graduates because they didn't have the kind of training needed in practical applications.

Industry: Damn those educators! I wish they would get their heads out of the books for a change and train technicians in practical applications.

Haven't we all heard these arguments before? Maybe we've even used them ourselves.

About a year ago, a somewhat similar dialogue transpired between the Oklahoma State University Technical Institute, Oklahoma City, and the Honeywell Peripheral Operations, Oklahoma City, that set the stage for an exciting exposure to the real world of industry for 25 student engineering technicians enrolled in the Mechanical Drafting Technology.

The Institute's relationship with Honeywell (then General Electric) began about five years ago when one of our evening instructors asked if we had several students that wanted to work part time for them while going to school. Four of the five graduated engineering technicians are still with them.

Here's what we are facing at the Oklahoma City Technical Institute: How do we make the last drafting/design application course realistic to Mechanical Drafting students in their final semester rather than anti-climatic? The purpose of this course, Machine Design, is to utilize and apply the basic engineering principles they have been exposed to during previous semesters. The design applications should relate to the actual conditions as encountered in problem solving situations involving industrial design. Since the Technical Institute does not have shop facilities, the rather sterile classroom/laboratory environment is not conducive to satisfactory accomplishment of this goal.

After contact had been made with the Manager of Honeywell's Oklahoma City office, a pilot project was established to introduce the student to actual industrial operations similar to those they will encounter after graduation. This cooperative venture between an educational institute and industrial corporation was to develop a program which allows the student to learn the necessary theoretical principles in the classroom, and at the same time, master the more complex problems of matching machine and manpower.

In this plan, the students were supervised and evaluated by a consultant from Honeywell, who had the responsibility of developing the individual design projects. These projects were derived by Honeywell from actual design problems or modifications to existing components, as were encountered by the Design Engineer. The students were given access to the shops and all personnel to help solve their problem.

The pilot project was started with five students. The students met at Honeywell, and after some exchange of philosophy and goals to be attained, they were assigned to two project engineers. Each student was given a copy of several typical drawings and a handout sheet referring to their drafting standards to study for further question.

After a comprehensive tour and explanation of the shop layout, each student was assigned design projects. The design projects varied from a tool fixture, to a spindle bracket, to a special purpose welding nozzle. A brief resume of experience levels was collected and projects were assigned on the basis of one's familiarity with shop principles.

The following are some of the more significant problems encountered:

(1) Mobility. Believe it or not, everyone does not have one or two cars. Therefore, until car pools were developed and work schedules were aligned, getting everyone out to the Honeywell facility to get their assignments and help on their projects was no small challenge.

(2) Work Area. At the time of our venture, Honeywell had a full working force, and therefore, didn't have a work area large enough to accommodate all five students at the same time. This was a problem, especially if several students came at the same time to do some of their layout work there. Initially it was explained to the students that they would have to do their layout work and drawings in the labs available at the school. A work area was made available at Honeywell for the use of a student when he needed assistance.

(3) Lost Instructions and Information. Due to the necessity of traveling to one facility to get a project and instructions, and to another to do the design and layout work, a lot of information was lost, causing numerous phone calls and extra visits to Honeywell to get the same data again.

(4) No Text Book. The students felt insecure without an established text. They felt that they didn't have a ready reference when it came time to make some decision concerning their project. How can they monitor and evaluate the instructions given them without an authority at their fingertips to compare words of wisdom, or help them remember later how the problem and its solution were approached?

(5) Unstructured Mode of Instruction. A couple of the students were uncomfortable having the full responsibility of going out to Honeywell and getting their projects and establishing their own work schedule to complete the project by its due date. Self-study and motivation are scary!

The following are some recommendations for future ventures:

(1) More Course Content. A concerted effort should be put forth to locate and make available (or hold lecture sessions) material for areas concerning:

(a) Jig and fixture design and associated terminology
(b) Production engineering and shop processes
(c) How to approach a design problem

Lectures should be a joint effort, depending upon where the expertise lies.

(2) Requirements for the Participating Industry

(a) Student Work Area. Designate an area large enough to accommodate at least two students and then establish a schedule so that there are always students there during the times someone can be available to supervise their projects.

(b) Reference Material. More emphasis should be placed on using the drafting standards manual. Therefore, it should be made more readily available. Some examples of current drawings showing primarily the format for laying out their project solution could be of service.

(c) Project Coordination/Supervision. After the projects have been assigned, have several group-type meetings within the first couple of weeks to discuss similar problems associated with "first attempt" design problems.

(3) More Clearly Defined Goals and Objectives. Utilize the behavioral objectives concept to define what the student is expected to learn or achieve. Develop a program that has a specific number of design projects per student so as to better monitor the student's progress and accomplishment.

At the end of the semester, a critique was filled out by the students. (A copy of each response is enclosed in the report.) The overall effectiveness and acceptance of this cooperative effort can best be summarized by the statements of three of the students who were interviewed by the editor of Honeywell's newspaper, THE PERIPHERAL. One student said it was interesting and informative. "It gave me the chance to acquire some knowledge which will be of some use in the future, and some idea of what to expect in industry and how it's done." Another said, "We get 'in the field' training and can see almost immediately how our work is translated into mechanical parts. It fills the gaps the text books leave out." The third student commented that "It is a big adjustment

to read something out of the book, and then try to apply it to industry. This program makes it easier to adapt what you read to the actual process of doing.

My comments are similar to those of the students. This project has yielded invaluable experience to the student; he has gained knowledge in shop processes and machine capabilities and an awareness of what design work entails. Other benefits include allowing students to perform under actual manufacturing conditions and giving them experience they would never be exposed to in the classroom.

How did Honeywell benefit? First, work on some of their simple basic tool designs was performed on a volunteer basis. Second, and probably most important, this program demonstrated to the educational community, Oklahoma State University Technical Institute, that the industrial community, Honeywell, is concerned and interested in upgrading the abilities of the graduating engineering technician. This is an example of the kind of coordination that is desirable, almost mandatory, between industry and education to help make our technology programs valid. This type of venture verifies to the industrial community that we are trying to prepare students to be solid contributors in their industrial careers. We need to involve or encourage other industries to follow Honeywell's example.

This experiment created a need for a basic understanding on the part of the students of machine processes, and along these lines, another drafting course was modified to include an "in plant" series of lectures and practical problems.

The first part of the semester involved the usual assignment of drawings and chapters from a text involving machine operations and capabilities. The remainder of the semester was spent at Honeywell with visits to the various shop areas to get a feel for the problems encountered in each area and then preparing the necessary documentation detailing the process flow to get a component design through the manufacturing processes. As a group effort, three different components were documented and put into the system. By design, as the semester was closing, the components cleared the system and were scheduled to be manufactured, thereby giving the group an opportunity to see the complete cycle of a component being manufactured: from the paper work; through the initial stock issuance; through the various operations, and finally, preparation for shipment.

Our current efforts include a second phase to the Machine Drafting course previously discussed. Most of the students in our second cooperative effort participated in this course; therefore, the subject matter could be more complex. This time we introduced to the student the concepts of Numerical Control. A component was jointly planned and programmed, and the students had the opportunity to see the component produced by the N. C. machine tool.

Realism without adequate facilities? It can be done once the educational community takes the initiative to propose a cooperative education venture. However, it is all dependent on the industrial community being willing to provide facilities and, if necessary, the expertise. The participating industry must be willing to absorb the expended man-hours, without a profit gain or immediate benefit in the interest of technical development.

It was only with the enthusiastic support of Honeywell Peripheral Operations, Oklahoma City, that these ventures were successful and provided meaningful real-life experiences to the students involved. The Oklahoma City Technical Institute could not have afforded the expense of leasing shop facilities or hiring those specialists that tutored and guided our students through these two courses. These students have had a "real" experience while being involved in the "real" world of industrial applications.

In summary, the comments that were presented initially in this report can be responded to in a positive mode, IF, the educational and industrial community approach their responsibilities with an open mind and a common goal--PEOPLE DEVELOPMENT.

Editorial Comment:

The report indicates, on the basis of empirical evidence, the method for providing real work experiences to students was satisfactory. It was not within the scope of the project to test the usefulness of the work experiences to the student as he moves to the job--nor to test the generalizability of this method to other types of technical programs. The project should be replicated with other industries or with Honeywell in other cities. A follow-up would be useful to disclose advantages the students might gain by this experience. Although the questions raised here need to be answered, this project should be encouragement to others to pursue cooperative arrangements with industry.

Title: Curriculum Development for Project Distributive Education Programs in the Area Schools
Director: Eleanor M. Hrabe, Distributive Education Instructor
School: Central Oklahoma Area Vocational-Technical School
Administrator: John H. Hopper, Superintendent
State Support: $825.00

Purpose: The purpose of this project was: (1) to develop curriculum materials for Distributive Education programs operating on three-hour blocks in area schools, and (2) to implement the planned use of learning packets and individually prescribed instruction to train students for entry level occupations, further their career development, or provide specialized training for distribution occupations.

Rationale: Distributive Education is a vocational training program developed on a triangle. The triangle represents "on-the-job training" with "related classroom instruction" and a "youth organization" interwoven to train students for careers in distribution.

In the cooperative program of Distributive Education, the on-the-job training has been an agreement with the business sponsor, the teacher-coordinator, and the student through the use of training memorandums.

In laboratory Distributive Education programs located in area schools, on-the-job training must be provided for within the classroom through simulated activities and experiences because the students are not employed. The student, therefore, must be trained in the basic skills necessary for job performance. He must also have an opportunity to further develop these skills in achieving his career objective; and if the student elects, he should have an opportunity to specialize further in an area of distribution. Simulating activities and providing experiences to supplement cooperative curricula does not provide the logical sequence of experiences that a student would be encountering on-the-job in a training program.

This project provides curricula guides designed to include this vital training with classroom instruction using simulated activities and experiences, learning packets, and individually prescribed instruction. If area school programs are to train students for distributive occupations, the total triangle must be the basis for such training.

The Report:

Introduction and Statement of Problem

Located in a rural Oklahoma setting in the center of four economically depressed counties, Central Oklahoma Area Vocational-Technical School determined a need for a distributive education program while the school was in its planning stages.

The area district seemed most appropriate to implement the first project or laboratory Distributive Education program in Oklahoma. This type of program revolves around a three-hour block with simulated learning activities over a two-year period. Students are encouraged to seek employment during the summer months and are not placed on jobs until the Spring of the second year of training.

Providing in-depth training for these students requires curriculum designed to include simulation of activities of the world of retail sales. (A curriculum was not available at this time with these activities.)

Procedures

A review of research revealed that project distributive education is a relatively new concept. Michigan State University and Arizona State University sponsored a National Seminar in 1967 for teacher educators to identify, evaluate and respond to the implications of the Vocational Act of 1963 regarding the project plan of instruction. Papers presented were reported in a publication of the Office of Education, entitled Readings in Distributive Education. This collection of papers held no concrete answers but offered the current thinking of leaders in the field of marketing and distribution. A bulletin published by the State Department of Education in Florida offered additional background for developing and implementing project curriculum. The project director attended the first annual Gregg Conference for DE at Michigan State University in June. The major emphasis was on the project method of instruction.

The ideas gleaned from publications, The Gregg Conference, plus one year of teaching in a project program, were presented to an advisory committee made up of area businessmen. This committee indicated needs of entry-level employees, needs for upgrading employees, and needs for mid-management training. The curriculum guide developed by the group is designed for a three-hour non-cooperative program equipped with a student store.

The project director spent two days in the Curriculum Center to develop skill in the writing of behavioral objectives and in consultation with curriculum specialists. In order to serve a greater number of distributive education programs, it was decided to develop the curriculum with the outline format rather than develop learning packets for three levels of skill training.

Results

Curriculum outlines were developed for Project Distributive Education II and III. Curriculum was written for four major areas and included fifteen units of instruction. This material contains behavioral objectives, student and teacher information sheets, transparency masters, bulletin board ideas, activity guides, tests and keys. A copy of this material is in the Curriculum Center at the State Department. A rough copy was given to each of the three new coordinators in area schools. The project director and one other coordinator utilized the material. Its implementation was found to be natural and aided in establishing the concept of a training program within a store rather than a classroom.

Conclusions

Laboratory programs are quite different from the cooperative distributive education program. The curriculum that was developed served a need for in-depth training of basic skills. It is felt that the balance of the guide should be developed into useful curriculum for these programs.

However, if monies are to be spent in development of materials, the project director would recommend that individual learning packets be developed to enable training for entry level occupations, for further upgrading or, for specialized training of students in the same classroom. The area school is unique and has the capability of serving vocational needs of many people. These people are at different levels and should not all be required to slot into a standard curriculum. Research is needed to develop methods of testing skill levels in distributive occupations and to provide materials for individually prescribed instruction.

CURRICULUM OUTLINE
1971-72

Distributive Education II

I. Orientation
   - A. Introduction to Distributive Education
   - B. Introduction to Distributive Education Clubs of America
   - C. Leadership
   - D. Parliamentary Procedure

II. Physical Controls
   - A. Scope of Controls
   - B. Receiving Function
   - C. Marking Function
   - D. Stockkeeping and Inventory Procedures

III. Opportunities in Distribution
   - A. Kinds of Distributive Businesses
   - B. Careers in Distribution

IV. Self Improvement for the World of Work
   - A. Self-Analysis
   - B. Development of Personal Characteristics
   - C. Development of Basic Skills - Communication
   - D. Development of Basic Skills - Arithmetic
   - E. Human Relations - Putting It All Together

V. The Sales Process
   - A. Cash Register Operation
   - B. Product Information
   - C. Kinds of Customers
   - D. Selling
   - E. Wrapping Techniques

VI. Display
   - A. Principles of Design and Color
   - B. Creating a Display
   - C. Evaluating Displays

VII. Job Interview
   - A. Opportunities for Employment
   - B. How to Apply for a Job
   - C. Selling Yourself in a Personal Interview
   - D. Keeping the Job and Moving Ahead

VIII. Advertising and Sales Promotion
   - A. Purpose of Advertising
   - B. Advertising Media
   - C. Mechanics of Advertising
     1. headlines and illustrations
     2. color
     3. layout
     4. copy
   - D. Sales Promotion Campaign

CURRICULUM OUTLINE
1971-72

Distributive Education III

I. Review of Orientation
   - A. Operation of DECA Shop
   - B. Classroom Requirements
   - C. DECA

II. Sales Promotion
   - A. Planning a Promotion
   - B. Advertising
   - C. Display
   - D. Implementing a Promotion
   - E. Evaluating a Promotion

III. Creative Salesmanship
   - A. Types of Selling
   - B. Creative Retail Salesmanship
   - C. Special Ways to Sell
   - D. The Art of Self-Management
   - E. Analyzing and Improving Sales Performance

IV. Personnel Management
   - A. Importance of Management
   - B. Training Employees
   - C. Personnel Policies and Procedures
   - D. Employer-Employee Relations

V. Credit
   - A. Importance of Credit in a Free Enterprise Economy
   - B. Types of Credit
   - C. Consumer's Use of Credit
   - D. Distributor's Use of Credit
   - E. Cost of Credit
   - F. Credit Management Responsibilities and Policies

VI. Job Interview Review

VII. Small Business Organization
   - A. Organization
   - B. Location
   - C. Financing
   - D. Management
   - E. Merchandising
   - F. Insurance
   - G. Survival Problems
   - H. Government and Business

VIII. Data Processing in Marketing
   - A. Data Handling and Processing Cycle
   - B. Operations of Data Processing
   - C. Computer Data Processing

SCOPE OF CONTROLS
UNIT I

TERMINAL OBJECTIVES

After completion of this unit the student should be able to identify control methods and explain how they reduce store losses and increase profits.

SPECIFIC OBJECTIVES

After completion of this unit of instruction, the student should be able to:

1. Match terms associated with methods of control
2. List the major reasons why profits on a percentage basis are not high
3. Discuss how controls affect employers
4. Discuss how controls can be achieved by employers
5. Identify management expectations of employees
6. List the methods of controls
7. Name two purposes of controls
8. List two types of losses

UNACCOUNTABLE LOSSES

1. Can't be explained!!
2. Result usually from carelessness!!
3. Not following procedures.

SHRINKAGE...

REFERS TO UNACCOUNTABLE LOSSES.

Editorial Comment:

The curriculum outlines included in this brief report of the project illustrate the magnitude of the project. The curriculum packages were prepared in the format used by the Curriculum and Instructional Materials Center of the Oklahoma State Department of Vocational and Technical Education. They were used successfully in the two area school project programs offered in Oklahoma during the 1971-1972 school year and are now available from the Curriculum and Instructional Materials Center.

Title: Development of Curriculum and Evaluation of Materials for Boys Family Living Class
Director: Velta Reed, Vocational Home Economics Teacher
School: Washington High School
Administrator: Dr. Virgil R. Wells, Superintendent
State Support: $300.00

Purpose: To develop a Home Economics class which will enrich the educational process of boys in a rural high school by teaching subject matter related to the home and family.

The Report: The following procedures were anticipated in developing a course in family living for boys:

1. A search would be made for existing curricula by contacting teachers in other schools and searching the literature for additional contacts to obtain curriculum materials.

2. The materials that could be obtained would be studied and evaluated in terms of their usefulness in a rural Oklahoma school.

3. Recent graduates of Washington High School would be contacted to act as an advisory committee to set needs priorities for curriculum units.

4. The curriculum plan would be developed and appropriate materials purchased for the class.

The boys who enrolled in the class were also involved in planning the course work. Almost an entire semester was spent in the study of foods and food management. This part of the course was, naturally, the most enjoyable to the boys. Other units studied were child development--with emphasis on pre-natal development, money management, housing, and clothing.

It was concluded from empirical evidence that a course of this type is most beneficial to boys. This type course is not recommended for boys below the eleventh grade level. The older the boy, the more relevant the subject matter becomes. The class had many tenth grade boys who were not mature enough to relate to the problems of family life.

Editorial Comment:

The report by the director of this project was not comprehensive enough to make any judgments regarding the success of the project. An evaluation was identified in the proposal but was not reported. It appears that, while the project may not have brought forth generalizable results, it was worthwhile to the project director.

Title: I. Developing a Plan for Teaching Family Finance and Consumer Problems to Adults
II. Acquainting the Student Body with the Home Economics Program Through Window Displays

Director: Mrs. Marie Fleming, Vocational Home Economics Teacher
School: C. E. Donart High School, Stillwater
Administrator: Robert F. Holland, Principal
State Support: $425.00

Purpose: There were two problems which were attacked in this project. First, the lack of a program plan, equipment, illustrative material, and teaching aids for use in family finance education in teaching adults. Second, the inadequate means of acquainting the student body with the Home Economics program. The purpose of this project was to develop and carry out a plan for teaching family finance to adults--an attack on the first problem; and to build and evaluate the usefulness of a window display as a means of informing students about the home economics program--an attack on the second problem.

The Report:

PROCEDURE FOLLOWED IN CARRYING OUT THE PROJECT

The Adult Classes

August 2, 3, 4, 5, 6-13, 16, 1971, a workshop was held for women who were interested in saving money by improving and learning simple tailoring techniques. Due to time, space, and help, the class was limited to 14 students. The classes averaged three hours in length with an average of 12 in attendance. Twenty-one hours of teaching was done not counting the preparation time. The title used for the seven classes taught was The Consumer and Clothing Construction Techniques.

During October, we were very fortunate to obtain the services of Mrs. Leona Allman, Consumer Specialist with the Food and Drug Administration. Mrs. Allman is based with the Dallas, Texas, office and is especially qualified in the area of consumer problems.

Mrs. Allman was in Stillwater for two days and taught two adult classes. Letters of invitation were sent to 15 high school home economics teachers, parents of the students in the Stillwater City School, food service employees, and O.S.U. faculty members. The Stillwater News-Press was most cooperative with publicity concerning the classes which extended an invitation to other interested people in the community.

The first adult class, Safe Food - Safe Living, Fact or Fiction, was presented to approximately 75 adults. Mrs. Allman presented the class in the new in-service room of the Board of Education building. The program was excellent as she used slides and actual demonstration devices which reinforced her program. The second class was presented to 90 members of the Stillwater Rotary Club. Mrs. Allman spoke concerning The Food and Drug Administration and Your Tax Dollar. We gave out an evaluation sheet to the people attending and the results will be given in our final evaluation of the project.

Mrs. Allman also made two twenty-minute colored video tapes. The tapes were made through the assistance of the Educational Systems Center which involves a floating in-service program for about 36 schools in Oklahoma. Tape I was given the title The Consumer and Food Protection, and Tape II was called Safe Toys, Safe Household Products, and Food Protection.

In November, I taught one class to a group of adults sponsored by the Perry, Oklahoma, High School Home Economics Department and 22 adults attended the meeting. Through colored slides and actual demonstration materials, we presented a lesson on The Consumer and Decorative Room Accessories. We also made a 20-minute video tape called "Decorative Room Accessories $10.00 and Under."

Mrs. Billie Murphy, a professor from the O.S.U. C.T.M. department, who is a specialist in textiles, made a 20-minute video tape concerning Textile Legislation.

Mr. Richard Wheatley, chairman of a local bank, made a 22-minute tape, "Consumer Credit Protection and Regulations."

An information sheet which explains the content of each tape is included in this report.

The Display Window

Since I was not experienced in the field of window display, it was necessary to do some research in this area. I consulted with various people who had planned windows and worked with our high school drafting teacher to get a plan made for a window that fit into the space available. The east entrance of the Home Economics department was an open area filled with glass panels and the halls are very wide, which made it possible to plan a bay window type display. Students in the drafting class drew up a scaled plan which closed in the glassed area as a solid wall. An entrance at the rear of the window provides a background setting as well as an entrance for placing the equipment needed to set up the displays. With some alterations, the school carpenter was able to use a good deal of the glass panes and paneling available in the school. Our goal was to not detract from the general decorating idea of the department interior and produce an attractive addition to the hall. Pictures are included with this report that display a cedar shingled bay window which extends into the wide corridor of the west wing of the building. The school administration was most cooperative in building the window and was happy to have the addition to the school. Fortunately, we had carpet material which matched the living room area carpet and only had to pay to have it installed. The new paneling and carpet made it possible to carry out the same color scheme used in the inside area of the department.

We were able to obtain information from the high school DE Coordinator and members of the O.S.U. Clothing, Textiles, and Merchandising department for ideas that would fit our needs in developing evaluating devices and work sheets. Copies of the devices which are quite usable for a teacher are included with our report.

Since our main goal was to better acquaint the school with the various areas of Home Economics and also concentrate on teaching consumer education, the display ideas were planned with this in mind. The students helped to choose the ideas and develop them. We also have a set of colored slides which picture the displays, and the local newspaper used pictures with various stories about the window.

RESULTS OR ACCOMPLISHMENTS

Adult Classes and Video Tapes

Evaluation sheets were given to the people who attended the F.D.A. presentations.

One hundred sixty-five adults heard Mrs. Allman present the F.D.A. story. I am giving statements made by people who attended the classes. The public was so complimentary concerning the classes that we feel they were a real service to the community.

The following statements were given by teachers, students, merchants, housewives, doctors, lawyers, O.S.U. administrators, scientists, etc.

F.D.A. Evaluation--Mrs. Allman's classes. Statements concerning the following:

1. Basic information given:

   I cannot believe such a small amount of money is funded for consumer protection.

   We are grateful that there is a service such as F.D.A. to check on the misconceptions as to drugs, charms, etc.

   I was pleased to learn more about the duties and responsibilities of F.D.A.

   I am concerned with the problems and cost of policing food and drug protection.

   The F.D.A is working hard to keep dangerous and deadly products off the market.

   I was not aware that 60,000 Food Co. were inspected by F.D.A.

   We did not realize there were so many dangerous toys manufactured.

   F.D.A. is a great public service.

2. How I will be able to use the F.D.A. information:

   The information will help me in teaching all of my foods classes.

   The presentation will help me to become a better consumer.

   The F.D.A. packet will help me as the Fact Sheets are most valuable up-to-date information.

   We can use the information when working with students who are doing research in Consumer Problems.

   I plan to watch labels and read all of the information.

   Better and more careful drug usage is one of my goals.

   I will inspect toys before I buy them.

   As a dietition, I will pass the information on to the people who work for me.

3. Information you would like to have learned more about:

I would like to have learned more about cosmetics, cleansing creams, lipsticks, eye creams, etc. However, I realize the program had a time limitation so I will do some research on my own.

More about unit-pricing.

I would like to know how much it would cost to have more adequate F.D.A. enforcement.

More about the value of vitamins on the market.

What effect the F.D.A. research has on the price of new products being produced.

How much harm must occur before F.D.A. condemns a food? How are such standards reached?

More information on nasal sprays.

4. We do not have an accurate count on the tapes, but according to Dr. Larry Thomas, who is in charge of research for the Educational Systems Center, he only gets a brief evaluation of the tapes, and the number of people who view them are not recorded.

Dr. Thomas suggested that I estimate that approximately 40 people would see each tape plus 100 people outside the program who rent or borrow them.

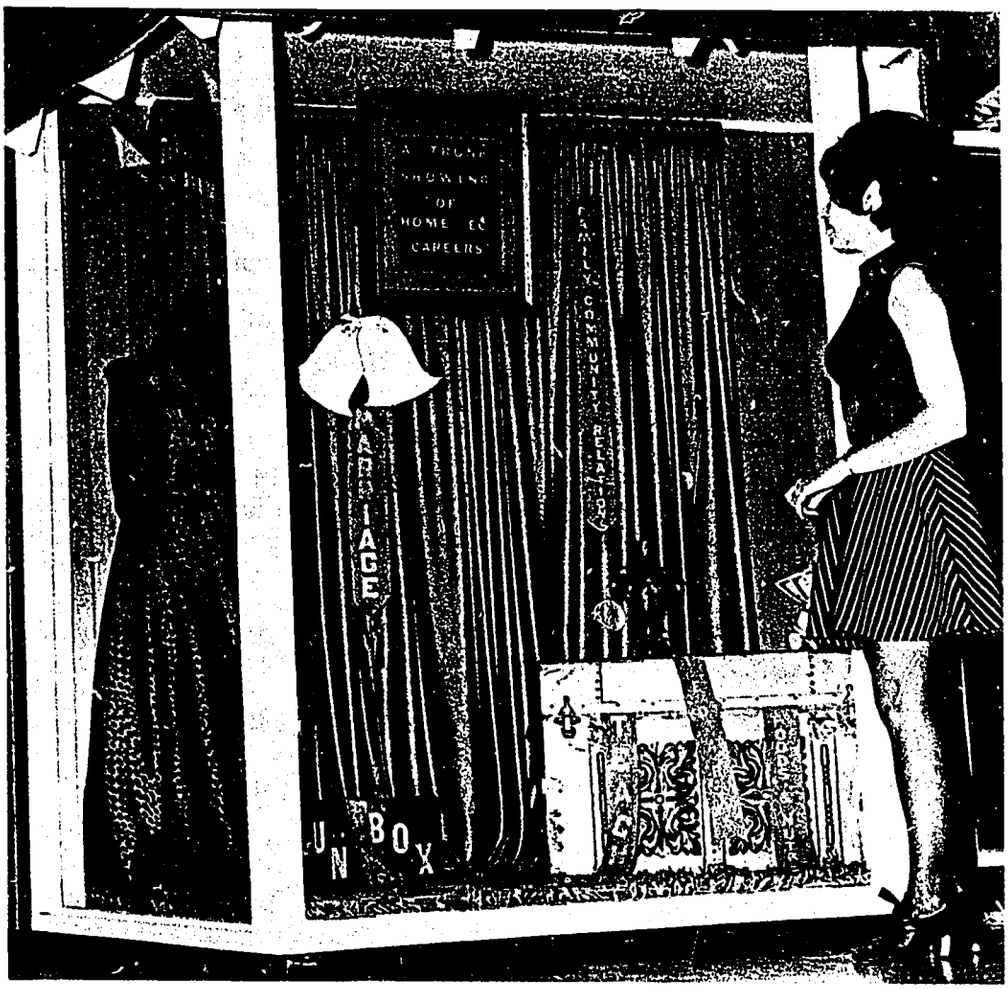
40 X 36 = 1440 plus 100 = 1540

With this estimate, the five tapes could reach 7700 people.

Display Window

The Display Window was a real challenge for the teacher as well as the students. In order to get started, our projects seemed to be based on the trial and error method. We wanted to choose attractive backgrounds and develop good lighting in order that the project would serve as a teaching device as well as a means of acquainting the student body with the activities of the Home Economics program.

The Home Economics IV class decided the idea for the first display should be on Home Economics Careers. They chose the title A Trunk Showing of Home Economics Careers. A trunk that had been antiqued and renewed was used as the center of interest. The class divided into groups and worked out ideas to illustrate the various opportunities offered in Home Economics (a picture is included with this report). It seemed that with only 55-minute class periods and so many people making decisions it was a real struggle. The lettering, color schemes, etc., are much easier for one person to plan than a whole class. After the display was finished, the girls checked their first window display rating sheet. A sample of the sheet has been included.



Mini Grant Provides Window Display . . .

Mrs. Alan Bodine, president of the Young Homemakers Organization, sponsored by the high school home economics department, looks at one of the displays in the recently constructed display window outside the home economics department. The window was built with funds from a "mini grant" recently received by the department. The grant is being administered by Mrs. James Fleming and is used to carry out a family finance education program.

Through Vocational Home Economics . . .

Mini Grant Providing Funds For Family Finance Program For Adults

A "mini grant" is making family finance education a reality in the vocational home economics department at C. E. Donart High School.

The grant is benefiting both students and Stillwater residents interested in learning more about initiating effective finance programs for their own families.

Mrs. James Fleming, vocational home economics instructor at C. E. Donart, is carrying out the program for the mini grant which she notes, has a two fold purpose.

One of the aims of the grant is initiating a program plan for use in teaching family finance education to adults. The grant is also providing equipment and supplies which were unavailable without the grant.

Another purpose of the grant is to acquaint all high school students with the home economics program, Mrs. Fleming explained.

The first goal is being carried out by purchasing equipment and supplies and bringing in speakers for public programs who are specialists in their field.

One of the specialists who has visited Stillwater in connection with the program is Mrs. Leona Allman, consumer affairs specialist with the Public Health Service with the Dallas office of the Food and Drug Administration.

She presented a public program entitled "Safe Food, Fact or Fiction" and also prepared two tapes to be used in the school program entitled "Safe Food and Safe Living" and "What the Food and Drug Administration Gives For Your Tax Dollar."

The grant also provides for the production of four other tapes related to the subject of family finance.

She was also a featured speaker at a Rotary Club meeting this fall on a similar topic.

Although the family finance program is designed primarily for use in the adult education program sponsored by the high school home economics department, it has carry over benefits for the students enrolled in the home ec classes, Mrs. Fleming pointed out.

The display window is constructed as part of the existing home economics suite at the high school and is used to publicize the activities and programs of the department.

The wood shingled display window serves effectively as a teaching aid for merchandising various units of study, with displays being changed to coordinate with the home economics subjects currently being studied.

While not only being an attractive addition to one of the main hallways in the school, it also serves its purpose of keeping students, other than those enrolled in home economics, abreast of what's happening in this field.

A comprehensive score of 100% was based on the following points: 1) Power to attract attention (20); 2) Arrangement (20); 3) Cleanliness (10); 4) Timeliness (10); 5) Selling Power (20); 6) Lighting (5); and 7) Technical Excellence (15).

The rating scores averaged 92 points. For the most part, the students felt we made a good beginning with an artistic setting, excellent coloring, and a real eye catcher. Most of the students felt we had to spend more time on one display than was needed. They lowered the score of the finished product as they felt the display included so many ideas that the window was overcrowded. I don't feel that they had ever realized how many areas Home Economics includes. It is difficult to convince people that Home Economics includes more than foods and clothing in the curriculum.

Some of the other display subjects were FHA Fans of Education, Five Ways to a Happy Holiday (emphasis was placed on Time, Money, Know How, Skill, and Energy), FHA in the News, Room Accent Pieces $10.00 and Under, Egg Carton Easter Lilies, From Bed Posts to Candle Holders, Good Study Habits Open Doors to Success, Safe Food, Clean Up and Fix Up, Make Your Own Fashion, and Student Home Experiences.

For the students not involved with the displays, we administered an evaluation sheet to girls, boys, teachers, and others that were enrolled in classes located near the window display. About 50 people were used for the evaluation. We had very few negative responses, but we did have six people who stated they had never noticed the window before.

Approximately 90% of the students felt the display subjects were timely and they better understood the activities carried on in Home Economics. We were gratified by the fact that they felt the windows were changed frequently enough and that the display window was a beautiful addition to our school.

Most of the students felt that the money saving ideas applied to their everyday life. Very few had used the ideas to date, but most of them stated that when time permitted they would use many of the ideas for projects. The boys were especially interested in the displays on furniture refinishing, repairing old trunks, and making candle holders from bed posts. We realize that many of the displays were geared to the interest of girls and they would naturally notice the ideas that would be usable for them.

CONCLUSIONS AND RECOMMENDATIONS

We feel that this project has great potential for improving teaching techniques. There are many forms such as check sheets and evaluating devices that teachers might use to fit their needs. Through the Video Tapes, 7,700 people could be involved and 271 adults participated in the adult education offerings. The Video Tapes were not masterpieces as we are all new at this form of media. However, the content of the tapes is timely and excellent resource material. Our display window has served as a real teaching device, but we can now use a different form of organization responsibility for the displays. We have a nice collection of colored slides which tell the story of our activities. The slides are wonderful to use for Home Experience ideas. Most teachers feel a need for improving in this area of teaching.

We have had wonderful newspaper coverage and Stillwater is fortunate to have a publication that is so community oriented and interested in school activities. The Tulsa-World will have a story that the Home Economics IV students helped with. Since June is Dairy month, the magazine section they publish the second Sunday in June will carry a story

we wrote called Table Top Cookery with Dairy Products (title subject to change). The Woman's Page Editor has asked for our material so we feel sure that the local paper will also carry a story.

Time has been our greatest problem as we have a very crowded schedule. I teach 110 students daily and have many other school responsibilities. The research has been most rewarding, but we need to re-evaluate our materials and improve on various techniques of teaching. We feel that this year has only been the beginning of what can be done with the adult education program, Video Tapes and the display window.

EDUCATIONAL SUPPORT SYSTEMS CENTER
314 South Lewis Street
Stillwater, Oklahoma 74074

FLOATING IN-SERVICE PROGRAM

In-service Video Tape Number 2

I. Title: The Consumer and Food Protection, Part I

II. Tape Length: 18 minutes

III. Color

IV. Program Content: Mrs. Leona Allman, a Consumer Specialist of the F.D.A., and Mrs. Marie Fleming, Home Economics Teacher, discuss how the Food and Drug Administration inspects and aids in the control of safe foods, drugs, therapeutic devices, truthful labeling, safe cosmetics, etc.

V. Talent: Mrs. Allman is Consumer Specialist with the Food and Drug Administration, Dallas, Texas, office, U. S. Public Health Department. Mrs. Allman is a Home Economist and is much in demand as a consultant for workshops and conferences.

VI. Suggested Uses: Home economics teachers and students or others who are interested in consumer safety and protection.

NOTE: A limited supply of F.D.A. materials, such as those enclosed, are available through ESSC. Contact Dr. Larry A. Thomas, ESSC.

Editorial Comment:

This is the type project that exemplifies the purpose of the mini-grants program--to encourage teachers who desire to improve their programs. Certainly, the $425.00 dollar grant was only a "widow's mite" in the budget of the Stillwater Public Schools. The local effort in developing the video tapes and in labor and materials for the window display was many times that of the mini-grant. Support of the project by the State Department seems to have drawn attention of the school administration to one teacher's sincere needs for support; and thus served as a catalyst to both teacher and administrator in the successful completion of the project.

Title: Development of a Proposal to Implement a Course in Distributive Education in Grades 8 and 9
Director: Wayne Richardson, Assistant Superintendent
School: Bartlesville Public Schools
State Support: $720.00

Purpose: The purpose of this study was to examine the feasibility of initiating a Distributive Education exploratory program at the Junior High level; and, if feasible, to develop program plans and a proposal to implement the program in Central Junior High School.

The Report:

It was proposed that at least one school person from the Bartlesville Public Schools personally visit the Richmond, Virginia, Public Schools to study their junior high school program of distributive education and career exploration. Further, personnel would be employed during the summer, 1971, to develop curriculum and curricular materials to implement such a course in the Central Junior High School, Bartlesville, Oklahoma. The same personnel were to also develop a proposal to the Oklahoma State Department of Vocational and Technical Education for a three-year grant to establish two classes at Central Junior High School.

Mr. Brad Ward, Principal of Central Junior High School, visited in the Richmond, Virginia, Public Schools and studied their distributive education program at the junior high school level. He was impressed with their program, but since it was geared mainly for dropouts or potential dropouts, it did not meet our need for such a program for all students. It was decided that the Bartlesville classes would be a combination of pre-distributive education and career exploration to make young people aware of the world of work, how the regular curriculum prepares students for that working world, and basic knowledge of the various careers, their requirements and potentials.

Two young enthusiastic vocational teachers were hired to teach the two classes, and since their contracts began August 1, mini-grant monies were not required for curriculum development. A request was made and granted that remaining funds in the mini-grant be expended for furniture and materials to make the classrooms more attractive and more effective.

Finally, a proposal was written and approved for $21,925 for full-funding of the two classes for one year. Additional funds have been tentatively assured for the second and third year at the 75% and 50% level of reimbursement.

The two classes were well received by parents, students, and teachers this year. A total of 364 students were enrolled in the class during the 1971-72 school year. Of this total, 310 students were eighth graders and 54 were ninth graders. Included in the eighth grade enrollment were 23 special education students.

Major objectives of the program are to provide experiences for junior high school students which will help them relate vocational training to their total educational curriculum, thus encouraging them to stay in school until graduation. The program also provides students with information and training to increase their potential for gainful employment. Another major objective is to assist students to enter the cooperative education programs on the senior high school level. There is also much emphasis on business ethics and better respect for the whole world of work.

As far as problems encountered with the mini-grant and subsequent courses that were developed, we were most fortunate in obtaining two excellent teachers who took a personal interest in the project and eliminated many problems before they arose. Funding is always a big problem in public education. Many projects are funded at the 100% level the first year but then at decreasing levels in the second and third year. This procedure eliminates many good programs since local educational agencies do not have sufficient funds to carry on programs after they are started unless there is additional state aid or other aid for them. This practice is good for experimentation but discourages the actual implementation of new programs into the curriculum. Materials and specialized equipment are also difficult to obtain, but are essential to assure maximum success of new programs. We believe that these problems have been faced and solved, but they may still jeopardize the future of the two classes which were planned and implemented with the help of this mini-grant.

Editorial Comment:

This project was completed satisfactorily as stated in the proposal. However, the last paragraph of the report points out the major weakness. A good feasibility study would have examined the long-range support factors; or, in the case of an experimental program, the study would have developed the criteria by which the program would be measured for continuation decisions. It is perhaps to the discredit of the research committee that the project was approved before this weakness was corrected. Hopefully, evaluation of the three-year program will be detailed enough that some generalizable information will be available to administrators in other schools who may be considering initiation of the program.

Title: Expansion of Public Relations of the C.O.E. Program
Director: Betty C. Fry, Business Education Teacher-Coordinator
School: Will Rogers High School, Tulsa
Administrator: Roy James Lewis, Principal
State Support: $120.00

Purpose: The purpose of the project was to test a method of presenting the full scope of operations of the Cooperative Office Education programs at Will Rogers High School to the public. Because the proposal in part duplicated a prior mini-grant to the Will Rogers High School, the grant was made only in support of the development of a slide and script presentation as a part of the public relations program.

The Report:

Slides were taken of students in school, on the job, and in various activities relating to Cooperative Office Education. These slides have been screened and a script prepared presenting the Cooperative Office Education story in dialogue with slides. The story begins with selection of COE students in their junior year and ends with graduation at the end of their senior year. This presentation was prepared to be given either for prospective employers or prospective students.

A brochure was printed to distribute to prospective and/or present employers outlining the Cooperative Office Education program and responsibilities and duties of the employers and students.

The slide presentation will be available for showing to civic groups, school groups, student groups, and prospective employers. The dialogue is written with the idea of relating the story of the programs at Will Rogers High School but can be easily modified to tell the story of any Cooperative Office Education program by omitting personal references.

The brochure is designed to give prospective employers information concerning Cooperative Office Education and to give supervisors assistance in working with student help.

Previews of the slide presentation have received favorable response. At the time of this report, the printing of the brochures had just been completed and they have not yet been distributed. Some of the materials have been used previously at Will Rogers High School and suggested additions, revisions, and deletions from employers and supervisors have been made to produce the current materials.

Copies of the script for the slide presentation and the brochure accompany this report.

Editorial Comment:

The evaluation of this project was to be a comparison of the 1971-72 school year with previous years in four categories: (1) number of visitors to the classroom, (2) number of available job training stations, (3) number of students applying for the program, and (4) number of appearances before civic and business groups. Timing of the project made it impossible to complete an evaluation before the report was due. It is likely that the reduction in funding also limited use of the slides after they were prepared. Mrs. Fry, in the submittal letter accompanying the report, stated, "I feel that we shall be able to use them to good advantage in our COE programs," (speaking of the slides and brochures). It is our intention to continue this investigation to study feasibility of distribution of the slides to other cooperative office programs in the state.

Title: Feasibility and Design Calculations of Training Aids for Environmental Health Occupations
Director: Ralph P. Schneider, Environmental Health and Civil Technology Instructor
School: Oklahoma State University Technical Institute
Administrator: Dr. Phil Chandler, Director
State Support: $500.00

Purpose: The purpose of this project was to develop working scale models of air and water pollution control equipment which could be readily constructed by the instructor for demonstration purposes in the laboratory.

The Report:

Information communicated verbally without involvement invokes a short retention span. It, therefore, follows that the use of models and equipment in field or laboratory problems is more effective than discussions and interviews with the instructor.

In order to obtain such models for this project, manufacturers were contacted with the hope that they would donate equipment or design criteria to the university. One hundred attempts were made, but to no avail.

Manufacturers were reluctant to release specific design criteria for a number of reasons. Air pollution abatement equipment uses many innovations which cannot be patented. Also, it would involve considerable expense to prepare the drawings necessary to convey the idea of a small scale model.

Therefore, I made the feasibility calculations, designed and constructed four types of air pollution abatement equipment. The simplicity of design is such that the models can be easily constructed by anyone.

The types of equipment considered in this project are as follows:

1. Spray Scrubber
2. Baghouse Filter
3. Cyclones
4. Packed Towers

In addition, experiments in water treatment and noise pollution have been added because of general student ignorance of these areas:

1. One class model of water treatment is written as an experiment.
2. One class model of noise experiment has been prepared because of the general unknown qualities of sound.

SPRAY TOWER

Objectives are:

1. To observe in the laboratory the physical actions of a spray tower.

2. To observe the differences of a spray tower from a packed tower.

The spray tower is a piece of equipment used for removing solid particulate matter and gases from an air or gas stream.

Collection of the contaminant depends upon the water spray being directed across the path of a particulate, enabling it to impinge upon the spray droplet. The efficiency is proportional to the number of droplets in the path of the particulates.

The efficiency of the model spray tower herein is based upon the droplets rebounding off the sides of the tower which will increase the number of droplets in the air space of the tower.

The use of wetting agents in the spray water may improve collection efficiency.

The process is completed when the droplets get larger than 100 microns or when the spray reaches the liquid level at the bottom of the tower.

Fabrication Guidelines:

1. The materials to be used in the fabrication of the laboratory model of the spray tower need to be transparent. Working with glass will be impossible, so the material should be some type of plexiglass tubing.

2. Small water pumps can be purchased from W. Grainger's at 1410 Southwest Third Street, Oklahoma City, Oklahoma. I suggest a Little Giant Compact Submersible pump, Model Number 2E-N, $25.00, 300 gallons per hour at 1-foot rise.

3. A good air pump to circulate the gas supply.

4. Small nozzles to be set in the plexiglass tubing and sealed with plexiglass cement.

5. Spray nozzles to be connected to the manifold by rubber tubing.

Editorial Comment:

One model was included in this report to illustrate how the investigator treated the models. All are included in his report. The evaluation was to have included availability and cost of materials, student reaction, and time required for classroom demonstration. These, particularly data on student reaction, were not emphasized in the report. However, it is questionable whether one needs to research the usefulness of laboratory demonstrations in the learning process. The success of this project depends on the individual teacher-consumer of the project. Does he or she need these kinds of demonstration models to teach concepts in air and water pollution control? Are they easily obtainable? They are useful to the investigator and would very well be useful to many other instructors.

Title: Forestry Training for N.Y.C. and Work Study Students
Director: Charles Hathaway, Vocational Agriculture Teacher
School: Tahlequah High School
Administrator: John Pearce, Superintendent
State Support: $1,000.00

Purpose: The purpose of this project was to improve use of Work Study students by developing a formal forest skills training summer program which would permit the students to learn while earning.

The Report:

Introduction

Our FFA Forestry Skills program was first conceived several years ago when the FFA took land that no one would even pay taxes for--some 200 acres in one block 8.5 miles from Tahlequah. Wood, post, and tie cutters had cut everything off that was merchantable. The FFA started replanting, managing, and working the area after it was given to them for $1.00. In 30 years, we planted over 225,000 trees on the 200 acre project. We had it for a learning laboratory.

We also had a large group of N.Y.C. (Neighborhood Youth Corps) boys who worked for various agencies sweeping, mowing, or some such job that was a dull, monotonous same thing every day--but they needed to work in order to go to school. We met and formulated an innovative "Summer School in Forestry Skills," and planned for development of recreation areas and fire trails that would also serve as nature trails. Students would learn some maintenance, planting, and care of trees and shrubs. Jobs in the State parks, schools, and camps around our area would be available for persons with these skills. In addition, some welding, small engine repair, and maintenance was taught. We had the problem, we had the need, we had the desire, and the manpower; but no money!

The mini-grant program offered $1,000 grants. We applied for a grant and we received it.

Procedures

Our school administration agreed to act as custodian of all funds and have them audited and handled just as our school district funds are handled. We really appreciated this as it removed worrying about bookkeeping and other such things.

We applied to Northeastern State College for a "Work Study" student to help supervise the group. We wanted a skilled forestry trained student who could give specialized instruction. The Tahlequah Vocational Agriculture teacher was the overall supervisor and program director.

The N.Y.C. of the Cherokee Indian tribe agreed to pay the boys who took training and worked on the project. Sequoyah Indian School sent 12 to 20 boys for 1/2 day training for 5 days each week. From 20 to 33 boys worked on the project.

A course of study and problem areas were set up and the skills to carry out the program were defined. Technical resource personnel from the following groups aided in training:

Oklahoma State Service Forester - Terry Baker
District Forester - Gary LaFrance

Service Forester - Mac Wright
Soil & Water Conservationist - Bill Dudley
RC&D Director - Allan Moss
NYC Director - Guy Osburn
NYC Counselor - Don Aide
Regional Office NYC Program Specialist - Millie Hathcock
High School Principal - Herb Rozell
School Superintendent - John Pearce
Midwestern Nursery - Bob Berry

The only problem was transportation and the FFA furnished a 2-ton truck for that and a pickup and some tools. No real problems were encountered during the training. Not one accident occurred largely due to safety training on all jobs and tools.

Results and Accomplishments

1. Students learned forestry skills too numerous to mention here.
2. Fifty percent of the local boys worked during the winter using these skills to earn money. Three boys worked regularly all winter and spring.
3. Two and one-half miles of fire guard and nature trails were cut.
4. Demonstration areas were set in pine, christmas trees, walnut trees, and hardwoods.
5. Two recreation areas were cleared off.
6. Mrs. Millie Hathcock said, "This project has been the highlight of my 5-state area visits. The boys are learning and doing a good job, they know what they are doing, and I'm going to report to Washington that they should see how well this is working."
7. We don't know whether this had any bearing on it or not but Congress appropriated $3,000,000 on August 31 for a program just like ours.
8. Leadership was developed by crew leaders.
9. Some boys had never worked so they learned the FFA way--by doing.
10. Students worked on cleaning up in the "Keep America Beautiful" program.
11. They aided the city schools in planting trees and shrubs in the landscaping program.
12. The Tahlequah FFA Chapter submitted this project as a part of their "FFA Environmental Beautification Project" sponsored by the National Junior Horticulture Association, and at their Annual Convention it was selected as the best (No. 1) project in the whole United States.
13. Included as a part of the FFA "Beautify our American Communities" contest in Oklahoma, the program was judged No. 1. On May 1, Governor David Hall presented a special citation to the Tahlequah FFA for their outstanding work.

14. Green Country, Incorporated recognized the work of Charles Hathaway as program director with a special award plaque.

15. How can you measure the skills learned; the pride in accomplishment of doing something good that will stand as a monument to his own work; the learning to work and get along with others in reaching a common goal. It may take years to measure this, but everyone who saw these boys cutting trees with axe and saw knew that here was a bunch that could and would work.

16. Six of the boys worked as fire fighters for the State Forestry Department in our county and two other counties on emergency crews--saving many thousands of acres from burning. Using the skills they learned in the program, they earned $1.89 per hour in this work.

Conclusions and Recommendations

1. This type program should be made available in every area with forests, lakes, parks, or recreation areas.

2. It was probably the best spent tax dollar in the U.S. and Mrs. Hathcock will verify that. She came to spend 30 minutes with the boys. Five hours later she was still asking questions and praising the boys for their answers and work.

3. The Federal forestry training program should be investigated for possible source of funds for additional programs in Oklahoma.

4. The primary purpose should be "skills being taught" and "jobs done." We cut only three ricks of wood--thus no money came in as our primary purpose was training.

5. We could use twice the amount of money for supplies and materials.

Editorial Comment:

This report was reproduced with very little editing. It seems presumptuous to think we could add anything of value to such a report. The program seems to be expanding with support from other sources. A follow-up will give better indication of the success of the program under different directors in different locales.

Title: Individually Prescribed Instruction for Radiation Measurements
Director: Kenneth J. Eger, Assistant Professor and Head of Department, Radiation and Nuclear Technology Department
School: Oklahoma State University School of Technology
Administrator: Donald W. Brown, Director
State Support: $750.00

Purpose: This project proposed to complete the transition of a sophomore course, "Radiation Measurements," from conventional instruction to individually prescribed instruction. Specifically, the project director was to prepare 35 fifteen minute audio tapes coupled with illustrations, 27 on experiments and 8 on basic topics. In addition, a bibliography was prepared, giving the 35 topics and reading material for each by page number. The course was then offered in the fall of 1971 with four independent options for the student to learn the material: laboratory experience, lecture, tape, and directed reading.

The Report:

PROCEDURES: BIBLIOGRAPHY FOR SELECTED READING

A selected bibliography was prepared because no single text currently meets the needs for the subject matter of the course. For example, "Lapp and Andrews" is useful on an upper-class or graduate level and "Blatz" Introduction to Radiological Health is too descriptive and contains only a portion of the material content of interest.

The bibliography was completed by choosing seven texts available at the O.S.U. Library of appropriate level and content. Two of the books were required books, one in this course, and one for a preceding core course. The arrangement of the bibliography followed an outline of the course content. Sections of each book were recommended as A-necessary, B-desirable, or C-extra reading, and assigned to the appropriate subject.

The appendices contain both the book list and the bibliography of selected reading.

The notation of the bibliography is straightforward. Typically B7:144 indicates reading on page 144 of the seventh book listed in the bibliography. However, since each book is divided according to its author's taste, page numbers may be replaced by section numbers or the equivalent.

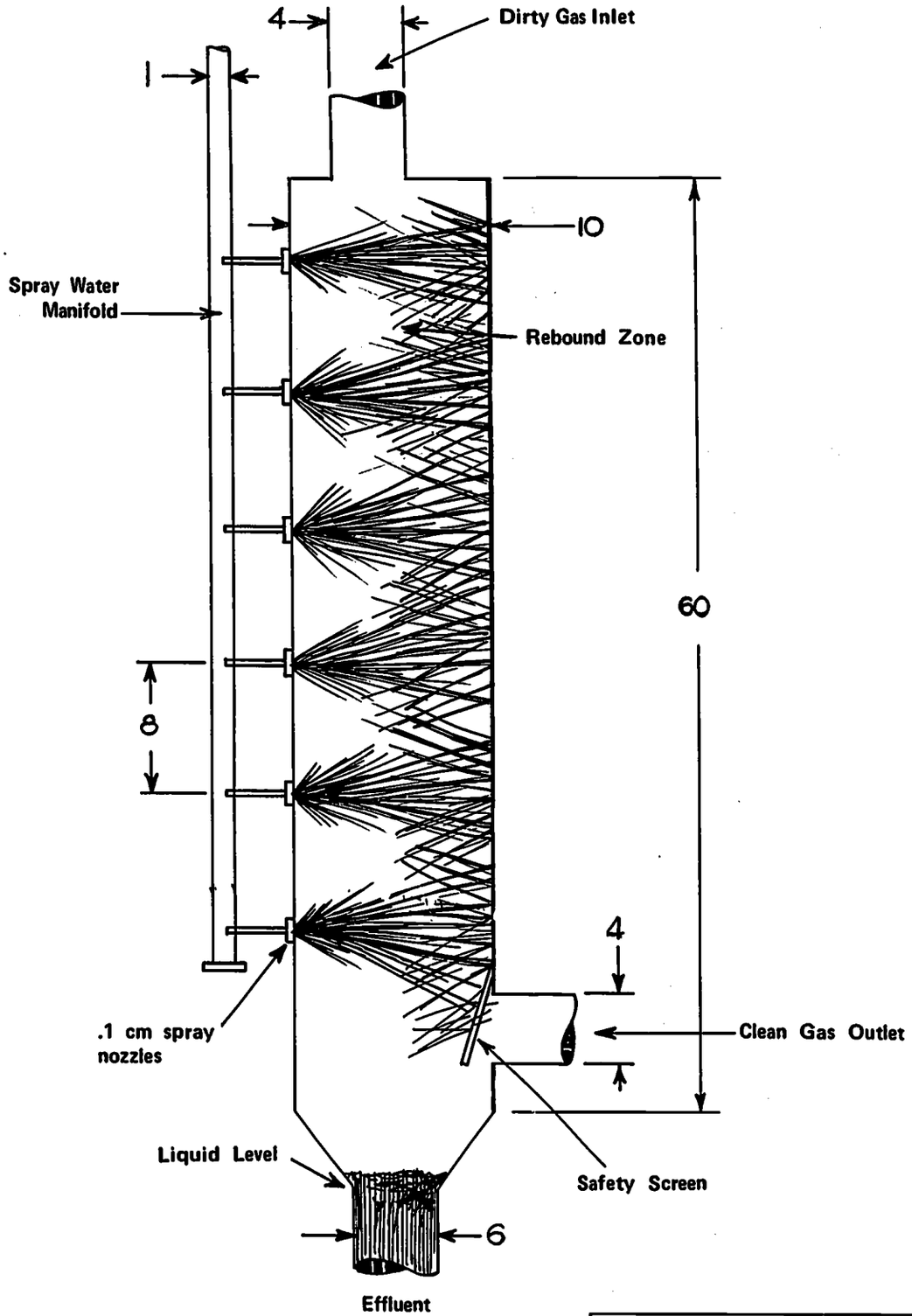
Use of the bibliography by the student is facilitated by the following steps:

1. The student selects a topic for study.

2. The student obtains from the library the reserved texts listed in the A-column in the bibliography and locates the recommended reading.

3. After reading these sections the student may wish further explanation or details to enhance his own understanding. He proceeds to column B and reads those sections which are prescribed there.

4. Section C contains the more profound discussions, derivations, and by-product topics. The students use of this section after reviewing the columns A and B is to increase his own understanding or pursue a point of particular interest.



SPRAY SCRUBBER DESIGN
"rebound principle"
FOR LABORATORY MODEL

demensions in centimeters

Scale .1cm=1cm R.P.S.

Use of the bibliography by the students is anticipated for two reasons; first, to develop suitable background material in preparation for a tape and secondly, to supplement lecture and tape presentations in the carrying out of experiments and the subsequent report.

The bibliography was generally not used by the students.

LECTURE SUBSTITUTE TAPES

A series of 36 tapes ranging in length from 15 to 30 minutes was prepared. Each tape covered an experiment or category directly related to the course objectives. In addition, a hand written explanation of three or more pages was prepared to parallel the tapes. These explanations contained numerous drawings and graphs.

Duplicates of the tapes and explanations were made available at the Physical Science desk in the O.S.U. Library. Each cassette consisted of two topics and was given to the student with a notebook containing the appropriate discussions.

The lists of tapes and a typical explanation are included in the Appendix.

Several students used the tapes extensively while others ignored their existence.

LABORATORY MANUAL

A laboratory manual for TEC RT 3315 was compiled, printed, and sold to the students through the bookstore for $1.25. The manual contained instructions for the laboratory portion of the course, a hierarchy of experiments and five sets of objectives. These sets of behavioral objectives served as a basis for pass-fail tests. The meat of the laboratory manual is the purpose, theory, and procedure for the 26 experiments required in the laboratory.

The manual served several purposes, some unanticipated. In the past, assignment sheets were given to the students at the beginning of the laboratory period. The manual made it possible to conduct experiments earlier than a prescribed time so that the students could work at their chosen pace. Too, the manual made it possible for the students to prepare in advance for an experiment. The laboratory manual was used often as a data book (printing is only on one side of the page) and this helped the students keep the data from different experiments from becoming lost or mixed up.

A copy of the laboratory manual is included with this report.

PASS-FAIL TESTS

Pass-Fail Tests, initiated the semester before the proposal was submitted, were continued during the grant period. The purpose of the pass-fail tests was to guarantee the student's ability to accomplish a specific procedure before allowing him to advance to a more difficult one.

A test of five questions was administered individually. The questions were closely parallel to the objectives listed in the student's laboratory manual. The usual procedure was for the student first to request, receive, and complete a test. The test was immediately graded

by the instructor and the results discussed with the student. In the event the student failed to accomplish one or more of the objectives, he was required to wait at least 12 hours and take another one of 45 equivalent tests. When a student completes a set of objectives, he is given a score of 100 and allowed to progress. A prime motive in preparation to take a pass-fail test is the student's desire to avoid taking it over.

STUDENT-PREPARED TAPES (SPT)

To determine if the students were able to accomplish the second course objective, they were asked to prepare three tapes apiece. Each tape was to be produced in such a way that a freshman Radiation Technology student would be able to improve his score on a ten-question multiple choice test by listening to it.

In this way it was felt a student could know when he was prepared. So often when a student is asked to demonstrate understanding in a coming exam, his preparation is not coincident with the instructors emphasis. To avoid questions like "What will he ask?", "Have I studied enough?", or "Do I know it as thoroughly as I am expected to?", the student is told to prepare an explanation for 40 questions. His study is complete when he is able to understand the questions themselves and give a knowledgeable explanation.

The procedure for making a student prepared tape is as follows:

1. Seven days in advance, the student is given four topics of ten general questions each.

2. The student reserves a time to make his tape by arrangement with the instructor.

3. One of the four topics is chosen (by reference to a random number table) when the student arrives to make his tape.

4. The student makes the tape, given an hour, and any notes he has prepared.

After all the students have prepared their tapes, the tapes are evaluated. Evaluation takes place in the following way:

1. A time is scheduled for a freshman to listen to a tape, and a tape is selected at random.

2. The freshman is given a copy of a ten-question multiple choice test to complete.

3. The test is collected when completed, and another identical test is given to the freshman along with the tape.

4. The freshman listens to the tape as often as he wishes (up to one hour total time) and completes the second copy of the test.

5. The freshman is paid 50¢ for his efforts. (No University or grant funds were used for this purpose.)

6. The pre- and post-scores for the tape are recorded in a grade book opposite the name of the tape's author.

Finally, the question-by-question results of the evaluation (but not the evaluator's name) were given to the tape's producer. In this way, the students were able to see which points they had gotten across and which concepts had not been explained sufficiently.

The tape tests, or student-prepared tests, were completed by each student and evaluated. However, the third tape was completed during exam week and freshmen were not available for evaluation until after grades were due. In addition, the differences in the freshmen assigned to evaluate different students were expected to have an effect on the scores assigned. This is particularly true when a freshman does well on the pre-test. In one case a student made 80% on the pre-test. Fortunately for the tape's author, he improved to 90% by correcting two mistakes and amending one correct answer. As a result the tapes were evaluated independently on the basis of the same ten-question multiple choice test by the instructor for assigning student grades.

A copy of the assignment given a student initially and the four matching multiple choice tests given to a freshman for evaluation are included in the appendices.

RESULTS: ANALYTICAL

To evaluate the conduct of the course, comparisons were made between the 1971-72 class and the two preceding classes. The test variable was a common test score normalized by dividing the students' previous grade point average.

The 1969-70 class was taught in a conventional way, three lectures and six hours of scheduled laboratory experiments per week. The 1970-71 class was similar except for replacement of four laboratory experiments with pass-fail tests. The 1971-72 class was taught via optional lectures, with tapes and bibliography complement and a self-paced laboratory.

At the 5% significance level, there is no significant difference between the course offered by the modified IPI and the two preceding methods. However, as discussed later, the final exams were given under various conditions, and may not be a valid indicator.

Regarding the success of student-prepared tapes as an aid in the evaluation of a student's understanding, the equal or better post-test scores (with one exception) indicate that the students were able to convey some understanding to their underclassmen.

STUDENT RECEPTION

A questionnaire, circulated at the close of the semester, was intended to sample the students' reaction to the teaching method attempted. A copy of the questionnaire along with the summary of the students' replies is included in the appendices.

Comments by the students about the course follow:

> "I liked the idea of making the tapes because when I have to get the information on my own then it means more to me, and I will remember it longer."
>
> "I missed tests...I liked the block tests. I liked the looseness of the class."

"I feel that 50% of our grades should not depend on what a freshman does..."

"I feel like I learned a lot more this way than cramming for tests. I felt like I could work at my own rate which I like very much."

DISCUSSION OF RESULTS

The statistical treatment of the test variable does not show that the student achievement was improved by the modified IPI method. However, the test variable may not be valid for the following reasons:

1. Only in 1969 was the '69 final exam given for credit. The same was the case for the 1970 exam with the Class of '70.

2. The '69 final exam, given in 1970-71, was given to a selected number of students during a laboratory period in April, three months after the conclusion of the course.

3. Course content was slightly changed between the 1969-70 and the 1970-71 years.

In addition, three students in the 1971 class made no effort to achieve a high score, even though no study was recommended. In particular, a student with an "A" for a semester scored 43/100 and 13/100 on the two final exams.

While it is difficult to see how the test variable is valid, no alternative variable was available. Before the project was begun, the past two classes were gone, leaving only their records. Only one section was to be taught, and since student-prepared tapes were to replace conventional tests, there was no way to give a final exam for credit.

In light of these questions of validity, it is encouraging to note that the 1971 class did about as well without study as the 1970 class did on their final exam.

The evaluation of student-prepared tapes showed that the students were able to explain some of the procedures and principles. In this experiment, a freshman improved his score on the average 39% of the points available after the pre-test. While listening to the tapes represents a significant increase, it does not meet the expectations of the author. It is felt that, with a good explanation, a freshman should improve his score by capturing 75% of the points available.

The author hopes that the one evaluation which indicates a 44% regression in understanding is a bookkeeping error. A personal evaluation of the tape by the instructor did not uncover any reason for such a poor result. The tape appeared to be average or better.

STUDENT RECEPTION

In general, the students received the unique teaching method well. Some special trends echoed via the questionnaire were as follows:

1. The students did not use the tapes, text, or bibliography very much.

2. The laboratory manual, while helpful, had some shortcomings.

3. The students attended most of the lectures.

4. The students would rather be tested by writing rather than by doing or saying. However, they felt the Student-Prepared Tape (oral) was a worthwhile learning experience.

CONCLUSIONS

1. Student-prepared tapes are a valuable learning tool, but must be developed further.

2. Pass-fail tests provide a readily accepted challenge to the students.

3. The means for comparison to previous classes was not valid.

4. Tape lectures and reading outlines were largely ignored.

5. Since it is believed that the course offered this way (1971) is worthwhile, the technique will be repeated with confidence in 1972.

6. The laboratory manual, as corrected, will be re-used as it complements significantly the self-pacing of the laboratory.

7. The informality of the class and availability of the instructor during laboratory periods was appreciated by the students and their learning attitudes reflected it.

RECOMMENDATIONS

1. A larger population should be secured for the evaluation of student-prepared tapes, and the student should be graded on the percent increase in test scores averaged over a sample of five members. This could be accomplished by using the tapes in sequence with a lower division class.

2. A complete experiment involving part or all of the teaching innovations incorporated in Radiation Measurements I should be planned early enough to secure a valid means for evaluation.

Editorial Comment:

Complete documentation is included with the final report. The investigator recognized the weakness of the evaluation and will continue to study the usefulness of each technique for presenting the material. It is interesting to note that the instructor will offer the course in the same manner again in 1972 "with confidence." It would be interesting to continue the study longitudinally to see if students begin to accept and use the tape lectures and bibliography more extensively.

Title: Lab Manual of Practical Business Data Processing Problems
Director: Dale I. Sare, Data Processing Instructor
School: Cameron College
Administrator: Roy Byrd, Chairman, Technical Department
State Support: $850.00

Purpose: The purpose of this project is to develop a series of problems to be used by instructors in data processing which will closely resemble those found in the business world. A lab manual will integrate the problems into a ready reference for system-type problems.

The Report:

The following procedures were followed in developing the manual:

1. Determine the number and type of problems to be covered in the manual.
2. Search resource books for formating problems; communicate with other instructors to identify their ideas and needs; obtain data that will fit the problems selected.
3. Develop manual layout and design a logical flow of information from the simplest to the more complex problems.
4. Have the materials reviewed by other instructors for clarity and relevance.
5. Test all problems to assure their accuracy.

The introduction and explanation of accounting reports included in the Business Data Processing Problem follow to illustrate the scope of the lab manual.

INTRODUCTION

The purpose of the problem stated in this Lab Manual is twofold. First, the student cannot appreciate the relationship of the parts of the problem until he is familiar with a complete problem. Once the student is able to see the complete problem, he will be able to see the relationship between each part of the problem to the whole and understand why certain jobs and controls must be maintained to have a completed product.

This problem assumes that the student is able to program with a fair degree of accuracy in the language that is easiest to use on the computer he has. However, this does not preclude taking individual sections from the book and letting the student use them as beginning problems. The student could learn the importance of controls and balancing by using part of the problem even though he will not understand how it fits into the total problem until he has seen the total problem. It is suggested if the problem is used in this manner that the data be changed so he will not be able to just fit that section into the total problem when he does the complete problem. The student might develop his own data if he was familiar enough with accounting. If the data is given to the student or he makes up the data, a control figure should be provided before the student starts the problem.

When the completed problem is used, it will serve as a model for business data processing students. The problem is about a fictitious company selling wholesale to firms in Oklahoma

and Kansas. The problem covers the last three months of a year and is intended to show the necessary accounting to complete a 3-month period of business. The test data is small in relation to what a company of this size would do, yet large enough to provide the students information to show that large totals must be used.

Each section of the problem gives the student a problem statement as to where the data comes from and where it will be used in the end. Sample data and format used is given as well as card layout. However, if the student finds another card layout better suited to the problem, then it is suggested that he use that. It is important that continuity is maintained throughout the problem.

Each section of the problem requires that the student flow chart that section as to where the data comes from and where it is going. This should then be put together to make a flow chart for the entire system. He must then make a program flow chart which he will use to write his program. Complete documentation of each section is necessary. A complete set of instructions for the computer operator is necessary. Each tag used in the programmer program must be defined in the documentation section so that anyone using the program will be able to tell what the tag is and where it is used.

Once the student has completed all the programming, he is then ready to test the problem. It is suggested that the student use only a small portion of the data given to make an initial test as this will shorten his test time. Once the student feels certain the problem is working, then he should make a run using the entire data.

When the student has made a complete run of the problem, the instructor should check the problem to see that it appears in a businesslike manner and that he does balance to the control figure. Once it is agreed that the program works properly, then the student should type the entire procedure necessary to operate the problem, including a well-written program coding sheet and a copy of each computer print-out made. To improve the appearance of the project, the student might print the entire form as he is printing the problem. However, this may not be possible on some computers. If this is not possible, then it is suggested that a separate program be written to produce the forms in the order the student will use them. The student will feel it more businesslike and should take more pride in the job. By using a form, the student will then have to use the forms feature of the computer.

The instructor can alter the program by changing the forms, changing the data, using only one month, or leaving out a section of the problem. However, it is most important that the student has a figure to balance to. It is important that the student write as many data checks and computer checks as possible to insure accuracy of the output. As a test, the student could be given incorrect data to see if he has protected himself.

The instructor could, if he so desired, take a program that is working and ask the student to modify it so that it will give a different output or do a slightly different problem. This will give the student valuable experience because this might be the first job he is asked to do when he is employed. If he is employed by an employer who buys mostly canned programs and modifies them to fit his needs, then it is certain the student should have this experience. I believe we will find more and more of this type of program modification in the future as this will cut the employer's programming time, thus enabling him to get a new job on faster. This will also cut down his need for programmers. However, the person he employs must be able to grasp the thinking of the original programmer quickly so that too much time will not be lost in modification. Some canned programs

are well documented and some have little or none, so that in either case the instructor could have two additional problems for the student, either by using his own problem to modify or to modify another student's problem from a previous year.

In conclusion, we would like to repeat the most important object to accomplish is data control and data protection. Proper documentation is necessary as well as complete instruction for the operator. Every effort should be made to use as little core as possible and do the job as fast as it can be done.

Business Data Processing Problem

A problem in Business Data Processing should cover several months of operation so several very important business decisions can be made as to purchasing, payroll, inventory, accounts payable, accounts receivable, as well as a Profit and Loss Statement and Balance Sheet. The problem must give the students some idea of what they will find in the real world of work.

The first step in developing a problem is to determine how much you cover within the framework you have to work, yet cover the necessary items to make a complete problem. In the problem, I decided to develop the following accounting report: 1) A General Ledger; 2) Payroll; 3) Accounts Receivable; 4) Accounts Payable; 5) Inventory Record; 6) Sales Analysis by Customer Department; 7) Depreciation Schedule; 8) Profit and Loss; 9) Balance Sheet. I will discuss each of the preceding reports.

1. General Ledger. The general ledger is, of course, the basis of all entries of the system. All sales must be put through the general ledger to enter the system. All expenses must enter the system by this method.

2. Payroll. The payroll system was set up so that you would have two types of payroll. A weekly payroll was used to pay the non-executive type personnel. A monthly payroll was used for the executive and to pay the salesman. The payroll as well as the whole system was based on the last three months of the year. By using the last three months of the year, you can cover the updating of the payroll as well as close out the quarterly report and complete Internal Revenue Form 941, printing the end of the year final report form to Internal Revenue, W2's, as well as reporting to the employee and to management. The student will learn the basics of payroll programming from this section.

3. Accounts Receivable: Before we have any action in a business, we must have sales. To set up this section, we developed a Universal Invoice form to be used in both accounts receivable and the accounts payable report. Next, we had to determine what items were to be sold so a list of 46 items was set up. Next, we determined who our customers are going to be and a master list was set up. After the list was set up, we determined the total amount of sales for each month and how much would be sold in each department. After that was done, we were ready to determine how much each customer would buy in each month and how much in each department. After each month, an analysis of each customer's account will be made as to payment. This will give the student an idea of how to age accounts receivable. The student must update the account with new purchases as well as receipts on accounts; this then should allow the student to obtain some experience in developing a program for Accounts Receivable.

4. Accounts Payable: If we have sales, we must have purchases. As we pointed out, the Universal Invoice developed for Accounts Receivable is used in the Accounts Payable

Section. Next, we had to determine who we were going to purchase merchandise from and develop a master list. After this was done, then we had to determine how much merchandise was to be purchased in each dept. We took the purchases of customers and developed what we were going to purchase from that. The dollar and cents figure was determined at the time sales was determined so we could determine the profit structure and the amount of gross profit on sales. The purchases must then balance to the predetermined purchaser set up at the start of the problem. Payment will then be recorded against the Accounts Payable as well as new updating of purchases. The student will determine how much discount the firm will be allowed to take, as well as how much to mark up the merchandise to stay within the profit structure set up.

5. Inventory Record. To help the purchasing department to determine how much merchandise to purchase, all sales and purchases must be recorded to one record. The buyer can then look at this record to determine how much to purchase. This section can be expanded so the computer will tell the buyer what to buy and how much based on a predetermined level either developed by the buyer or the computer, based on the season as well as sales of each item. This will allow the instructor to expand as well as the student. We have limited this section to a simple recording of merchandise bought and sold. The expansion of this section will be pointed out.

6. Sales Analysis by Customer and Dept. This section will point the use of sales statistics to be used by management for business decisions as to what items to put most emphasis on and what dept. is doing the best job as well as to find out why some dept. is not doing so well. This report will allow the salesmanager to see what customers need additional work on to up their sales to their firm and determine which salesmen are doing less than the job they should be doing. This will allow the student a chance to program a management information program.

7. Depreciation. To operate a business, you must have equipment which you are allowed to reduce in value each year. The simplest form of depreciation was taken in this schedule but will allow the student to use any of the several methods of depreciation. The several different methods of depreciation are pointed out for the student's consideration.

8. Profit and Loss Statement. For a business to determine if it has made any money, it must have a profit and loss statement. A predetermined amount of sales, purchases, expenses, as well as profit was made so that a profit was assured each three months of operation. By setting up a predetermined sales expense, it set a figure for each account section to balance, thus assuring you a more realistic problem.

9. Balance Sheet: To determine the assets and liabilities of any company you must have a balance sheet to pull all these items together. Therefore, the student has a chance to pull all the records into one program.

As pointed out, this problem is for the last three months of a year. Each section is used each month which will give the data processing student the experience of updating each month. He will be expected to do this in the real world of work. If a student completes each section in this book, he should be able to program most problems he will find in business.

Editorial Comment:

At the time of publication, this project has not been evaluated. The proposal calls for use and evaluation of the lab manual by data processing instructors in Oklahoma. Evaluation

must of necessity be longitudinal to include the students' ability to solve data processing problems in the business world. If the manual proves to be effective, it will be distributed through the State Department Curriculum and Instructional Materials Center.

Title: Office Skills Used on the Job
Director: Mary Ann Hicks, Cooperative Office Education Teacher-Coordinator
School: Norman High School
Administrator: Dr. Bert Corr, Principal
State Support: $495.00

Purpose: The purpose of this study was to improve emphasis on curriculum areas in Cooperative Office Education by determining office skills used on the job and relating these findings to classroom learning activities found in the lesson plans for students. In addition, a list of the office machines used on the job should indicate priorities for upgrading classroom equipment and for teaching of office machines.

The Report:

The study was made to determine the office skills used on the job by fifty Cooperative Office Education General Clerical students in Norman High School during the 1970-71 and 1971-72 school years. Twenty-five students were selected at random from each of the classes to complete the study. They were all female, senior students; they had completed one year of typewriting before entering the class. Each student attended school in the morning and worked in an office job in the afternoon as a part-time student learner.

Each student learner had a designated supervisor on the job who helped to train her in office skills, practices, and procedures.

The office skills used on the job by these students were related to the classroom learning activities as found in the lesson plan books for the school years of 1970-71 and 1971-72 in an attempt to improve the classroom instruction. The lesson plan analysis was limited to lesson plans of skills that were used on the job by these students.

These students listed the office machines used on the job as data on the questionnaire; the office machines data was tabulated and presented.

Outline of Procedure

As a basis for determining the office skills and office machines used on the job and the learning activities as found in the lesson plans, the following procedures were followed in this study:

1. A questionnaire survey of the students was made to determine the office skills and machines used on the job.
2. An interview was held with and an observation made of each student on the job in an attempt to verify the data.
3. The data was tabulated.
4. The findings were presented in report form.
5. An evaluation of the office skills used on the job and presented in the classroom was made; suggestions to improve the classroom learning activities were made.
6. The office machines were presented in report form that the students used on the job.

Summary of Findings

A survey of 50 Norman High School Cooperative Office Education General Clerical students revealed that they used the office skills of typewriting, communicating, filing, duplicating, recordkeeping, calculating on the 10-key adding machine, mail handling, and 15 other office skills during a typical work week.

The findings of the study revealed that the students spent 80 percent of the time using the office skills of typewriting, communicating, filing, and duplicating; and 20 percent of the time was spent using recordkeeping, calculating, mail handling, and other office skills during a typical work week.

TABLE I

OFFICE SKILLS USED ON THE JOB*

Skills Used	No.**	Percentage	Hours	Percentage of Time
Typewriting	48	96	277	30.8
Communicating	42	85	162	18.0
Filing	44	88	178	19.8
Duplicating	35	70	104	11.6
Recordkeeping	18	36	52	5.8
Calculating	16	32	19	2.1
Mail Handling	20	40	22	2.4
Other Skills	28	56	92	10.2
TOTALS			900	100.0

*Typical Work Week, 900 Hours

** COE General Clerical Students, 1970-71 and 1971-72 Norman High School

Table II shows the classroom learning activities found in the lesson plans of the Norman High School Cooperative Office Education General Clerical classes named in the study.

Table III indicates the use of office machines on the job.

TABLE II

CLASSROOM LEARNING ACTIVITIES

Major Areas of Learning Activities	Hours Per Week	Percentage of Time
Typewriting	3.5	35
Office Practices	1.0	10
Communicating	1.0	10
Human Relations		
Personal Development	1.0	10
Filing	.5	5
Calculating	.5	5
Recordkeeping	.5	5
Lab Period	2.0	20
TOTALS	10.0	100

Evaluation

A study of 50 Norman High School Cooperative Office Education General Clerical students revealed the office skills used on the job and the classroom learning activities found in the lesson plans for the class. These findings revealed that the students used the same office skills on the job as were presented in the classroom learning activities. The amount of time spent in the classroom learning each office skill was not consistent with the amount of time each was used on the job, the study revealed.

To improve the classroom instruction, suggestions were made for the students to spend approximately the same amount of time in the classroom learning each office skill as they used the skill on the job during a typical work week. This was done by matching the percentages of time that each office skill was used on the job by the students with its presentation in the classroom as a learning activity.

1. Typewriting

Typewriting was presented as a classroom learning activity 35 percent of the time during a typical week of classroom instruction and used on the job 30.8 percent of the time during a typical work week by the students in the study.

Since the percentages of the two were matched, no changes were suggested for the amount of typewriting instruction that should be presented in the classroom each week.

2. Communicating

Communicating office skills were presented in the classroom 10 percent of the time and used on the job 18 percent or more of the time by the students in the study during a typical work week.

TABLE III

OFFICE MACHINES USED ON THE JOB

Office Machines	No. Using	Office Machines	No. Using
Typewriter	56	Full-Bank Adding	1
Manual	17		
Underwood	14	Copying Machines	33
Royal	2	3-M	11
Underwood		Thermofax	11
Primary Type	1	Xerox	7
		107 Copier	2
Electric	39	Pitney Bowes	1
IBM	25	Exe. Sec.	1
Selectric	7		
Smith-Corona	1	Postal Meter	3
Underwood	4		
Royal	1	PBX Switch Board	2
Sears	1		
		Address-o-graph	1
10-Key Adding Machine	37		
Electric	18	Colator	1
Olivetti-Underwood	13		
Others	5	Electrostatic Copier	1
Manual	1	Puncher	1
Calculator	5	Sorter	1
Monroe	3		
Olivetti-Underwood	2	Perforator	1
Duplicating Machines	24	Dictaphone	2
A. B. Dick	19		
Others	5	Blue-Print Machine	1
Master Machine Underwood	1	Printing Press	2

The suggested change for instruction in office communications in the classroom was that it be presented an additional hour each week or 10 percent more of the classroom time.

3. Filing

Filing office skills were presented in the classroom 5 percent of the time and used on the job 20 percent of the time by the students during a typical week.

The suggested change for instruction in filing office skills was that filing office skills be presented an additional hour and 30 minutes each week during classroom instruction.

4. Duplicating

The office skill of duplicating was used 11.6 percent of the time on the job by the students in the study and presented in the classroom one percent of the time during a typical week.

The suggested change for duplicating instruction was that it be presented 11 percent or one hour of the classroom learning time each week.

5. Calculating

Calculating on the 10-key adding machine was used as an office skill 2.1 percent of the time during a typical work week and presented as a classroom learning activity 5 percent of the time by the students in the study.

The suggested changes for calculating instruction was that it be presented in the classroom as a learning activity two percent of the time or 15 minutes during a typical week of classroom instruction instead of 5 percent or 30 minutes.

6. Recordkeeping

Recordkeeping was used on the job 5.8 percent of the time and presented in the classroom five percent of the typical week, the study revealed.

No changes were suggested for the recordkeeping instruction during classroom learning periods of time.

7. Mail Handling

The students spent 2.4 percent of the time using the office skill of handling mail on the job during a typical work week; mail handling was presented in the classroom during office procedures and practices instruction each week.

The suggestion was made to present the mail handling office skills instruction 10 to 15 minutes during the classroom learning periods each week.

8. Other Office Skills

The other office skills were used 10.2 percent of the time by the students in the study during a typical work week; they were not presented during classroom instructional time.

The suggestion was made for the students to learn these other office skills on the job rather than during classroom learning activities due to the expense of providing classroom instruction and because so few of the students used each of the office skills mentioned. The suggestion was made for the students to gain an acquaintanceship level of understanding of the other office skills and machines mentioned.

If the suggestions to improve the classroom instruction were followed, 85 percent of the classroom time would be spent learning the office skills of typewriting, communicating, filing, and duplicating. This suggestion was justified by the fact that 70 percent or more of the students in the study indicated the use of each of these four office skills on the job; they used these office skills 80 percent of the time during a typical work week.

The remaining 15 percent of the classroom time could be spent in learning the office skills of calculating, recordkeeping, mail handling, and other office skills mentioned. This suggestion was justified by the fact that 20 percent of the time was spent by the students using the office skills of recordkeeping, calculating on the 10-key adding machine, mail handling, and other skills. By comparing the percentages of time that the office skills were used on the job by the students with the suggested percentages of time they could be presented in the classroom, a justification for the suggestions made may be seen.

These suggestions were made as general guidelines to improve the classroom learning activities in the Norman High School Cooperative Office General Clerical classes. Individualized instruction to meet the needs of students would be the desirable means of instruction; some may need more typewriting, filing, or communicating instruction than others because their jobs demand these skills, for example. The teacher should meet the student on an individual basis if she is to meet their needs successfully. The content of the classes mentioned should be flexible to meet the needs of the students as well as the business offices.

To a large extent, office practice has been a task training course. Its current role seems to be to train specialists such as typists, filing clerks, and duplicating operators. Instruction in this course should aim to bridge the gap between theory and practice in general office activities and help prepare students to meet the qualifications for general office jobs as designated by business firms.

The needs of business control to the large extent the role of office practice instruction. In order for the course content to be of value, it appears that it is necessary to be aware of the changes that are occurring within the business office today.

Editorial Comment:

A major assumption was implied in the evaluation section of this report. The implied assumption is that the time necessary to learn a given skill is directly related to the amount of time that particular skill is used on the job. The editor is not willing to make that assumption. We believe the usefulness of this project relates to the identification of skills used on the job and not to the amount of time those skills are used. The director of the project redeems herself (in our minds) by stating, "The content of the classes mentioned should be flexible to meet the needs of the students..."

Title: Promotion of Industrial Chemistry Technology in Oklahoma
Director: Freida Ann Jones, Head of Department and Instructor, Industrial Chemistry Technology
School: Eastern Oklahoma State College
Administrator: Robert Keck, Dean of Technical Education
State Support: $850.00

Purpose: This project was proposed to develop public relations and recruiting techniques for the purpose of increasing enrollments in Industrial Chemistry Technology. A second purpose emerged during the project--to propose a reorganization of the Chemical Technology curriculum to allow program options which would more nearly meet the needs of particular segments of industry.

The Report:

Visits were set up to Florissant Valley Junior College, St. Louis, and Texas State Technical Institute, Waco, to study their programs and seek information regarding curricula and recruiting practices.

Visits were made to industry to further communication between the college and industries in the State. Specifically, the investigator was encouraging industry to assist in recruiting students, furnishing scholarships, offering industrial tours, and cooperating in summer work programs for students between the freshman and sophomore years. Specific training to meet industrial needs was also explored. In all, the investigator visited nineteen industries, government installations, and medical centers.

Educators from other institutions were consulted, and a collection of catalogs and brochures from colleges throughout the United States was obtained for study on programs and promotional material.

Results and Accomplishments

Color pictures of Eastern's campus and laboratories and of a graduate working at the Kerr-McGee Sequoyah plant have been obtained for use in brochures and other promotional materials.

Agreement has been obtained from the following installations for individuals to serve on an advisory board:

Sun Oil Company, Tulsa
Continental Oil Company, Ponca City
Kerr-McGee Sequoyah Plant, Gore
U.S. Environmental Protection Agency, Ada
Halliburton Services, Duncan
Phillips Petroleum Company, Bartlesville
Bureau of Mines Laboratory, Bartlesville
Naval Ammunition Depot, McAlester
Weyerhaeuser Company, Valliant

Ten to fifteen years total of Chemical Abstracts have been donated to Eastern's Library.

Kerr-McGee Sequoyah Plant has presented an assembly program to the freshman orientation class of 500 students and has tentatively agreed to set up a summer cooperative work program with Eastern.

The individual reports indicate interest on the part of many of Oklahoma's largest establishments in employing graduates of the program. Halliburton's group leaders spent two to three hours in a meeting the day before my visit drawing up a list of suggested equipment and techniques.

Conclusions and Recommendations

During the summer, discussion with Mr. Anthony Lotempio, Broome Technical Junior College, Binghampton, New York, provoked an idea I have pursued this year. Mr. D. Frederick O. Nash, State University Agricultural and Technical College, Delhi, New York, and Mr. Leroy Bay, Florissant Valley Community College, St. Louis, Missouri, contributed to the program extensions I am proposing, either as options or as separate programs built around a common core of chemistry courses. I propose:

Chem Tec -- CHEMICAL TECHNOLOGY

Options:
- Industrial Technology
- Medical Technology
- Veterinary Technology
- Environmental Technology

Ground work on these programs has been done, as is indicated in the individual reports. Degree Outlines and Course Descriptions follow. The programs will be built around the chemistry courses and the instruments we now have. Advisory Committees are lined up, or suggestions are ready to be acted upon. Internships can probably be set up for Environmental Science at the Environmental Protection Agency at Ada. Internships and course work for Medical Technology can be handled at the new McAlester Regional Medical Center which will involve both hospitals. Dr. William E. Brock, Dean of the College of Veterinary Medicine, Oklahoma State University, will set up an internship for the Veterinary Technology Program at OSU. As the program grows, additional internships could be set up at approved hospitals and clinics. All these programs are subject to revision.

I understand from Mr. Bob Keck, director of Technical Education at Eastern, that all these programs have been recommended by the State Department of Vocational and Technical Education. I hope the regents act favorably on them. Dr. Dan Hobbs, Regents Office, recently made a statement that "we need to turn a million people around in the seventies from the teaching profession to the allied health professions." These programs represent steps in that direction.

The pathologists at both McAlester Hospitals are enthusiastic about the Medical Laboratory Assistants Program. "I'll contribute my time to get it started," says Dr. M. D. Bellamy at McAlester General.

The proposal of a Veterinary Technology Program for Eastern is based on the Oklahoma Veterinary Medicine Association's survey indicating that 200 assistants could be employed today in Oklahoma, and about 40 per year thereafter. The regents have already suggested that such a program be set up at one Oklahoma Junior College. We are the first to request it.

The new Industrial Chemical Technology Advisory Committee should result in better correlation between Eastern and industries in the state. The committee will meet once each year, probably in the spring. The curriculum will be studied, and suggestions for new instruments and modernization of the program will be discussed. Several of the people contacted are willing to visit Eastern for talks and assembly programs. Several have invited me to bring students to their companies for a tour. No one has come up with a new idea for recruiting students into the program. Only one company has expressed an interest in setting up a summer cooperative work-study program with us. Little or nothing has been accomplished in obtaining direct scholarships for the program. Most of the companies have scholarships available, but at higher levels than freshman and sophomore, and in many cases these are with certain colleges and universities. Also the setting up of scholarships is handled at a higher company level than the technical and personnel people with whom I was visiting. The advisory committee meetings should help us in these areas.

Three companies contacted (Sun, Goodrich, and Weyerhaeuser) have all non-four-year degree jobs tied in with their Unions. Technicians work up through the ranks and apply for on-the-job training to be a technician. Sun would like to break away from this tradition, and the laboratory manager asked if we couldn't get some high level politician to write a letter to a high official in Sun suggesting that the federal government would like to see them hire college-trained chemical technicians, as the government is pushing the program, etc. Weyerhaeuser admits that our people would be better prepared scientifically for some of their technician jobs than the Union people (other than experience in the paper pulp industry).

Several companies indicate government pressure that they hire more employees from minority races--blacks, Indians. They ask if we have any, and say they could employ them immediately. We don't.

New equipment needs for each of the programs can be deduced from the individual reports. For Industrial Chemical Technology the next large items desired are:

1. Malmstadt-Enke Electronics Laboratory Station
2. Varian T-60 Nuclear Magnetic Resonance Spectrometer
3. Mass Spectrograph

For the Environmental Technology program:

1. Hach (and other) portable testing equipment
2. Technicon automated system

For the Med-Tech and Vet Tech:

1. Technicon automated system
2. Sodium-potassium flame photometer
3. Coulter S Counter

Items to be completed include: 1) The request for N.S.F. funds. 2) The color brochures and/or posters using pictures taken during the year. 3) More publicity for the program.

Every teacher in a scientific or technical area should have the opportunity to visit industrial plants, as I have done this year. Contact with potential employers is invaluable, and I recommend that funds be set up for this purpose for all teachers. There are many industries I did not get around to visiting during the year, and which I need to visit. Right now

I feel that my interest and enthusiasm in Industrial Chemical Technology has been revitalized, and that I have a story to tell to prospective students--and the project is about over. I need another year to convey all I've learned to the high schools.

Editorial Comment:

The research committee probably misinterpreted the intent of this project. "State-wide publicity" was mentioned in the proposal, and we were hoping to see a general public relations program which would increase chemical technology student enrollments in all programs. Information from our demand-supply system (OTIS) indicated a need for 83 additional chemical technologists in 1972 in the state--25 of which were needed in the four-region area of southeastern Oklahoma. Chemical Technology programs are offered at Oklahoma City Area Vocational-Technical School, Tulsa Area Vocational-Technical School, and Connors State College--the latter also serving the southeast. The intent of the Director was to increase enrollments in the program at Eastern Oklahoma State College. Hopefully, she has developed a model which would be useful to the other institutions which offer chemical technology. Regretably, the project did not produce a general public relations program to increase the interest of prospective students in chemical technology. A next step would be to make use of her information, including a follow-up of success, and develop promotional materials for counselors and others to use throughout the state.

Title: Simulations: A Painless Way to Help Adolescents Improve Life Career Decisions
Director: Odetta Lewis, Counselor
School: Edison High School, Tulsa
Administrator: M. J. Ruley, Director of Vocational and Industrial Education
Tulsa Public Schools
Donald Hoopert, Principal, Edison High School
State Support: $1,000.00

Purpose: To test the usefulness of the Life Career Game as a motivational device and teaching tool to help students assess their value systems, project life wants, and plan careers. The goal of the project was to explore possibilities of a systematic career development program.

The Report:

Analysis of pre- and post-test data after completion of the Life Career Game indicated the following:

1. Participants seemed more willing to commit themselves to both long- and short-term goals in planning their lives.

2. Participants were more likely to make career choices consistant with their abilities, long- and short-term goals, and educational requirements.

3. Participants registered a slight positive movement in the direction of feeling an increased control over their lives.

PROCEDURES

Dr. Barbara Varenhorst, psychologist with the Palo Alto Unified School District, conducted a two-day workshop in August for five counselors, one director, one assistant principal, twelve teachers, (7 business education, 3 home economics, and 2 industrial arts) in learning how to monitor the Life Career Game.

Throughout the school year, the Life Career Game was used in a total of five classes with approximately 250 students for periods of three to five weeks. Combinations of classes were organized as follows: (1) home living and notehand with Mrs. Linda Hefley and Mrs. Diane Brill as instructors, (2) drafting and English class with Jim Womack as instructor, (3) integrated ninth grade homemaking class, instructor, Mrs. Katherine Whitaker, (4) business law class, instructor, Frank Twist, and (5) home living class, instructor, Diane Brill. One to three counselors were involved assisting the teacher in counseling and scoring the Life Career Game. Three of the five classes met in the guidance resource center where all kinds of career educational material was available. The following references were used as supplementary materials to enhance the program.

(1) VIEW (Vital Information for Education and Work). The microfiche reader-printer, with 121 job category cards, enabled students to view jobs and the current economic conditions, available opportunities, necessary qualifications and prerequisites in order for students to plan their educational efforts toward particular career goals.

(2) Bowmar - a series of multi-media career information materials.

(3) SRA - Occupational Explanation Kit.

(4) SRA - Work - Widening Occupational Roles Kit.

(5) Vo-Tech School Bulletins, Business School Bulletins, College Catalogs, Apprenticeship Training Program Bulletins, and U.S. Armed Service Information.

The materials for the Life Career Game were typed and duplicated by PTA volunteer workers under the direction of the Edison PTA President, Mrs. Leroy Blackstock.

Conclusion & Recommendations

Overly ambitious plans for the project were made. Many of the teachers trained to use the Life Career Game felt the game was too time consuming and could not be worked into their class schedule. Therefore, not as many students had the opportunity to participate in the game as had been originally planned.

The Life Career Game is most difficult to measure subjectively but is an excellent tool to use in developing a career education program for all students. Use of the Decision-Making Materials produced by College Entrance Examination Board was an asset to the game and is highly recommended.

One unique thing about the Life Career Game is that most students can interact with this game wherever they are; however, there are a few so frightened by the thought of the future, they cannot interact with the game. This is important information for the counselor to have.

The hardest part of the game for most students was planning a typical week including all activities on a 24-hour basis. Students were dealing with the concept of time, in terms of what will bring the most satisfaction now and in the future. How one plans and budgets his time is probably one of the most differential factors among people. Some students do not have a sense of the importance of time but as students compare their classmates alternatives in use of time, they clarify their own values.

The first and most gratifying result was the intense interest and involvement of the majority of the participants for relatively long periods of time.

The game has a number of effects besides motivational ones. It not only served as an efficient means of communicating intellectual and factual knowledge, but with a simulated environment, provided a substitute for experience. Students were given practice in decision-making on educational careers, use of leisure time, and family life, that they had not yet experienced in real life.

Players seemed to gain a deeper understanding or empathy for the role which they assumed in the game.

Most of the students seemed to develop an appreciation for the importance and complexities of the decisions that lie ahead. Most felt that they did have greater control over their own lives and realized how one uses one's leisure time and planning for the future was important. Career decision-making is a more complicated task than one had previously thought, competence in decision-making is very important as it gives greater freedom and provides personal satisfaction to the individual.

The game should influence students to make more intelligent decisions about their own lives. (re: educational and vocational opportunities, satisfying family life, use of leisure time, career or job selection, self-understanding, establishing goals.)

The most valuable effect the game could have however--and the most difficult to measure--would be to influence young people to make more intelligent decisions about their own lives. If the simulation experience stimulates a student to seek information about careers he had not previously considered, reconsider a plan to drop out of high school or college, or marry at a very early age or simply to think more rationally about what his life will be or could be in a more distant future than the time spent in playing, the game would be more than justified.

Recommendation:

This simulated game would be very effective included in a class specifically designed for career education or vocational guidance. The time element involved makes it difficult to reach the full potential of its effectiveness when it becomes a part of the curriculum of another discipline.

The Life Career Game is an open end instrument which could be effectively used as a teaching tool in the "world of work" program on both the secondary and junior high school levels.

The analysis of the findings is an invaluable source of information for the counselor when used in individual counseling.

Editorial Comment:

This project appears to have achieved its purpose and results may be generalizable to other schools in Oklahoma. With the increased emphasis on Career Education, the significance of the report is increased. As a result of this project, the Life Career Game has been adopted and is being used throughout the Tulsa Public School system.

Title: Slide Series for Visual Merchandising Unit of DE II
Director: Frank E. Morrison, DE Teacher-Coordinator
School: College High School, Bartlesville
Administrator: Wayne Richardson, Assistant Superintendent
State Support: $635.00

Purpose: The purpose of this project was to produce a slide series to be used with the visual merchandising unit of DE instruction.

The Report:

SLIDES AS AN EFFECTIVE TEACHING AID

I first became interested in using slides educationally when I found that slides of various activities of my DECA chapter and classwork were more meaningful and effective teaching tools than words.

I found slides could show the audience what I was saying, lent clarity and accuracy to my words and made me a more effective teacher. The few slides that I had taken to illustrate a point, captured attention, got the message across quickly, and built interest. I was able to show exactly what I meant. This means of displaying materials could enable me to take my students on inexpensive field trips, to large metropolitan areas in a short length of time, and allowed them to see all types of business activity as well as displays, design, and color.

Because of this experience, I made application for a mini-grant to illustrate the Display section of the new Curriculum Guide for DE II. The guide provided me with an appropriate systematic plan. The next step was to plan the scenes needed to illustrate the curriculum. In some cases, I found actual displays to photograph but in many instances, it was necessary to build or rearrange the display to get the necessary illustration.

I kept in mind that the visuals were to carry the message and the Teacher-Coordinator would need to narrate and clarify with only a minimum of explanation. I endeavored to find and/or build displays that helped me achieve my objective, focus attention on the main ideas, and illustrate them clearly. In developing the series, I shot over 600 pictures, and then selected the best illustrations to compile the 188 pictures that are in the completed series. This relative low number of unused slides was due to careful planning of what I needed to photograph to illustrate specific points.

I first took pictures in local business establishments that are DE training stations. The local training stations were most cooperative allowing me to arrange, regroup, and shuffle their merchandise to illustrate definite points in the curriculum. By the time the series was completed, I had taken pictures not only in Bartlesville and Tulsa but also Ft. Worth and San Antonio, Texas, Atlanta, Georgia, and Chicago, Illinois. Very few local shots were used in the final series. I felt that displays taken in different locales would help the students see a wide variety of expressions worked into displays. They would not be viewing displays that they had worked on or had grown familiar with at their training stations.

Most firms, regardless of their locale, were most cooperative and felt flattered that their displays were outstanding enough to be used in a slide series of this nature. Some used were not outstanding displays but still illustrated a point. In a relatively new shopping center in Ft. Worth, Texas, I found an unusual method of displaying silverware on a

door that concealed back-up stock. I approached the sales clerk, explained my reason for wanting a picture of the display and asked her permission to take the photograph. She haughtly informed me that I would have to have the manager's permission. I patiently waited while he finished with a slow customer who did not purchase. The clerk even tried to delay the manager talking to me. When I finally had a chance to explain my situation and ask his permission, he was reluctant. I told him that I would be happy to provide various proofs of identification that I was not a competitor. He agreed to look at my identification and then make a decision. While he looked at identification, we visited about the DE program and how my slides would be used. He decided he would be happy for me to take any photographs in his store that I would like in my series. I turned around to find the uncooperative sales clerk posted in front of the display with the door open "very busy" shuffling the back-up stock so that the display was not visible. The manager asked her to move and she huffed to the other side of the store. I took pictures of the display from various angles. In completing the slide series and selecting the best slide produced to illustrate the points in the curriculum guide, I found another picture that illustrated the desired point better than this one I had so much trouble getting to photograph.

To plan and compare different slides in the series, a slide illuminator of some type that would hold several slides was necessary. All the devices available were too small to adequately lay out, compile, edit, etc., a slide series of this size. This necessitated designing an illuminated table, 2' x 4' with two large florescent bulbs under opaque plastic with a plate glass top. The table is 30 inches high with electrical plug-ins, and an on/off switch to operate the lights. It also serves as a desk. Any worthwhile slide project will encounter obstacles, require improvising, and some investment.

I used the completed series this spring as I taught the display unit. I found that the series did all that I had hoped it would. The pictured arrangements, devises, color, etc., focused attention on the main ideas and illustrated them clearly. The students had a clear picture more indelible in their memory, and each had the same concept. It has become a SLIDE SERIES WITH A PURPOSE.

Because of the successful teaching experience with this illustrated portion of the DE Curriculum Guide, I feel the entire DE Curriculum and any curriculum would profit from slide illustrations. Slide projectors are readily available to most teachers and a slide series would not only enrich the classroom learning experience, but better train students for their field of work.

Editorial Comment:

The slide series has been distributed to all Distributive Education teachers in Oklahoma. The Curriculum and Instructional Materials Center of the State Department of Vocational and Technical Education has evaluated the series and offered suggestions--primarily in the area of quality control. The project director has been contracted to produce slides for seven additional units of the DE II and DE III curriculum.

Title: Student Learning Package
Director: John A. Girdner, Carpentry Instructor
School: Tahlequah High School
Administrator: John Pearce, Superintendent
State Support: $718.00

Purpose: The purpose of this project was to develop a package of learning materials for academically disadvantaged carpentry students. The vocabulary terms would correlate with the Vocational English class and the math would be correlated with the Practical Mathematics class at Tahlequah High School.

The Report:

Following is a report of how the project was approached. I started by going to Stillwater to consult with Mr. Roy Ayres and other T&I supervisors to obtain their ideas about the project. Some books were then purchased for study. These consisted of the newly adopted carpentry textbook and some resource books such as Carpentry Mathematics, Masonry Simplified, and other related field books. I found some books to be out of print.

I had consulted with several carpentry instructors at our August conference and we felt an analysis of the basic skills necessary to function as a carpentry apprentice should be the first step. Assignment sheets, job sheets, and information sheets were then developed to aid on-the-job exercises in learning these skills. A list of vocabulary terms was also developed.

After meeting with the Vocational English teachers, these vocabulary terms were incorporated into their teaching exercises. They are also using the assignment sheets from a course outline for Vocational English which was produced at an EPDA workshop in Durant. The principal and one of the counselors also attended the meeting with the Vocational English teachers.

A similar meeting was held with the Practical Math teachers, the second counselor, principal, and the Practical Science teacher. We worked on ways in which the math teachers could help all the vocational departments in the school. Plans were also discussed about a new class in Practical Science for vocational students.

I was not well pleased with what I had to this date, so I made a trip to Stillwater in March to confer with my supervisors and Dr. Frazier. I also examined the new course outlines for Auto Mechanics and CVET Construction Trades and got the idea for my last attempt at producing study guides.

A final meeting was with three of the leading builders in this area. They inspected the material and offered suggestions for the rest of my efforts.

In summary, I would say that the most important things to come out of the project were coordination of my program with English and math departments, better understanding of my program with the builders, and the material with which to continue development of the study guides. I feel that the approach I am now taking will result in creation of useful study guides for carpentry teachers.

Editorial Comment:

This project was obviously not a research project in the traditional sense. However, it certainly has been research to the project director as he set forth to obtain new knowledge.

At the time this report was prepared, Mr. Gardiner had completed the job analysis, an outline for instructional units, and a number of the assignment sheets, information sheets, and other materials that will become the instructional package. The mini-grant has, in a small way, been the catalyst which started Mr. Gardiner on the way to improved instruction.

Title: Student Motivational Aids for the Bulletin Board in Distributive Education
Director: Chris Byrd, Jr., Distributive Education Coordinator
School: Nathan Hale High School, Tulsa
Administrator: M. J. Ruley, Director of Vocational and Industrial Education, Tulsa Public Schools
State Support: $486.00

Purpose: This project was to develop a booklet of bulletin board ideas for use in ten areas of Distributive Education.

The Report:

This is only an interim report.

All of the ideas for bulletin board use came from the students after they covered a subject area. Each student was asked to rough out five in the particular subject area. Most of the ideas tended to be the same. To develop acceptable sketches for the booklet, the project director selected the content with students contributing ideas regarding placement of illustrations, etc.

After students became interested in bulletin boards, some brought sources of bulletin board ideas which will be incorporated into the final report.

As a teaching tool, bulletin boards have much value for Distributive Education. They encourage students to think along the lines of an advertising layout, show card writing, and most important, creativeness.

After each subject area has been covered, the instructor needs to prompt the students with fresh ideas as students tend to transfer ideas from previous subject areas.

Although the project director originally intended to develop a color booklet of the ideas, it has proven to be less expensive to prepare color slides.

Editorial Comment:

This project illustrates the need for adequate preplanning. The project director proposed to develop five bulletin board ideas for each of ten Units in Distributive Education. Inadequate resources made it difficult to obtain the ideas, yet other Distributive Education instructors in the State were not approached as a possible resource. Preplanning would have supported the appropriate medium for reporting the ideas. Hopefully, a product which will be useful to Distributive Education instructors will be completed in the immediate future.

Title: Summer Institute or Workshops for T&I Welding Teachers
Director: Douglas Morris, Welding Instructor
School: Southern Oklahoma Area Vocational-Technical Center, Ardmore
Administrator: Jack Stone, Director
State Support: $590.00

Purpose: The purpose of this project was to investigate the usefulness of a summer workshop to upgrade teachers in welding technology. It was intended that a report to Oklahoma Welding teachers would be made at the Annual Vocational Teachers Conference in August, 1971, and would include an oral report, a written evaluation, and welding demonstrations.

The Report:

Problem

Welding teachers must be constantly searching for the latest welding procedures and techniques to properly train students to meet the changing needs of the Welding Industry. In order to keep training programs geared to meet these requirements there should be intensive summer workshops or institutes designed to enable welding teachers to upgrade their local training programs. The question raised is whether there is such a training program offered in the United States which is pitched to high enough a level to justify a school district or individual to spend the necessary time and money to participate in such a program.

Procedure

I searched out what appeared to be the best workshop offered for welding teachers, namely, "Two-Week Intensive Welding Workshop" offered by the Hobard School of Welding Technology.

I attended this workshop June 14 thru June 25, 1971, and I present the following summary, conclusions, and recommendations.

Workshop Summary

There were fourteen teachers in attendance from various states. Some as close by as Kentucky and some as far away as Alaska. Represented in the group were teachers from Trade and Industrial Education, Vocational Agriculture, and Industrial Arts. Upon completion of preliminary introductions, a brief tour of the Technical Center and the shooting of a class group picture, we were given a copy of the Workshop Course Outline. We were to choose between Oxy-Acetylene Welding and Gas Tungsten Arc Welding for the first week and between Shielded Metal Arc Welding and Gas Metal Arc Welding for the second week. I chose Gas Tungsten Arc Welding and Gas Metal Arc Welding.

The instruction given in both the MIG and TIG areas was strictly introductory and basic as if the group had no knowledge of or experience with each particular type of welding. From observation, I am satisfied that the Oxy-Acetylene and Shielded Arc Welding classes were taught on the same basis. There was an excess amount of dead time on our part waiting for the instructor. This lost time was because the instructor in each given area

of welding also had a regular class of welding students. Thus he had to split his time between the two groups. Our time was actually about 50% classroom and 50% shop time.

The school is well equipped with adequate working space with no more than one person assigned to each work station. The instruction was not sales pitched at any time. The quality of instruction was good in the area taught. The regular welder training program was good from what I was able to observe, but the teacher's workshop was hodge podge sandwiched in with the regular instruction.

Conclusions

1. The workshop definitely was not geared to meet experienced teachers' needs, but totally basic on beginner's level.

2. The workshop was helpful to those teachers desiring to learn some about a process which was new to them.

3. The workshop helped reassure that our training program in Ardmore is parallel to that of a major concern.

Recommendations

1. Considering costs (approximately $590) and type of instruction available, the following alternate recommendations are presented as more feasible methods of helping T&I Welding teachers keep their training programs current:

   a. Enroll in specific area of welding training during the summer at such centers as Hobart Brothers Technical Center.

   b. Hire a qualified welder to train the teacher in a specific area needed.

   c. Visit and/or work in local industrial plant with concentration in desired type welding during summer.

   d. Work as a group through State Department of Vocational and Technical Education and set up with State or regional intensive workshops within the state to meet specific needs from time to time as new processes and problems arise.

Editorial Comment:

While this project may have been disappointing to the director, it served the purpose for which it was intended. Supposedly, more efficient and feasible alternatives have been suggested. However, it seems that these alternatives should also be tested as a follow-up of this project.

Title: Survey of Student Attitudes Toward Vocational Opportunities and the Business World
Director: Kay F. Smith, Cooperative Vocational Education Teacher
School: B. T. Washington High School, Tulsa
Administrator: M. J. Ruley, Director of Vocational and Industrial Education Tulsa Public Schools
State Support: $500.00

Purpose: The purpose of this project was to develop a survey technique which may be used by teachers to gain an understanding of problems and needs of disadvantaged students. The survey has as its major objectives:

1. To determine the students' family backgrounds with regard to work experiences
2. To determine the extent of student current job employment
3. To determine the types of work experiences the students have had
4. To determine the likes and dislikes of the students with regard to types of employment
5. To determine why students do not remain employed once they are hired
6. To find out the future career plans of the students
7. To determine if current employment practices are compatible with the students' career plans
8. To determine if there is a correlation between student employment and student involvement in school activities
9. To determine the extent to which teachers guide students with employment decisions
10. To determine the extent of student travel experiences

The Report:

SCOPE AND PROCEDURE

According to the U.S. Census Bureau, Tulsa, Oklahoma, is divided geographically into four economic areas:

NORTH--lower to upper-lower income
WEST--lower-middle income
EAST--middle to upper-middle income
SOUTH--upper-middle to higher income

The educational needs of the school-age residents in each area are met in part by high schools located within the area. Most of these high schools are financed through the Tulsa Public School System. Each high school provides educational facilities for the students residing within its geographic boundaries which in most cases includes that area immediately surrounding the school plant.

Booker T. Washington High School is located in the north part of Tulsa and serves the black community. There are approximately 1,000 students enrolled at Washington, 95% of which are of the black race. Of these students, 500 who are 16 years of age or older were surveyed through the cooperation of the English teachers. This procedure gave each eligible student who was enrolled in an English class an opportunity to complete a survey form during class under the supervision of a teacher. No student was required to complete the survey form; thus, all forms received contain voluntarily given information.

These completed survey forms were then grouped according to the sex of the student, and 130 responses from males and 130 responses from females were selected randomly for tabulating. This gave a total of 260 completed survey forms which represents approximately 37% of the total school population over the age of 15. By selecting the sample in this manner, it was possible to receive enough responses from a variety of student academic achievement levels to make the study results valid.

CONCLUSIONS

1. Only 47% of the students responded that they are under the guidance of both mother and father. 40% responded that they live with "mother only." These percentages appear to be relatively high.

2. A majority of the students responded that the adult responsible for their welfare is currently employed and that most of the jobs held are held during the day hours.

3. Only 6% of the above mentioned adults are employed in the sales field. 75% of the job titles reported were in areas involving manual skills rather than professional occupational skills.

4. 25% of the students indicated that five or more people under the age of 19 live in their home. This appears to represent a high percentage of large families.

5. Only 20% of the students have attended a school outside of the city of Tulsa. This would indicate that the jobs held by the adults are not of the type that involve many transfers or geographical changes. It also indicates that few black families are moving into Tulsa from other cities or states.

6. The students have a high rate of interstate travel. 75% indicated that they have traveled out of Oklahoma. 37% of the students have traveled to California and an equal number have traveled to surrounding states. From talking with the students, I have determined that many of them have relatives in California that they visit during the summer months.

7. 82% of the males and 62% of the females indicated that they have worked on a job. 70% of these students indicated that they have held a job through the Neighborhood Youth Corp (NYC). I would conclude that many of the jobs held by these students who have indicated job experiences on this survey have been federally sponsored jobs through the NYC program rather than jobs in the competitive business market. The NYC program pays the students to work for short periods of time at a government institution such as a school.

8. 23% of the students are currently employed. Many of these jobs currently held are NYC jobs.

9. 60% of the males indicated that their work experience was in the area of either custodian, laborer, or dishwasher/cook. Only 15% indicated that they have sales/stock work experience.

10. 20% of the females indicated they have sales work experience, and 45% indicated they have clerical experience. Again, this relates to the NYC program influence for it provides clerical jobs for girls.

11. Parents and teachers offered job placement guidance to 35% of the students regarding the students' most recent jobs.

12. 55% of the students have not had more than one job which lasted over two months. This indicates a high job attrition rate.

13. 28% of the males indicated they would prefer sales/stock/customer service type jobs; 22% of the females indicated they preferred sales work. Important to note is that 45% of the females responded that they preferred secretarial-type work.

14. The response to the question, "What type of work did you like the least?" is interesting to note, for 50% of the males and 40% of the females had "no opinion." This would indicate that many of the students have not had enough work experiences to decide that they do not like a particular type job. Many of the males indicated work experience in the custodial-type jobs and to correlate with this fact, 35% of the males responded that they do not like custodial-type jobs. It is important to note that 15% of the females indicated that they do not like sales work. Since only 22% had indicated they had sales experience, this appears to be a high rate of dislike.

15. 67% of the jobs were terminated for the student to return to school. This would indicate that most of the jobs held represent summer employment situations.

16. 21% of the students are undecided as to future work. 25% indicated that they plan to attend college but did not state a major interest field. Sales-related occupations appealed to only 3% of the students.

CONCLUSION BENEFITS

The students have indicated that they have very little vocational interest in the field of marketing, particularly in sales work. They also indicated that they generally have families who are not employed in sales or managerial positions. Most of the students' work experiences involve strictly manual skills as do the majority of their parents' jobs. Thus, I believe that it is my obligation to generate an interest in distributive occupations to the extent that students will consider these occupations to be a future vocational possibility.

One of the best ways to accomplish the task of generating student interest is to help the distributive education students to become successfully employed in meaningful jobs such as cashiers, salespeople, and stockmen. Through positive and interesting job experiences in the distributive occupations during the student's high school career perhaps the involved student will deem important the monetary as well as the social value in remaining in the marketing field.

Editorial Comment:

The survey instrument and techniques of surveying developed in this project can be used by any teacher interested in obtaining a better understanding of his/her student population. One would have to see the complete report of this project to appreciate its usefulness to the director of the project. While we highly recommend this activity, we would also suggest that the individual teachers will get out only as much as they put into the activity.

Title: Teaching Through the Lens of the Camera
Director: Nevaleen Joy Selmat, Vocational Home Economics Teacher
School: Wakita High School
Administrator: Kenneth Cronkhite, Superintendent
State Support: $500.00

Purpose: The purpose of this project was to develop illustrative materials that would supplement textbook information. The project would test the feasibility of students developing the materials. If students could prepare slides and accompanying scripts to illustrate concepts in Home Economics, the development would become a learning experience and the finished product would perhaps be more meaningful to future classes.

The Report:

A textbook often stresses a certain point, but there are no illustrations available. One may find just the right magazine illustration, but how can one share this with a whole class without wasting class time? Talking about the picture when some students have not yet observed it is unsatisfactory. With this question in mind, the writer of the proposal "Teaching Through the Lens of the Camera" hopes to solve part of this problem. The writer also has an educational philosophy that the fundamental purpose of education today is to guide the individual in his intellectual, social, moral, and physical development so that he can become an acceptable world participant. If the educational system can develop students in this way, we will have leaders in the world tomorrow. So how could the writer develop leadership and add important points to the textbook material?

Upon completion of this project, the students will have developed visual aids, through the use of the camera, to share their learning experiences with other students in the years to come. Through demonstrations to their peer group, they will have gained the ability to speak before others, to cooperate with others, and to be more conscious of their appearance and mannerisms as they watched themselves on camera.

The procedures that were used for making this series were: (1) the students were divided into groups or worked individually, whichever seemed most satisfactory for the area to be covered. (2) A topic of discussion or a point that needed added emphasis as believed by the students and the teacher was assigned. (3) Research was then done by the students by use of magazines, textbooks, and other references. As each student read the topic, they took notes that might be used as script for a point of emphasis. (4) An outline was developed for the topic matter. (5) The writers (students) then pooled all their notes and by the use of scissors, tape, and scrap paper developed them into sequence. (6) Then the script was written into a meaningful, continuous story. (7) The students then decided what type of picture would give emphasis to the words that they had written and wrote it on the basic outline sheet that had been developed earlier. (8) The scenes or pictures were then filmed. (9) After the film was developed and returned, it was numbered in sequence, and many times the students would view their work on their own.

Since the time schedule which was originally proposed started in April, but the mini-grant was not received until May, this made the schedule very hard to follow, especially since our school closes very early in May and the writer was involved with closing school activities. Also, after the scripts for filming were written, it required more time to film the scripts than was believed. There were three major factors that contributed to this problem: (1) our town did not have many of the items needed or wanted by the students for the film, which required out-of-town trips...and it was difficult to arrange a schedule of time when both students and teacher could make the out-of-town trip, which of necessity

fell on a Thursday night or a Saturday, (2) a simple camera was not purchased; instead we used available equipment that was borrowed so that more filming could be done, (3) the camera broke when it was critically needed. If this project were tried again, the writer would definitely recommend purchasing an instamatic camera that is easy for the student to operate. A fourth recommendation would be that the pictures all be taken from current magazines rather than trying to take actual pictures or write the scripts during the school year and take the actual pictures on extended employment time of the teacher. The extended employment time of the teacher would permit her to visit "a parade of homes" or open houses in cities (130 miles away as in this writer's situation). If a camera had been purchased perhaps the camera could have been checked out to the students with a roll of film and a mailing processor, putting the full responsibility on them to hand in the edited film script.

The students were definitely interested in this challenge. Some of the scripts were written through group work and some were done by individual effort. The writer found more individual work among the junior high students than the senior high students. Some groups were more successful in working together than others, but here again if we are able to teach students to become leaders in society, they must learn to work with other individuals. The students who did not contribute their share during the filming process were a little envious as some of the slides were shown. They could see they were not directly responsible for filming for the script. It might be well to note through observation this was an especially motivating teaching idea for those slower students in the classroom. One idea that crosses the writer's mind is that everyone likes to see his name in print. The students who prepared the slides were told that they would be kept in the home economics room and we would use their pictures and names to identify the filmstrip with their own captions. They were quite pleased and as some of the scripts were developed in the groups, the writer heard them naming each other as producer, director, writer, and editor, and identifying each of the jobs that they were to accomplish. This was especially noted at the junior high level. The senior high students, in most cases, worked together completing the entire slide production.

Part of the project was also done with a movie camera. A casserole demonstration was filmed and taped on a cassette tape recorder. As the students were filming this, they had to have the tape and camera operating in continuity...so the recorder was placed close to the camera and in the tape you could hear the whirl of the camera. Here we learned that a recorder should be across the room from the camera. The movie camera was also used to film the style show. Through this film the girl can actually evaluate herself as to what poise she has and also notice any undesirable mannerisms she might have used. The showing of this film to the group brought many comments from the students and practically every student said, "Why did I do such a thing? I'll remember not to do that and try to break the habit."

The movie camera was used to develop a roll of film on the "Do's and Don't's" of what you should or should not do. For two days while the student teachers were teaching the class, the writer moved around the room taking shots of such things as how to measure the flour and how not to measure the flour. These were taken as the students were doing the various things in the classroom and were not posed or planned shots. Needless to say, when this film was shown, many students were surprised that the teacher's camera eye had caught their mistakes. This filming was done with a movie camera without lights so it was easy to do.

The demonstration table that was requested to be built took on another question of importance. Just what type of table did we need to demonstrate our products on and

film these products? The students listed the following criteria the demonstration table would need to meet: (1) of usable height so that it would be comfortable to work from, (2) a height so that pictures could be taken on an even level, (3) it should contain a plug-in on the table so that electrical equipment could be used without worrying about cords, (4) it should have a top with a pretty soft color that would either be of material or dull paint; (5) it should be easily moved, (6) it should contain some of the items necessary for food demonstrations, (7) it should provide a slanting-top mirror so that all students could see into the bowls or the product that was being demonstrated, (8) and storage space for necessary articles. With this in mind, the students located illustrations of the various ideas to be built into the table.

Through the use of the camera, the writer believes the students did develop more poise, initiative, self-confidence, and greater understanding of subject matter than could be taught through a typical classroom situation. It is true that many of our films are not of expert quality, yet each has a point. The students used short commentaries for each slide that was photographed. I think this should tell us that students are more interested in being active and doing things in a faster way. The writer attributes this to the pace of life in our homes today. As teachers, this might also have a meaning to our lesson plans. They want to do something, be active, learn with their hands and eyes and mind at the same time.

The films are now in the process of being filed and stored in the home economics classroom for use with classes next year. Next year, the writer hopes to have the students evaluate some of the filmscripts on these points: (1) Were they interesting? (2) Did the student learn something new? (3) Were they colorful and attention getting? (4) Did the film slides make this a more meaningful experience?

Certainly these slides will be valuable to use next year and for several years to come because many of them are on topics for which there are no listings in the film catalogs or are too expensive, and also because they will be available on the specific day of the lesson and will not have to be shown a month before or several months after the lesson has been covered.

This project has been so interesting and worthwhile that we plan to continue filming some other units as time permits. Our school recently purchased a camera set which will enable the writer to film pictures from magazines on slides. All of the films may not be of professional quality, but they will be developed by students who are interested and have pride in their work.

Scripts and illustrations accompanied the report on this project. Subjects which were covered include:

1. "A Spot of Beauty" (Concerning flower arrangements)
2. "The ABC's of Landscaping"
3. "Accessory ABC's"
4. "The Art of Wardrobe Planning"
5. "Artistic You"
6. "Care of Clothing"
7. "Casserole Demonstration"
8. "Collection of Decorating Ideas"
9. "Collection of Storage Ideas"
10. "Collection of Table Setting Ideas"

11. "Do and Don't Film"
12. "Don't Plan to Build Trouble" (Ideas in home planning and building)
13. "The Fashionable You"
14. "Lines for You" (How to choose flattering clothes)
15. "Of Course You Would" (Clothes for formal, semi-formal and informal occasions, manners, protocol at a dance)
16. "Our World, FHA and Girls" (Style Show film)
17. "Posture"
18. "Right or Wrong, That's the ?" (Decorating tips)
19. "Toys" (Toys for small children)
20. "Toys in Child Development"

Editorial Comment:

That this project was worthwhile and that the technique works for this teacher is obvious when one evaluates the entire report. Unfortunately, the usefulness of this technique is not generalizable. However, the results obtained here should be ample encouragement to others who may be interested. It is recommended that a project with a controlled research design be undertaken to verify what seems to be a most promising and useful teaching technique.

Title: The World of Polyester Resin
Director: John M. Duncan, Cabinetmaking Instructor
School: Central High School, Tulsa
Administrator: M. J. Ruley, Director of Vocational and Industrial Education, Tulsa Public Schools
State Support: $500.00

Purpose: The purpose of this project was to develop a unit on fiberglass products for addition to the regular cabinetmaking curriculum.

The Report:

The Mini-Grant Project, "The World of Polyester Resin," has been of great educational value. It has been the framework in which fourteen students of the Vocational Cabinetmaking Class, Tulsa Central High School, have learned the basic skill and operation involved in fiberglass lay-up.

The students have had experience in the construction of fiberglass molds, preparation of the mold for the lay-up, spraying of gel coat into the mold, and the lay-up of the item in the mold.

Projects were to be developed for three different levels of complexity. The first level was a product that consists of only one part. Items made at this level included a fiberglass creeper, a boat seat, and a trailer fender.

The second level was products that consist of two parts which are fused together to make the finished product. No suitable products were developed at this level. Instead, small fiberglass repair work was taught along with fiberglassing the outside of a wooden boat.

The third level was a project that consists of a number of parts which, when fused together, will make the finished product. An eleven foot kayak and a seventeen foot canoe were selected as projects for this level. In all, the class completed 2 kayaks and 6 canoes during the project.

Information sheets and operation sheets are included with the report.

Editorial Comment:

A follow-up of this project should be undertaken to disclose the usefulness of this training to students--in terms of salable skills. Questions which were not answered in the report include: Can students become proficient enough to obtain jobs in related areas? Are jobs available? What is the cost to a school to establish such a unit of training? What effect does this additional unit have on the employability of the students in the more traditional area of cabinetmaking? What additional training is required of the instructor in order to teach the unit? Although this project seems to have had some success, it would be difficult to evaluate the project without answers to the questions raised.

Title: Training in Design, Layout, and Construction of Metal Structures on Site
Director: Raymond B. Keener, Vocational Agriculture Instructor
School: Boswell High School
Administrator: J. L. Sargent, Superintendent
State Support: $1,000.00

Purpose: The purpose of this project was to provide actual experience on-the-job in design, layout, and construction of metal structures. This would solve a training problem of providing on-site experiences in a real job situation, providing the students practical training they cannot receive in the shop.

The Report:

In order to provide such experience, a project was undertaken to design and construct an all-steel rodeo arena, parking area, bleachers, band stand, and officials stand. The Boswell Public Schools furnished the materials. The mini-grant paid for student labor after school, rental of portable welders, and fuel. The Vocational Agriculture Instructor provided instruction and supervision of the program.

Students received practical experience in the design and on site construction of metal structures. Experiences included:

1. Design and layout of rodeo arena, grounds (including parking area), fences, entrances and exits, stock holding pens, catch pens, stripping chutes, calf release chutes, bucking chutes, working aisle, working platform, loading chute, sliding chute gates, and swinging chute gates.

2. On site construction of items listed above provided experiences in the following skills:

   a. Servicing and operation of oxy-acetylene unit in cutting and fitting steel plates, angle iron, channel iron, pipe, and tubing.

   b. Servicing and operation of portable welders on various thicknesses and types of metal in the flat, vertical, and overhead welding positions.

   c. Mixing, pouring, and finishing concrete.

   d. Operation of land leveling devices including scraper, blade, scoop, and chisel.

The following conclusions and recommendations were reported by the Vocational Agriculture Instructor and the Boswell Superintendent of Schools:

1. The program provided students with learning experiences not available in any other type of training program, enabling those students to use these skills on their home, farm, and/or local industries.

2. Students developed a sense of pride of accomplishment of a job well done and having a hand in helping the school and community.

3. The program provided an opportunity for students to earn while learning.

4. The Vocational Agriculture program greatly benefited by securing facilities to carry on an activity that will provide leadership, job experiences, and wholesome recreation for students and the community.

5. The local community recognizes and appreciates the accomplishments of this program.

6. Based on experiences of the local directors, school administrators, and the favorable comments of the local patrons, it is recommended the program be continued with similar types of projects.

Editorial Comment:

The Research Committee which approved this project probably failed to realize the extent of the project or the particular emphasis in instruction. We were attracted to the project because of the possible implications for training in use of portable welders that could lead to jobs in the agriculture mechanics field. The final report did not indicate that the training received by the students would be transferable to situations such as might arise when farm machinery breaks down in the field. The diversity of experiences received through the project could lead to the conclusion that skills were not taught in such depth as necessary to make the student employable. On the other hand, if students worked primarily in speciality areas, then training could have been sufficiently in depth to provide manpower for a variety of jobs. The results seem to indicate the project was worthy in terms of public relations, exploratory training, and community service. The recommendation to continue such a program is not substantiated in terms of the purposes of vocational education. A follow-up of the ten students involved in the project would be valuable in the evaluation of this project.

Title: Video Tapes in Occupational Exploration for the Handicapped Student
Directors: Joe Amos, Distributive Education Teacher-Coordinator
Bill Hicks, Director of Curriculum
School: Blackwell High School
Administrator: Dr. George Rowley, Superintendent
State Support: $500.00

Purpose: To develop a series of video tapes for use in a pre-employment class for handicapped students. The tapes would be devoted to specific occupations and would be filmed at the job site with the cooperation of local industry and business.

The Report:

Introduction

At the time our mini-grant proposal was written, we planned to have a class in Special Education at the high school level.

This class, however, was postponed for one year. The class will begin September 1, 1972.

We did, however, proceed with making the video tapes which could be utilized in our Junior High School Occupations Classes, High School Distributive Education Classes, and our Office Practice Class at the high school.

With our $500.00 mini-grant fund we were able to purchase the necessary tapes for use with these classes.

Procedure

We first identified occupational areas of greatest interest for the students.

We then contacted individuals in our community currently employed in these occupational areas. In most instances, these individuals were quite willing to cooperate by allowing our camera crew and class instructors to record an interview and the actual work involved in their occupation.

These tapes, when completed, were then used in the vocational classes through the closed circuit system and by placing the recorder and a television receiver in the classroom at the Junior High School.

Several of these films were made by inviting the individual to our class, recording an interview session, allowing students to ask questions concerning the various occupations, and using this tape for other classes.

Blank tapes have also been maintained for practice job interviews, etc. These tapes, of course, can be re-used many times.

Evaluation

The use of video tapes and equipment in our vocational classes has been quite exciting and rewarding. This project has proven that most occupations can be filmed and studied in-depth.

Plans are now underway to complete the tapes for the mini-grant project, and also to make additional tapes next school year from the general fund.

Any school system wishing to use these tapes may do so by writing:

Bill Hicks, Curriculum Director
P.O. Box 580
Blackwell, Oklahoma 74631

Equipment needed: 1/2 inch video tape player-recorder which meets the EIAJ-1 standards.

All tapes are black and white only.

Tapes completed:

Jobs in Insurance
Work of the Highway Patrol
Jobs in Banking
Jobs in Teaching
The Job Interview
The Automobile Mechanic
Advertising (Distributive Education)
Sales Demonstrations (Distributive Education--State Contest)
Sales Demonstrations (State Finals)
Work of the Pharmacist
Work of the Dentist
Drug Abuse and the Job--Part I
Drug Abuse and the Job--Part II
Work of the Oklahoma State Employment Service

Films to be completed

Cosmetology
Jobs in Nursing
Jobs In Carpentry
Jobs in Food Service
Jobs in Broadcasting
Office Manners

Editorial Comment:

While the directors were not able to develop the tapes for handicapped students, they were able to test the usefulness of the tapes, the procedures, cost of production, and time required to prepare the completed tapes. Although no supportive data are included in the report regarding effects on students, empirical observations have led to support of this project on a continuing basis from the general fund of the school district. A follow-up needs to be made to see if the tapes are used in other schools, and how useful they would be in schools where the content of the video tape is not from local industry.

Title: Vocational Occupational Orientation for Parents
Director: Billy R. Forgey, Vocational Agriculture Instructor
School: Wellston High School
Administrator: Eugene C. Hill, Superintendent
State Support: $250.00

Purpose: The purpose of this project was to study the usefulness of vocational orientation classes for parents.

The Report:

After our mini-grant project was approved in April, plans were formed to start the programs in October, 1971. Resource personnel were contacted to present five of the programs. These included: Blan Sandlin, Director of the Guidance, Counseling & Testing Section of the State Department of Education; Dr. Bill Stevenson and Dr. Charles Hopkins, Director and Planner respectively of the Division of Research, Planning, & Evaluation, State Department of Vocational and Technical Education; Miss Yvonne Bender, Assistant State Supervisor, Health Occupations Education Division, State Department of Vocational and Technical Education; Doyle Edge, Career Specialist, Mobile Career Development Project; and Paul England, Counselor, Oklahoma State Tech, Okmulgee.

In September, the parents were contacted personally by the director and encouraged to attend the classes. The classes started October 11, 1971, with Blan Sandlin presenting the first program. The classes were held each Monday evening with the exception of holidays for ten Mondays. The final program was held January 10, 1972.

From the comments that were received, almost everyone enjoyed the classes and the information which was presented concerning the field of work and the many occupational choices available for their children. Demonstrations of the WISC (Wechsler Intelligence Scale for Children) and the WPPSI (Wechsler Preschool and Primary Scale for Children) were presented at two meetings and the value of IQ tests was explained. The Kuder Vocational Interest Test was administered to some students and explained to the parents regarding its usefulness to students in the selection of a vocation.

The program was very informative for those who attended, but attendance on the parents' part was very poor. A total of 26 parents attended the classes, but only two attended all ten classes while two attended only one class. The average number of classes attended was slightly over five. The number of parents attending each class averaged 13.6 with a low of 8 parents attending the meeting November 29, and a high of 19 parents attending the third class on October 25. It seems that the parents who needed the information most never attended. The parents of the possible dropout student seemed least interested in being oriented about occupational choices for their children. If such a program is held again, I would suggest working with parents whose children are in the lower grades. I believe that parents of children in K, 1, and 2 might be more receptive. It seems imperative that occupational information for the student should be started at an earlier age.

The following topics were discussed in the classes:

October 11	"Preparing our Youth for a Career after Graduation" Blan Sandlin
October 18	"Job Projections in the Future" Bill Stevenson and Charles Hopkins

October 25	"Learning Skills and Trades" Paul England
November 1	"Information on Health Occupations" Yvonne Bender
November 8	"Kuder Interest Inventory" (Administration of test) Billy Forgey
November 15	"Educational Requirements for Certain Jobs" Doyle Edge
November 29	"Kuder Interest Inventory" (Administration of test) Billy Forgey
December 6	"Evaluation of the Kuder Interest Tests" Billy Forgey
December 13	"WISC and WPPSI Intelligence Tests" (Administration) Billy Forgey
January 10	"Intelligence Test Evaluation. How Important is an IQ Score" Billy Forgey

Everyone enjoyed taking the Kuder tests. We were very informal and parents were interested in their own profiles.

On December 13, we selected some elementary school students and administered the WPPSI to Kindergarten students and the WISC to 3rd and 4th grade students. Parents observed the administration of the tests. We did not disclose individual scores, but discussed the ranges the student scores were in. The parents of elementary students were so interested in this particular subject that we covered it in more depth than had been originally planned. Their interest led to our recommendation that parents of elementary children might gain more from this type program than parents of older students.

Editorial Comment:

It is doubtful this project added anything to the research literature since no indication is made of change in parents or students resulting from the project. The importance of the project seems to lie in the fact that it calls to the attention of educators the need for including parents in the total career education program of the school. The current literature on career education very often fails to recognize the parent.

SUMMARY AND CONCLUSIONS

Twenty-four mini-grant projects funded to teachers and counselors in Oklahoma in 1971 are reported herein. Ten of these proposed to develop curriculum materials. Three have had extensive dissemination throughout the State and others will have distribution during the 1972-73 school year.

Five projects resulted in new programs or a new unit in an existing program. Seven others resulted in development of techniques new to the investigators. The techniques were applied in existing programs to improve the teaching-learning process.

Eight of the projects resulted in improved public relations and/or development of public relations materials.

Five projects sought to obtain information through surveys or trips to other states. Information obtained in one trip was disseminated to Trade and Industrial Teachers at the 1971 Summer Conference. Another trip led to initiation of a new program.

Two projects proposed to test the usefulness of commercially prepared materials.

Eighteen of the investigators were successful in reaching the objectives proposed in their projects. Four investigators, including one who attained objectives, have not completed their projects. All four are continuing with the project without additional State support. Three investigators failed to reach objectives of their proposals, but one drew up new objectives to meet the unexpected change in curriculum and satisfactorily salvaged the project. Five projects were determined to be unsuccessful although two of them attained the objectives with disappointing results.

The empirical evidence at this point in the project leads to two major conclusions:

1. Vocational teachers and counselors are competent in conducting research and development projects which lead to improved practices in their teaching.

2. The mini-grant program is a most efficient and economical technique for use as a change catalyst.

The mini-grant program not only gives incentive to the teacher, but also seems to encourage the administrator to support the teacher's efforts. Because of the incomplete and weak evaluations, no conclusions were made regarding the relations of changes to improvement in teaching.

Several recommendations can be made based on the editor's experiences with this project:

1. The Oklahoma State Department of Vocational and Technical Education should be encouraged to offer a mini-grant program each year as an incentive to teachers to test innovative ideas.

2. Mini-grant projects should be no longer than one year in duration with a $1,000 funding limit.

3. Contracts should be drawn between the State Department and the investigator which specify responsibilities of the investigator regarding evaluation, reporting, and other grant conditions appropriate to each individual project.

4. A workshop, probably one-half day in length, should be held with all investigators to explain grant conditions, procedures, and reporting requirements.

5. Emphasis should be placed on research and development processes in the Request for Proposals. Proposals should be funded only if there is expectation of generalizable results, e.g., new information or confirmation of some practice which could be used in more than one situation.

6. Proposals should be reviewed at regular intervals, e.g., quarterly, to encourage teachers to submit proposals when they have the idea or when the opportunity to test an idea is present in the local school.

APPENDIX

PROPOSAL FOR PROGRAMS OR PROJECTS SUBMITTED TO THE
OKLAHOMA STATE BOARD FOR VOCATIONAL-TECHNICAL EDUCATION
FOR SUPPORT UNDER THE VOCATIONAL EDUCATION AMENDMENTS OF 1968

Title: MINI-GRANTS, 1970-1971--TEACHERS WITH IDEAS IN ACTION

Applicant Organization: Division of Research, Planning, and Evaluation
Oklahoma State Department of Vocational and Technical Education

Program Director:

Dr. Wm. D. Frazier, Director
Research Coordinating Unit
State Department of Vocational and Technical Education
1515 West Sixth Avenue
Stillwater, Oklahoma 74074
(405) 377-2000, Ext. 265

Transmitted By:

Dr. William W. Stevenson, Assistant State Director
Head, Division of Research, Planning, and Evaluation
State Department of Vocational and Technical Education
1515 West Sixth Avenue
Stillwater, Oklahoma 74074
(405) 377-2000, Ext. 265

Duration of Activity: April 20, 1971, to June 30, 1972

Total State Funds Requested: $14,206.50

Date Transmitted: April 20, 1971

Problem and Objective

Schools always seem to need more money! Because school budgets are tight, most of the funds available for education are budgeted at the beginning of the school year. This procedure restricts teachers to a preplanned and probably "lock-step" year's activities. It seems obvious that problems must arise during the year. It also seems obvious that creative teachers must have some solutions to those problems which arise. However, not all solutions will be free of additional costs in the experimental stages.

The purpose of this project is to give teachers "seed" money to develop new and innovative ideas--the objectives being to improve teaching methods, techniques, materials or resources, and/or other facets of vocational and technical education.

Description of Activities

1. Establishing the Program. In January, 1971, the RCU put out a call through the VEIN requesting short proposals from vocational or technical teachers and counselors. (See appended announcement.) Proposals were to be limited to a budget of no more than $1,000. From this request, seventy-three proposals were received before the deadline of February 15, 1971.

The review committee consisting of the four Unit Heads and the Head of the Division of Research, Planning, and Evaluation read and evaluated separately each of the seventy-three proposals. Proposals were divided according to the program area with which they dealt, and the review committee met with the appropriate State Supervisors to reach a final decision regarding the approval of proposals for funding. A total of twenty-four proposals were approved. Eight were tabled because of minor deficiencies and until more funds are available; five were referred to a different funding source; and thirty-six were disapproved. A listing of the approved projects is also appended.

2. Operating the Program. Projects will be approved as of May 1, 1971--but with starting and ending dates appropriate to each individual proposal. All projects will be under the supervision of appropriate members of the State staff. Budgets will be administered by requisition through the Finance Director with approval of the RCU Director. The RCU Director will have general supervision over research aspects of each proposal, assist with data analysis, and collect and approve project reports. All projects are to be completed before May 31, 1971. The RCU Director will be responsible for summarizing, editing, and completing a final report to include all twenty-four projects.

3. Expected Outcomes. It is anticipated that each of the proposals approved will result in a report that would have practical applications to other teachers or counselors in similar situations.

4. Evaluation. Success of the total project will be based on success with individual projects. The criterion is set at fifty percent. If twelve of the projects produce information, techniques, curricula, etc., which are demonstrated to be of use to other teachers, the project will be considered successful. Evaluation is not, because of time limits, a specific part of this project. The RCU will, during fiscal 1973, attempt to keep a record of requests for results of these projects. A simple instrument will be developed to obtain responses regarding use of the results from those teachers who make the requests. These responses will be tabulated to see if the fifty percent success criterion was met. An additional report will then be prepared in June, 1973, giving evaluation of the project.

5. Where a curriculum or curriculum materials are developed, results will be delivered to the State Department Curriculum Center for appropriate distribution. Other results will be distributed through VEIN or individual reports to selected teachers as appropriate.

Personnel and Budget

Because of the nature of this proposal, the personnel and budget section is combined in order to list each individual project director, his area of study, and funds approved for the project.

1. Billy R. Forgey, Vocational Agriculture Instructor, Wellston
"Vocational Occupational Orientation for Parents"
$250.00

2. Charles Hathaway, Vocational Agriculture Instructor, Tahlequah
"Forestry Training for NYC and Work Study Students"
$1,000.00

3. Raymond B. Keener, Vocational Agriculture Instructor, Boswell
"Training in Design, Layout, and Construction of Metal Structures on Site"
$1,000.00

4. Christie Byrd, Jr., Distributive Education Teacher-Coordinator, Nathan Hale, Tulsa
"Student Motivational Aids for the Bulletin Board in Distributive Education"
$486.00

5. Eleanor M. Hrabe, Distributive Education Teacher-Coordinator, Central Oklahoma Area School, Drumright
"Curriculum Development for Project Distributive Education Programs in Area Schools"
$825.00

6. Wayne Richardson, Assistant Superintendent, Bartlesville
"Development of a Proposal to Implement a Course in Distributive Education in Grades 8 and 9"
$720.00

7. Frank Morrison, Distributive Education Teacher-Coordinator, College High, Bartlesville
"Slide Series for Visual Merchandising Unit of DE II"
$635.00

8. Ralph P. Schneider, Project Director, Manpower Program, OSU Technical Institute, Oklahoma City
"Feasibility and Design Calculations of Training Aids for Environmental Health Occupations"
$500.00

9. Marie Fleming, Vocational Home Economics Instructor, Stillwater
"Development of a Plan for Teaching Family Finance to Adults"
$425.00

10. Velta Reed, Vocational Home Economics Instructor, Washington
"Development of Curriculum and Evaluation of Materials for Boys Family Living Class"
$300.00

11. Nevaleen Joy Selmat, Vocational Home Economics Instructor, Wakita
"Teaching Through the Lens of the Camera"
$500.00

12. Betty C. Fry, Cooperative Office Education Teacher-Coordinator, Will Rogers, Tulsa
"Expansion of Public Relations of the COE Program"
$120.00

13. Mary Ann Hicks, Cooperative Office Education Teacher-Coordinator, Norman
"Office Skills Used on the Job"
$500.00

14. Ellen Lowrey, Cooperative Office Education Teacher-Coordinator, Indian Capital Area School, Muskogee
"A Text-Correlated Cassette Tape Program to Improve Typing Speed and Accuracy"
$137.50

15. Kenneth J. Eger, Assistant Professor, Radiation and Nuclear Technology Department, Oklahoma State University, Stillwater
"Individually Prescribed Instruction for Radiation Measurements"
$750.00

16. Freida Ann Jones, Head, Department of Industrial Chemistry Technology, Eastern Oklahoma State College, Wilburton
"Promotion of Industrial Chemistry Technology in Oklahoma"
$900.00

17. Russell Kline, Instructor, Industrial Drafting and Design Technology, OSU Technical Institute, Oklahoma City
"Cooperative Teaching for Machine and Tool Design"
$500.00

18. Dale Sare, Instructor, Data Processing, Cameron College, Lawton
"Lab Manual of Practical Business Data Processing Problems"
$850.00

19. John M. Duncan, Vocational Cabinet-Making Instructor, Central, Tulsa
"The World of Polyester Resin"
$500.00

20. John A. Girdner, Carpentry Instructor, Tahlequah
"Student Learning Package"
$718.00

21. Douglas Morris, Welding Instructor, Southern Oklahoma Area School, Ardmore
"Summer Institute or Workshops for T&I Welding Teachers"
$590.00

22. Kay Smith, Cooperative Vocational Education Instructor, Booker T. Washington, Tulsa
"Survey of Student Attitudes Toward Vocational Opportunities and the Business World"
$500.00

23. Odetta Lewis, Counselor, Edison, Tulsa
"Simulation: A Painless Way to Help Adolescents Improve Life Career Decisions"
$1,000.00

24. Joe Amos, Distributive Education Teacher-Coordinator and Bill Hicks, Curriculum Director, Blackwell
"Video Tapes in Occupational Exploration for the Handicapped Student"
$500.00

Total Projects: 24

Total Budget: $14,206.50

EXCERPT FROM VEIN, January 29, 1971

A N N O U N C I N G

"Teachers With Ideas in Action--Mini-Grants, 1971"

What could you do with $500 to spend as you please to improve your vocational or technical education program? Would you hire a teacher-aide for a month to see if you could give more attention to your disadvantaged students? Would you build a better gadget to demonstrate some learning concept to your students? Or would you hire a special resource consultant to work with your class on some particularly sticky problem? Well, these ideas are not necessarily new or innovative, but some vocational or technical teachers or counselors have some good ideas--surveying community needs for people with the skills you are teaching, or putting on a public relations drive for your program.

The Oklahoma RCU will fund twenty or more mini-grants this year for teachers to test their ideas. Funding limit is $1,000; however, in order to fund 20 projects, we will need to support at an average level of $500. In order to be eligible, you must be a practicing vocational or technical teacher or counselor and have direct contact with vocational or technical students.

We are looking for fresh, new, innovative ideas. Requirements are simple. If you think you have a good idea, but need a little money to help get it off the ground, just fill in the attached Mini-Grant Proposal Form describing the activity and how much it will cost and send it to the address indicated in the instructions.

If your proposal is one of these chosen, funds will be made available to you this year. All we ask in return is that you make a brief report of the results of your activity when it is finished so that we may make the results available to other teachers who desire to improve their programs. Projects must be completed and a final report submitted within one year following approval of the project.

Instructions for preparing the mini-grant proposals are on the back page of this newsletter. We don't want any elaborate proposals (use the form--it's only two pages long). We just want you to have an opportunity to try out that idea you've been thinking about. So don't put this off, lay it aside, or misplace this announcement--but get your proposal in now. Good luck!