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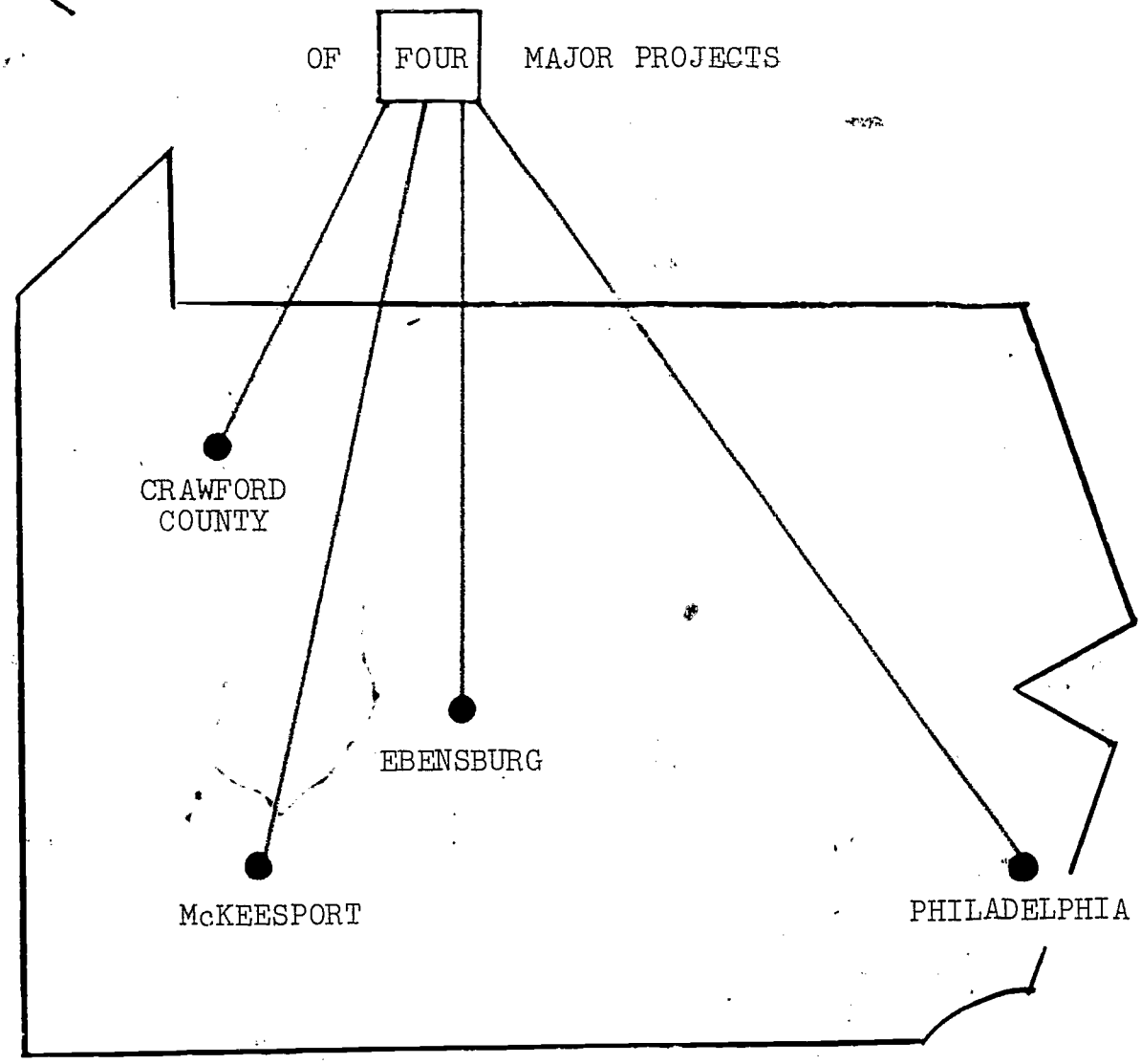
ABSTRACT

The evaluation report for the 1973-74 project year examines Pennsylvania's four major career education projects. The grade 10-14 component at Edenburg focuses on identifying 20 career areas, identifying behaviorally described skills required for the various occupations, developing the required skills through the use of tasks, modules, and units, and using computer hardware and software to manage the system. The elementary component in Crawford County focuses on integrating career and self-awareness with baskc K-6 academic materials, exposing students to a range of career clusters, individualizing students' learning programs, and using existing computer facilities for storing and retrieving career oriented curricula. The junior high component in Philadelphia focuses on fusing career education concepts, experiences, and resources into existing curricula, providing career exploratory experiences, providing an effective guidance and counseling program, and developing a Career Education Resource Center. The K-12 component in McKeesport focuses on a series of career oriented assumptions: reality-bound assumptions, self-oriented assumptions, and personalized assumptions. In general, each evaluation describes the program and the means of evaluating program objectives, summarizes the evaluation effort, and provides conclusions and recommendations. Appendixes (50 pages) provide additional materials relevant to the respective evaluations. (JR)

CAREER EDUCATION IN PENNSYLVANIA:

THE SECOND YEAR EVALUATIONS

OF FOUR MAJOR PROJECTS



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CAREER EDUCATION IN PENNSYLVANIA: THE SECOND YEAR EVALUATIONS OF FOUR MAJOR PROJECTS

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The second year's evaluation report, as that of the first year, includes synthesized versions of the evaluations of Pennsylvania's four major career education projects. Having had the privilege of coordinating and preparing the first year's final report, I consider it an added privilege to have played a major part in preparing this report. I realize this evaluation could not have been completed or even reported without the help and assistance of a number of people. Indeed, for much of the evaluative content, I am indebted to the following individuals: Dr. Robert Connors, Dr. Martin Higgins, Dr. Ernest Peters, Mr. Raymond Webster, and Dr. Robert Zanotti.

In addition to those already named, I express my sincere appreciation to the following project directors for their cooperation throughout the evaluation period: Mr. Stanley Cohn, Dr. Henry Durand, Dr. Edward Lareau, Mr. David Minnis, and Mr. James Peters.

Finally, I am grateful for the assistance and cooperation rendered by Dr. Carroll Curtis, Dr. Clarence Ditenhafer, and Mr. James Lewis, all members of the Research Coordinating Unit of the Pennsylvania Department of Education.

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Third Party Evaluator- Coordinator
August, 1974

PREFACE

On November 16, 1972, Dr. John W. Struck, Pennsylvania State Director of Vocational Education and Mr. John C. Pittenger, Pennsylvania Secretary of Education, submitted a "Letter of Assurance" to the Associate Commissioner of Adult, Vocational and Technical Education which read as follows:

> In response to your policy paper number AVTE-V72-11 dated August 29, 1972 regarding provisions for research and development programs in vocational education for Fiscal Year 1973, we are submitting this letter of assurance... prepared in accordance with the guidelines provided in the policy paper.
>
> We intend to develop, test, implement and expand Pennsylvania's career education activities in four local school systems: (1) Crawford County (Meadville), (2) Philadelphia, (3) Ebensburg (Admiral Peary AVTS) and (4) McKeesport. These sites were selected because of a previously and currently expressed commitment to career education as demonstrated by the success of last year's Part C demonstration projects and the potential for generalizing and diffusing the various career education components of these projects to other selected school districts within Pennsylvania and the nation. Economically and geographically, the above sites represent a combination of rural and semi-urban districts in Northwestern Pennsylvania, the largest Metropolitan area in the state (southeastern Pennsylvania), a Southcentral industrial-commercial center and a large industrial complex southeast of Pittsburgh, Pennsylvania ("Letter of Assurance," The Pennsylvania Department of Education, November 16, 1972).

In addition to the above commitment, the Associate Commissioner was assured that a Third Party Evaluator would be engaged to assess the overall effectiveness of the four selected Career Education Projects, and that the evaluator would work independently of the Research Coordinating Unit of the Pennsylvania Department of Education. In compliance with this regulation, therefore, the Evaluator and Coordinator of the Third Party Evaluation is submitting herewith the second of three evaluation reports. Since each of the

Project sites has a uniqueness of its own, it is to be expected that differences will occur - as they do in this report - in the evaluative design, methodology and reporting style of each of the four evaluations. Yet, despite these variations, the integration of Pennsylvania's four career education evaluations into one report does at least two things: (1) It reduces into a synthesized, manageable, and usable document what might otherwise have been four separate, voluminous evaluations; and (2) it enables the Coordinator to document, in one place, the commonalities and/or disparities which exist between and among the four Projects, thus giving more focus and direction not only to what has been learned, but also to what has yet to be learned from the various participating schools.

In order to insure that sufficient attention will be given to the purposes and objectives of each of the four Projects, as well as their distinct differences in implementation and evaluation strategies, each Career Education Project will be dealt with in a chapter of its own and supported by appropriate appendices. Thus, having established the rationale for this evaluative report, it is now time to present the evaluations of Admiral Peary Area Vocational-Technical School (Ebensburg, Pennsylvania), Crawford County Schools (Meadville, Pennsylvania), Cooke Junior High School (Philadelphia, Pennsylvania), and McKeesport Area School District (McKeesport, Pennsylvania).

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SUMMARY

June 1, 1973 through September 30, 1974

INTRODUCTION

Pennsylvania's career education pilot activities were developed in four sites; that is, Ebensburg, Crawford County, Philadelphia and McKeesport. The activities at each site were developed and coordinated through the Research Coordinating Unit in the Pennsylvania Department of Education. Dr. John W. Struck, State Director of Vocational Education in Pennsylvania, was the project director. Specific programmatic segments of career education were developed at each project site. Thus, each site's activities are treated separately in this summary and the subsequent annual report.

GOALS AND OBJECTIVES

Ebensburg (Admiral Peary AVTS): 10-14 Component

- Expand TIME scheduling model into the business education departments of six sending high schools.
- Provide career education in-service activities for faculty and counselors.
- Further develop appropriate guidance materials using DOT as a focal point.
- Refine placement procedures.
- Refine and expand DOT Program of Study sheets.

Crawford County: Elementary Component

- Develop additional computer-oriented curricula around three occupational clusters.
- Revise existing units developed and implemented during the project's first year.
- Implement the revised units in pilot schools.
- Increase the number of schools, personnel and students involved in the career-oriented curriculum.

- Provide in-service training for teachers desirous of using the career curriculum.

- Evaluate the effectiveness of the project's activities.

- Develop a system for disseminating the curricula to other Pennsylvania school districts.

Philadelphia: Junior High Component

- Provide career orientation and meaningful exploratory experiences for all students at Jay Cooke Junior High School.

- Develop program activities to increase self- and career awareness of each student.

- Develop a career educational partnership between the school, community, business and industry and other educational institutions accessible to Jay Cooke Junior High School.

McKeesport: K-12 Component

- Provide self- and career awareness activities in the elementary grades.

- Provide career exploratory experiences in the junior high grades.

- Provide career preparation and placement in the senior high grades.

PROCEDURES

Ebensburg (Admiral Peary AVTS)

The project utilized the TIME scheduling concept (Temporally Individualized Modular Education), a flexible scheduling arrangement. TIME scheduling is based on an educational module approach wherein a student's chosen curriculum is synthesized from various modules. The student is allowed to proceed through the modules at her/his own rate. Thus, a student completing a module early may proceed to another module. Conversely, a student requiring more than the allotted time for a module will be rescheduled to finish the module at her/his own rate.

Practicum modules for the academically-oriented students were provided in areas where existing learning experiences did not suffice. Job- or work-experience modules were

provided wherever available and appropriate. For the vocational-technical student, beginning modules in all programs were basic skill modules teaching preliminary occupational skills for specific career areas.

Crawford County

The project focused on the elementary component of career education. It stressed the process of increasing the career awareness of elementary students in terms of the broad spectrum of options open to them in the world of work. The project concentrated on the continuation, expansion and diffusion of a model computer resource, career-oriented curriculum at the K-6 level. The curriculum was developed around occupational clusters by teams comprised of teachers and guidance counselors with input from consultants and an advisory committee.

The primary goal of this project is to continue to develop and implement a model computer resource, career-oriented curriculum for use at the K-6 level. This curriculum will focus on the following needs of elementary level students: (1) career awareness, (2) self-awareness, and (3) personal, social and economic significance of work.

Philadelphia

Field orientation and exploration constituted a significant part of the Philadelphia program. Students were given first-hand opportunities to learn about the world of work. The program included basic information regarding the "ABCs" (15 job clusters) of the world of work, walking and motor tours to business and industry as well as hands-on experience in supporting business offices and industrial shops. Career education specialists were employed to arrange for exposure tours, career discussant representatives of supporting business and industry.

Attempts were made to operate academic-support programs in English, language arts, foreign languages, social studies, mathematics, science, art, music and physical education in the career education context.

The use of career implications throughout the basic education program helped children by enabling them to achieve mastery of academic skills and provided them with more accurate information concerning a side range of career development opportunities.

The teachers, counseling staff and career development specialist were given in-service training on the concepts

involved in the project. Consequently, the program featured a strong career counseling and guidance component.

McKeesport

The McKeesport project focused upon the development, operation, testing, expansion and diffusion of a comprehensive career education program K-12. Emphasis was placed upon developing a model that was adaptable by other school districts.

The following elements were included in the project: (1) occupational orientation, (2) manipulative "hands-on" activity, (3) roleplaying, (4) field trips, (5) resource persons and (6) subject matter tie-in. At all grade levels these elements were concurrent, overlapping and followed no specific sequence within the unit activities. However, emphasis shifts occurred as the program progressed from the elementary to the junior to the senior high levels.

EVALUATIVE RESULTS

Ebensburg (Admiral Peary AVTS)

- Minimal utilization of the TIMES system was evidenced in the business education courses in the six sending schools. Attitudinal and unforeseen mechanical problems with computer hardware were cited as reasons for the minimal implementation.

- A considerable number of curriculum materials for TIMES were developed during the year. The rate of development was somewhat less than experienced in the first year.

- The addition of sophisticated software and hardware systems should alleviate some of the problems experienced during the project year.

- Classroom environment was observed to contain student and teacher behaviors conducive to a good teacher/learner atmosphere.

- The validation of student outcome behaviors was found to be very good in the academic and service areas. However, in other areas there were some problems. The validation procedure was valuable because it assisted teachers in evaluating their students and themselves.

- The TIMES concept has allowed students to achieve a level of career maturity beyond what their academic abilities would warrant (as measured by the various skills of the career maturity inventory.)

Crawford County

- The direct instruction of children with the nine revised career education units increased student awareness concerning career orientation and the world of work as compared to students not receiving such instruction.

- Teachers responded favorably to a user questionnaire regarding activities and materials developed in the project.

- Administrator responses were favorable toward the project's materials and methodology.

Philadelphia

- An analysis of anecdotal records indicated that counselors and teachers in the subject areas of English, art, home economics and health/physical education participated in the comprehensive career education model program.

McKeesport

- Satisfactory progress was made toward the project's educational process objectives. The process objectives dealt with the project being reality bound, self-oriented and personalized. The most successful accomplishments were evidenced at the elementary and junior high levels.

- The accomplishment of the project's product objectives including improved student knowledge, attitude and self-concept can be summarized as follows:

  1. The totality of information on product effectiveness at the elementary level indicated a generally successful program.

  2. The evidence available regarding the junior high school program indicated a great number of highly successful activities. The Ohio Vocational Interest Survey data indicated the program did what it said it would and was positively received by parents.

3. The high school career education effort has experienced less success than the elementary and junior high programs.

- The staff development component of the project has been commendable at the elementary and junior high school levels. A notable void existed at the senior high school level.

- The project staff has done an excellent job in the areas of publication and dissemination.

CONCLUSIONS

Ebensburg (Admiral Peary AVTS)

- Business education teachers were only minimally cooperative during the seminar workshop. Few attempts were made to introduce TIMES into their courses.

- Program flexibility and individualization has increased from 35.47 percent in 1972-73 to 70.19 percent in 1973-74.

- The task sheet coding system allows some redundancy and inaccuracy.

- Counselors from home schools, that serve Admiral Peary AVTS, felt they became better informed as a result of Career Exploration Week.

- Excessive delay occurs between teacher data submission and report generation.

- The school morale of the TIMES students is very high.

- The family of the TIMES student is very important in his career decision process.

Crawford County

- The evaluative results indicated that progress had been made toward all the objectives of the project.

- Teacher responses including curriculum developers and users were overwhelmingly positive toward the project.

- Teachers felt the program had particular strength in the variety of materials for instruction, impor-

tance of the concepts about the world of work, awareness of individual needs of pupils, the resources available and the instructional methodology.

- Administrators were favorable toward the format and progress of Project AWAKE as well as the need for career education for students in their districts.

- An instrument developed by the evaluators to measure grade-level concepts in career education appears to have some validity.

Philadelphia

- An approach of "cooperative acceptance" toward implementing the CCEM at Jay Cooke Junior High School has fostered a total supportive type of involvement by administration and staff.

- A modified pretest/posttest design utilizing the Crites Career Maturity Inventory Attitude Scale indicated expected trends in the appropriate direction.

- Evaluative evidence gathered from students indicated positive attitudes toward the CCEM program.

- The second phase of the CCEM program inplementation resulted in some innovative educational experiences within the scope of the basic project objectives.

- A student career education committee was formulated and was very active during the second year of the project implementation.

- The CCEM program staff developed varied and interesting techniques for program information dissemination.

McKeesport

- The district's career education activities were in substantial compliance with the original proposal. A good educational environment existed in the project schools.

- The junior high school effort has been very successful in achieving its educational product goals. A higher percentage of students and staff were served at this level than either the high school or elementary segment.

- The elementary school effort was generally successful in achieving its educational product goals. Of the 16 elementary schools, approximately five were highly supportive of the project.

- The effort at the high school level was only partially successful in achieving its educational product goals. The only classroom penetration of career education activities consisted of the Values Awareness unit which was largely conducted by a project coordinator.

- The staff development (in-service) activities have been effective at the junior high and elementary levels. Staff development in the senior high was largely non-existent.

- Publication and dissemination activities were very successful.

RECOMMENDATIONS

Ebensburg (Admiral Peary AVTS)

- The task sheet coding system must be purged and stabilized.

- Teachers should be given assistance to revise, review and complete task sheets to meet originally-stated objectives.

- Behavioral objectives should be selected so that a random selection of students can be effectively observed and evaluated.

- The business education teachers should be given encouragement and assistance in introducing TIMES concept into the home school courses.

- The computer hardware, including data entry devices, must be continually available to the operations staff. The addition of the Burroughs Computer should solve this problem.

- The internship-clinical experience program should be expanded to areas other than Medical Technology.

- Parental involvement and training should be accelerated. Their importance in the career decision of students at Admiral Peary AVTS cannot be underestimated.

Crawford County

- Continual updating of content and activities should be a major consideration. A major goal should be the inclusion of more learning activities for primary students in many of the units.
- More attention should be given to the quality of learning activities.
- In-service training of teachers by supervisors of the project should be designed to promote more effective use of the units.
- Develop units in the six remaining cluster areas. the six units that have not been developed may be more future oriented.
- The project should be continued, refined and expanded to include more teachers and children.
- Feedback information from teachers should be incorporated in the continual revision of units.
- An "idea" center or section should be included in the storage area of the computer to utilize teacher suggestions that were successful - the "spin-off" for other teachers in the project.

Philadelphia

- Formulate and implement a systematic program evaluation plan. The evaluation design should be one that will provide evidence of the program accomplishing its basic objectives.
- Emphasize development of the guidance and counseling component of the program.
- Continue to include all subject areas in program development relative to the infusion of career education into the ongoing curriculum.
- Continue to incorporate tours and "hands-on" experiences in the curriculum with emphasis on pre- and post-tour planning and discussion.
- Continue to serve as a career education resource to other educational institutions.

McKeesport

- Develop the three or four most promising elementary schools into models. Concentrate effort on these models and disseminate results to other schools.

- Continue the fine work being done on the junior high level and gradually bring McClure and McKeesport Junior High Schools to a comparable level.

- Conduct more frequent and smaller scale in-service sessions during the regular work week. Possibility of awarding certification credits should be explored.

- In-service activities must be directed toward high school staff, counselors and administrators.

- High school students tend to view counseling as a cognitive, factual process. Students and counselors should see emotions, feelings, etc., as legitimate part of counseling process.

- Increase placement services to academic students, 40 percent of whom do not go to college. Assistance in locating summer and part-time employment is needed.

- Work intensively with a small group of high school teachers (N = 5) to insure classroom penetration of career education concepts.

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CHAPTER I

CAREER EDUCATION AT ADMIRAL PEARY AREA VOCATIONAL-TECHNICAL SCHOOL

A. Introduction

The Admiral Peary Area Vocational-Technical School officially opened its doors during the fall of 1972. Located in Ebensburg, Pennsylvania, the Admiral Peary AVTS serves five of the 12 Cambria County School Districts which together account for a land area of 372.7 square miles, a population of 59,834 people, and a real property market value of approximately $120.8 million.

The Borough of Ebensburg, Pennsylvania, also the County Seat for Cambria County, is located close to the cities of Johnstown and Altoona, the two major urban centers of the Southern Pennsylvania Alleghenies Region. Many residents of Ebensburg work in Johnstown where the two largest employers are Bethlehem Steel and United States Steel Corporation. For the non-commuters, a major employer in the Ebensburg Area is Bethlehem Mines Corporation, a supplier of bituminous coal used in the manufacturing of steel.

Essentially, then, Admiral Peary's attendance area is comprised of people who commute to work beyond the borders of the attendance area and who typically live in population clusters of less than 5,000 people. Although the 15 townships and 16 boroughs in the Admiral Peary service area are primarily residential centers, it is important to note that four of the five sending school districts have been classified as "low income" areas by the Federal Government.

Enrolled at the Admiral Peary Area Vocational-Technical School are approximately 800 students who attend the school on a half-time schedule. The sending schools, which include five public schools and one parochial high school, also have students for a half-day session, thus articulating the academic with the vocational. Participating schools include the following: Blacklick Valley High School, Nanty Glo, Pennsylvania; Cambria Heights High School, Patton, Pennsylvania; Central Cambria High School, Ebensburg, Pennsylvania; Penn Cambria High School, Cresson,

Pennsylvania; Portage Area High School, Portage, Pennsylvania; and Bishop Carroll High School, Ebensburg, Pennsylvania.

Prior to the opening of the Admiral Peary Area Vocational-Technical School in the fall of 1972, a needs assessment was conducted by the school's officials to determine the kinds of curricula to be offered by Admiral Peary. Included in the needs assesment were data acquired from the Labor Market as well as from the following sources: the Student-Parent Occupational Interest Survey; the Business and Industry Survey; the School Administrators/Guidance Counselors Survey; and the General Advisory Committee Survey.

Based on data from the surveys just mentioned, as well as on Labor Market needs and trends, the following twenty curriculum areas were identified as being the most appropriate for the Admiral Peary Area Vocational-Technical School:

1. Agriculture Careers
   a. Agriculture Technology
   b. Horticulture and Floriculture
2. Automotive Careers
   a. Automotive Body Repair
   b. Automotive Mechanical Repair
3. Building Construction Careers
   a. Carpentry
   b. Electricity
   c. Masonry
   d. Plumbing and Pipefitting
4. Metal and Material Careers
   a. Machining
   b. Modern Methods Mining
   c. Welding
5. Service Careers
   a. Cosmetology
   b. Health Services
   c. Marketing Technology
   d. Personal Services and Transportation
   e. Quantity Food Services

6. Technical Careers

   a. Electronics Technology
   b. Engineering Related Technology
   c. Mechanical Drafting and Design Technology
   d. Scientific Data Processing

All of the above curriculum areas are included in Project TIMES (Temporally Individualized Modular Education Scheduling) and serve as the content base for not only individualizing instruction, but also for the facilitation of instruction through the individualization of both students' and teachers' schedules. It is this focus, then - the individualization of both instruction and scheduling in an area vocational-technical school - that led to the receipt of an implementation and evaluation grant entitled: "Implementation of a Flexible Scheduling Program (TIMES Scheduling) Built Around the Career Aspirations of Each Student: A School-Based Career Education Model."

Funded by the Research Coordinating Unit of the Pennsylvania Department of Education, the TIMES Project will have covered, upon the expiration of the second year's funding, the time period July 1, 1973 through September 15, 1974. What follows now is a synthesized evaluation of Project TIMES' second year of operation. (Data Sources: Pennsylvania's Regions, Harrisburg, PA.; Pennsylvania State Planning Board, 1967; Final Report: A Modular Scheduling Program for Vocational-Technical Schools, Admiral Peary Area Vocational-Technical School, Ebensburg, PA., June 1972).

B. The Project's Major Aspects

The major aspects of the Admiral Peary Area Vocational Technical School Project have been identified as follows:

1. identification of twenty career areas;

2. use of the Dictionary of Occupational Titles as a system for numbering and classifying the various occupations within a given area;

3. identification of the behaviorally-described skills required for the various occupations;

4. development of the required skills through the use of tasks, modules and units; and

5. management of the system through the use of computer hardware and software.

C. Evaluative Procedures

This report is based on data which were collected utilizing the following evaluative procedures:

1. Appropriate conferences were held on a regular basis with Dr. Bryan Fluck, the Director of Vocational Education, and Dr. Edward Lareau, Project Director and Director of Research.

2. Task sheets were randomly sampled to determine their appropriateness for the Program being developed.

3. Hardware was examined for a determination of input-output efficiency.

4. Computer software was analyzed to assess its effectiveness in monitoring student activities and in providing useful information to counselors and teachers.

5. Interviews were held with the teaching staff at Admiral Peary.

6. Observation scales were used to assess the instructional environment.

7. Reactions of employers were obtained relative to the behavior of students involved in the clinical experiences.

8. Interviews were held with the chief school officers representing the five sending schools.

9. Interviews were held with the home school counselors who were primarily responsible for student selection.

10. The School Morale Scale was administered to all students.

11. The Career Maturity Inventory (CMI) was administered to all students.

12. The Career Decision Questionnaire was administered to all students.

13. Quarterly reports were thoroughly reviewed.

D. General Comments

The second year of Project TIMES was geared toward an expansion of the TIMES concept, as well as toward the refinement of the first year Task Instruction Sheets (TIS).

As in the first year, the project was fortunate to have two key personnel in leadership roles: Dr. Bryan V. Fluck, director of the Admiral Peary Area Vocational-Technical School and Dr. Edward H. Lareau, director of research and project director. The project's success hinges largely on the leadership and energy of these two men.

Unlike the enthusiasm shown during the first year, teacher enthusiasm tended to be tempered during the second year. It is probable that the lack of experience on the part of the vocational-technical teachers in writing task sheets may have affected teacher motivation during the second year. Moreover, the added responsibility of attending classes to meet certification requirements may have also diminished teacher enthusiasm toward the writing and revising of task sheets.

Overall, the school was looked upon favorably by students, parents and administrators. While the chief complaint centered on the lack of space to accomodate all students who wanted to attend the APVTS, most students in the program reported a positive school environment.

E. The 1974 Summer Programs

During the summer of 1974, two programs were conducted at Admiral Peary Area Vocational-Technical School: an Eighth Grade Career Exploration Week; and a Workshop-Seminar for Business Education Teachers.

1. A "Career Exploration Week" was held during the first week in June for all 8th graders who would enter 9th grade in the fall. Students spent two days in two career areas of their choice. In addition, each instructor was assisted by two outstanding juniors or seniors

enrolled in the APVTS programs. Approximately 450 students (out of 1200 eligible 8th graders) participated in the "Career Exploration Week," which was conducted after the last day of school. The average student attendance was 4.57 days out of a possible total of 5.

Students selected their first and second choices from twenty program areas. To assess the degree to which their choices were accommodated, the following scale was applied:

Scale

3 points - perfect match (student attended both programs of his or her choice).
2 points - reversed match (student's first choice was second; or student's second choice was first).
1 point - one match (student attended one of his choices).
0 points - no match

Based on the questionnaire responses of 192 students, the average point scale was 2.58, indicating that nearly all students were able to attend both program choices. Students' responses to the programs attended are reported in Table 1.

TABLE 1 STUDENTS' RESPONSES TO PROGRAMS ATTENDED

Content	1st attended Yes	1st attended No	2nd attended Yes	2nd attended No	Average
1. It was interesting.	93%	7%	91%	9%	92%
2. I had a chance to ask questions.	98%	2%	97%	3%	97.5%
3. I understand what task sheets are.	73%	27%	76%	24%	94.5%
4. I learned about jobs that you can be trained for in that program.	96%	4%	93%	7%	94.5%
5. I would like to spend more time in that program.	75%	25%	69%	31%	72%

As revealed in Table 2, 92% of the students found the program interesting, 97.5% stated they could ask questions, 74.5% indicated they understood the task sheets, 94.5% learned about the jobs which comprise the training program, and 72% would like to spend more time in the program. Further, an attempt was made to ascertain why students would participate in the career orientation program since it was not a formal part of their academic program. Their responses are presented in Table 2.

TABLE 2 REASON FOR ATTENDING ORIENTATION PROGRAM

REASON	N	%
interest in vocational education	176	92
a friend was going	28	15
my parents wanted me to	53	28
my teacher suggested it	26	14
my counselor suggested it	35	18
there was nothing else to do	13	7
other	38	20

When asked to rate the overall program, 95 percent of the students rated the program from good to very good (see Table 3). Further, of the students attending, 67 percent of them stated that they planned to attend APVTS.

TABLE 3 STUDENT RATING OF OVERALL PROGRAM

RATING	N	%
Very good	120	66
Good	56	29
Fair	6	5
Poor	0	0
Very Poor	0	0

In addition, the students were asked to indicate their "likes and dislikes" in relation to the career orientation experience. Table 4 summarizes the students' responses.

TABLE 4 STUDENT LIKES AND DISLIKES

Students' Likes		Students' Dislikes	
58	hands on activities	14	getting out of bed early
59	the information	12	insufficient time
38	everything	1	not enough hands on
18	the teachers	16	a few indicated boredom (16.8%)
12	the equipment		
1	the school		

2. The Counselors as Respondents

As a result of their participating in the career orientation experience, the home school counselors:

a. felt they had developed a better understanding of the APVTS programs, and that the experience would affect the way they counseled students;

b. felt that the sessions were worthwhile for students, and that stereotypes about students and vocational education had changed for the better;

c. agreed that the experience was good for them, and that the students' questions would be helpful to the vocational-technical teaching staff;

d. considered the student aides to be very helpful during the experience, but felt the presentations had been rushed and that parents did not receive sufficient information from the instructors; and

e. were of the opinion that the APVTS experience would subsequently have a positive affect on the career decisions of the participating students.

3. The APVTS Teachers as Respondents

In expressing their reactions to the career exploration experience, the APVTS teachers generally described it as being worthwhile. In addition, 74 percent of them indicated the experience would positively affect their teaching. Furthermore, all of them (100 percent) described the sessions as being helpful not only to them, but to the participating students and counselors as well. The instructors' responses are summarized in Table 5.

TABLE 5
APVTS INSTRUCTORS' RESPONSES TO WORKSHOP-SEMINAR

Question	YES N	YES %	NO N	NO %	DON'T KNOW N	DON'T KNOW %
1. Did the workshop have any effect on how you will teach your students next Fall?	14	74	3	16	2	10
2. Do you feel that the sessions were worthwhile to the students?	20	100	0	0	0	0
3. Do you feel that the sessions were worthwhile for the counselors?	12	60	1	5	7	35

The APVTS instructors were also positive in their feelings about: the preparations they had to make for the week, the receipt of needed materials, and the assignment of student aides to appropriate work areas. Table 6 includes the supportive data.

TABLE 6 INSTRUCTORS' FEELINGS ABOUT ORIENTATION PREPARATION

Area	Positive N	Positive %	Negative N	Negative %
1. Preparation (in general)	12	85	2	15
2. Help received	17	100	2	0
3. Materials available	14	88	2	12
4. Assignments accurate	11	73	4	27

4. Business Education Teachers' Workshop-Seminar

During June, 1974, a two-week workshop-seminar was conducted for business education teachers from the five sending schools involved in the project. The main goals of the seminar were to explain the TIMES project, to develop strategies to implement the project in each of the participating high schools, and to understand the central coordinating role of the APVTS staff. As part of the workshop-seminar, the business education teachers were exposed to behavioral objectives in business education by two professors from the Pennsylvania State University.

When the business education teachers were asked to describe the TIMES concept, their explanations were sketchy. Six out of twenty-two teachers mentioned "task-unit modules," twenty-one mentioned "individualized instruction," and seven indicated "task sheets." All of the twenty-two respondents felt they could make TIMES' program work in their own schools. In addition, 92 percent of them rated the workshop-seminar training sessions from good to very good.

As part of the workshop-seminar, the teachers developed 107 task sheets, approximately four per teacher. When asked about the quality of their work, 84 percent of the teachers rated it as good, while 16 percent rated it as fair. An overall rating of the business education seminar is presented in Table 7. Reactions to specific components of the workshop-seminar are included in Table 8.

TABLE 7 BUSINESS EDUCATION TEACHERS' RATING OF SEMINAR

Rating	N	%
Very good	7	30
Good	15	66
Fair	1	4
Poor	0	0
Very Poor	0	0

TABLE 8
BUSINESS EDUCATION TEACHERS' REACTIONS TO WORKSHOP-SEMINAR

Reaction	N*	Positive N	Positive %	Neutral N	Neutral %	Negative N	Negative %
1. Workshop in general	4	3	75	0	0	1	25
2. TIMES concept	11	7	64	1	9	3	27
3. Feasibility of Admission to Home School	12	0	0	6	50	6	50

* Unequal N's result from no response answers

The responses to item number 3 in Table 8 indicate that the teachers were resistant to introducing the TIMES concept in their home schools. Further, teachers who did introduce the concept experienced problems which eminated from the utilization of computer hardware and software. Thus, the personal feelings of the teachers about the TIMES concept, and some unforeseen mechanical problems constrained the implementation of the concept in the home schools.

F. Educational Process

1. Curricular Materials: Task Sheets

The units and modules, derived from the Dictionary of Occupational Titles, have been categorized into twenty career areas (see page 2) which reflect the local community employment market. To date, over one thousand task sheets on the career areas have been completed.

Included in Table 9 are task sheets developed during the period December 3, 1973 through February 4, 1974. In this period, over 1000 different task sheets were completed by the students, or an average of 17 task sheets per student. The production of task sheets ranges from 332 in Machining to 4 in Horticulture. As a measure of flexibility in the various areas, the percentage of task sheets not completed on the same day was computed. Thus,

while a lock-step pattern was found to exist in Agricultural Technology and Marketing Technology, a very high rate of individualization characterized Environmental Technology (100%), Data Processing (89%), Health Services (89%), and Mechanical Drafting (86%). The combining of all Career Areas indicated that 70.19% of the task sheets were not completed by all students on the same day. This is a vast improvement over the 35.47% flexibility shown last year. The TIMES Project is to be commended not only for its flexibility, but also for its Computer Managed Instruction (CMI) as well.

2. The Task Sheets: Additional Observations

While the TIMES Project has made a substantial contribution in the production of task sheets, the evaluators suggest that the following weaknesses be considered in any future improvement activities; they are:

a. the difficulties that have arisen in the updating, revising and expanding of task sheets;

b. the uneven, and in some cases, non-existent production of task sheets by teachers;

c. the difficulties related to the changes in the task sheet coding system;

d. the problems related to the Computer Managed Instruction Function, namely:

(1) the lack of on-line, interactive data input,

(2) the task sheets' faulty coding system,

(3) the time lag between data submission and report generation due to keypunching problems,

(4) the uneven teacher participation in task sheet development as reflected in Table 9 and,

(5) the faulty management of data, or the inconsistency between the time or date of computerized output and computerized reporting;

TABLE 9 TASK SHEET PERFORMANCE BY CAREER AREA FOR PERIOD 12/3/73 to 2/4/74

Area	Students X Task Sheets	Task Sheets	Task Sheets Not Completed on Same Date	Percent of Task Sheets Not Completed on Same Date	Last Date Completed
Agriculture Technology	16	13	3	23.08	2/18/74
Horticulture*	8	4	2	50.00	2/27/74
Carpentry	75	6	0	0.00	10/03/73
Electricity	1658	99	80	80.81	4/30/74
Masonry	8.7	70	40	57.14	4/25/74
Plumbing	282	13	8	61.54	10/19/73
Machining	5931	332	233	70.18	4/04/74
Mining	240	16	6	37.50	10/04/73
Cosmetology	688	72	56	77.78	4/19/74
Health Services	1244	47	42	89.36	3/08/74
Marketing Technology	2577	67	9	13.43	4/04/74
Personal Services	575	42	26	61.90	11/05/73
Quantity Foods	157	8	2	25.00	09/19/73
Environmental Technology	310	15	15	100.00	03/04/74
Mechanical Drafting	1757	171	148	86.55	4/26/74
Data Processing	1023	75	67	89.33	3/19/74
TOTAL	17358	1050	737	70.19 Average	

*AM only

e. the incompletion of tasks for some jobs;

f. the non-sequential nature of some tasks;

g. the lack of attention given to the affective domain;

h. the lack of information needed to adequately accomplish task sheet objectives; and

i. the problem of unclear objectives - objectives which should include: (1) the activity to be accomplished (performance), (2) the conditions under which the performance should occur, (3) the criterion level upon which to measure performance (minimal acceptance level of performance), and (4) the rationale behind task development (or why a student should be able to demonstrate competencies in the performance of specified tasks).

After a thorough evaluation of randomly selected tasks, the team suggested a number of task improvement strategies to the Director of Research. Despite these suggestions, the production of curricular materials to sustain the TIMES concept has been considerable. Every effort should be made to refine the task development process in accordance with the aforementioned suggestions.

3. Computer Hardware and Software

Computer hardware consists of an IBM 1130 (16k) with a System 7 to spool information provided by IBM remote data entry devices. The system also possesses tape, disc and high speed printing capability. In the presence of the evaluators, jobs in Cobol, RPG and Fortran were run on the 1130. The system was then dedicated to remote entry and information was input into the system from a remote entry point. However, the remote entry function is difficult to implement without dedicating the entire system to this purpose. One of the major difficulties arises from APVTS Data Processing students occasionally wiping out the operating system while working with the 1130. Another problem is caused by the lack of interactive capability in the RDIP terminals used for data input. The end result has been the faulty implementation of a well designed system. Teacher

input was hand carried and the key punching backlog was of such a nature that feedback to the instructional staff did not occur until May, 1974.

The software systems developed by the TIMES staff include the tasks and units completed by the student and by the class. The staff has also developed a sophisticated Computer Managed Instruction (CMI) package which monitors the progress and flexibility of each of the twenty Career Areas. This will be of great assistance to Project Management. To improve the hardware situation, the school has installed a Burroughs B-1700 Computer to handle the instructional load. Further, this should permit the 1130 to be dedicated to TIMES processing, while allowing the simultaneous existence of the hardware and software necessary to implement TIMES. Improvements which need attention in the 1974-75 period are:

a. eliminating any redundant or erroneous task sheet codes; and

b. increasing staff motivation through the use of accurate, feedback information useful to the teacher.

4. Instructional Environment

At least two evaluators observed the teaching-learning situation in each classroom. Using a Likert and Semantic Differential scale, the evaluators applied one scale to student behaviors and two to teacher behaviors. An explanation of the data is developed below.

a. Student Behaviors

Student behaviors were rated on a modified Ryan's Observational Scale, the composite of which appears in Table 10. The scores for all Career Areas - which can range from 1 to 7 with 4.0 indicating neutrality or ambivalence - fell in the higher ranges; specifically, from 5.0 (Technologies-Alertness and Initiating and Service-Alertness) to 6.0 (Agriculture, Automotive and Metal and Material Responsibility). Generally, the ratings appear to be highest in the Metals and Materials areas, and lowest in Technologies. In the overall picture, however,

the student body has initiative, and is responsible and confident.

TABLE 10
OBSERVATIONS OF STUDENT BEHAVIORS IN LEARNING SITUATIONS

Career Areas	Dimensions* Apathetic-Alert X	Obstructive-Responsible X	Uncertain-Confident X	Dependent-Initiating X
Agricultural	5.50	6.00	5.20	5.20
Automotive	5.50	6.00	5.55	5.50
Building Construction	5.18	5.64	5.18	5.10
Metals & Materials	5.20	6.00	5.80	5.60
Service	5.00	5.29	5.40	5.14
Technologies	5.00	5.33	5.17	5.00
TOTALS	5.23	5.71	5.38	5.26

* Scores range from 1 to 7 with 4 being midway between polar objectives

b. Teachers' Behaviors

Table 11 includes the nine dimensions used to rate teachers' behaviors. The range of scores, as did those of students, extend from 1 to 7 with 4.0 being neutral. Upon examining the results, the teachers received ratings that were quite good on the nine dimensions, with most scales receiving a 5 or better. Likewise, the data in Table 12 corroborate the findings in Table 11 with positive teacher behaviors falling, for the most part, in the columns labeled "Usually" and "Almost Always."

c. Summary

Both student and teacher behaviors appear to be conducive to the teaching-learning environment. Recognizing this positive aspect, there is a need for teacher improvement in the dimensions identified as "Stimulating" and "Adaptable."

TABLE 11 OBSERVATIONS OF TEACHER BEHAVIOR IN LEARNING SITUATIONS

Dimensions	Agri-cultural X	Auto-motive X	Construc-tion X	Metals & Materials X	Service X	Techno-logy X	TOTAL (weighed mean)
Fair	5.5	5.0	5.0	5.2	5.4	5.66	5.28
Responsive	5.2	5.5	5.0	5.8	4.86	4.66	5.09
Understanding	5.0	4.5	4.73	5.6	4.86	5.16	4.97
Stimulating	4.5	4.5	4.36	4.4	5.0	4.66	4.57
Alert	4.8	6.00	5.45	6.4	5.4	4.83	5.4
Confident	5.4	5.5	5.56	6.2	5.57	5.33	5.59
Systematic	4.2	4.0	5.64	5.4	5.86	5.5	5.37
Adaptable	4.5	5.0	4.55	5.2	4.86	5.0	4.8
Optimistic	5.0	5.0	5.1	5.8	4.71	5.0	5.09
Mean	4.9	5.0	5.43	5.55	5.17	5.09	N/A

TABLE 12 TEACHER OBSERVATION SCALE* ALL AREAS

		1	2	3	4	5	6
1.	The teacher lets the student take responsibility for what the student learns.	-	-	3	18	6	-
2.	The teacher respects students' feelings	-	-	2	18	6	1
3.	The teacher has a pleasant classroom personality.	-	-	5	20	2	-
4.	There existed a good mix of teacher initiated and pupil initiated discussions.	-	1	6	17	-	3
5.	The teacher possesses a theoretical background adequate to his teaching.	-	-	-	6	21	-
6.	There is a good teacher-student rapport.	-	-	-	24	3	-
7.	Students feel free to discuss things with the teacher.	-	-	-	21	3	2
8.	The teacher is in control of the situation.	-	1	-	11	15	-
9.	The teacher treats the students as individuals, not as a group.	-	-	1	21	5	-
10.	The teacher is well organized.	-	1	1	17	8	-
11.	The teacher creates interest in subject.	-	-	4	23	-	-
12.	The teacher is enthusiastic about his work.	-	-	2	22	3	-
	Grand Total	-	3	25	218	72	6
	Percent	-	.9	8	64	22.2	1.9

*Key: 1 Very Seldom
2 Seldom
3 Neutral
4 Usually
5 Almost Always
6 No chance to observe

G. Educational Product

1. Behavioral Objectives Mastered by Randomly Selected Students in the Twenty Content Areas

To evaluate the accomplishment of objectives, teachers were asked to identify five behavioral objectives they expected their students to be able to achieve. While it was the intent to randomly select seniors to validate the objectives, the seniors had already completed their senior year when the evaluators arrived in May, 1974. Thus, the validations were held with available students - a sampling of three juniors and three sophomores taken from both the morning and afternoon attendance sessions.

It should be noted that not all of the objectives were directly observed by the evaluation team. However, a combination of procedures was used to alleviate this deficiency, namely, the use of teacher-developed tests and teacher verification statements. The mode of validation by Career Area is reported in Table 13.

The evaluation team recognized that the sophomores and juniors would not be able to accomplish, in some cases, objectives that were designed for seniors. Further, additional difficulties arose because of the differences in tracks and sections between and among the senior, sophomore and junior groups. Recognizing and attending to these limitations, the evaluators proceeded with the evaluation of student performance. Table 13 includes a summary of the student performance data, while the Appendix contains the behavioral objectives for each Career Area. Also included in Table 14 is the number of students for whom the objectives were not applicable.

2. Evaluative Data on the Career Areas

a. Horticulture

Of the five behavioral objectives in this area, one was observed and four were teacher verified. While four students could identify ten cut flowers, two other students could not. This may have happened - as the teacher suggested - because the course is divided into three major areas (landscaping, floral design and greenhouse); consequently, some students would have difficulty

TABLE 13 MODE OF VALIDATION FOR OBJECTIVES BY AREA

AREA	OBSERVE	TESTS	TEACHER VERIFICATION
Horticulture	1		2-3-4-5
Auto Body	2-3-4-5-		1
Auto Mechanics	3	1-2-4	5
Carpentry			1-2-3-4-5
Electricity	1-2-3-4-5		
Masonry	1		2-3-4-5
Plumbing/Pipefitting	4		1-2-3-5
Machining	1	2-3-4-5	
Mining	1-2	4-5	3
Welding		1-3-5	2-4
Cosmetology	1		2-3-4-5
Health Services	1-2-3-4-5		
Marketing Tech.	1-2-3-5		4
Personal Services	1-2-3		4-5
Quantity Foods	1-2-3-4A		5A-4B-5B
Electronics Tech.	3	1-2-4-5	
Environmental Control Tech.	2-4-5		
Drafting			1-2-3-4-5
Scientific Data Process	3	1-5	2-4
Math		1	
Physics	5	1-2-3-4	

TABLE 14 STUDENT PERFORMANCE ON SELECTED BEHAVIORAL OBJECTIVES BY SUBJECT AREA

Area	N	Number Capable of Performing Objective* (Max = 6)														
		1			2			3			4			5		
		**C	NC	NA	C	NC	NA	C	NC	NA	C	NC	NA	C	NC	NA
Environ. Tech	17	3	3	0	5	1	0	6	0	0	6	0	0	6	0	0
Physics	21	6	0	0	6	0	0	6	0	0	6	0	0	6	0	0
Auto Body	2	5	1	0	6	0	0	6	0	0	4	2	0	6	0	0
Auto Mech.	3	6	0	0	6	0	0	6	0	0	6	0	0	6	0	0
Horticulture	1	4	0	2	4	0	2	2	1	3	2	0	4	3	0	3
Carpentry	4	6	0	0	5	1	0	6	0	0	6	0	0	5	1	0
Plumbing	7	6	0	0	6	0	0	6	0	0	3	3	0	6	0	0
Electronics	16	4	2	0	4	2	0	6	0	0	5	1	0	5	1	0
Drafting	18	6	0	0	6	0	0	6	0	0	6	0	0	4	0	2
Math	20	6	0	0	6	0	0	6	0	0	6	0	0	6	0	0
Marketing	13	6	0	0	6	0	0	6	0	0	5	1	0	6	0	0
Health Serv.	12	6	0	0	6	0	0	6	0	0	6	0	0	6	0	0
Quantity Food.	15	6	0	0	6	0	0	6	0	0	5	1	0	5	1	0
Personal Ser.	14	6	0	0	6	0	0	6	0	0	6	0	0	6	0	0
Cosmetology	11	6	0	0	6	0	0	4	2	0	6	0	0	6	0	0
Data Proc.	19	6	0	0	6	0	0	5	1	0	6	0	0	2	0	4
Electricity	5	6	0	0	5	1	0	4	2	0	6	0	0	6	0	0
Mining	9	6	0	0	6	0	0	5	1	0	6	0	0	2	1	3
Masonry	6	5	1	0	6	0	0	6	0	0	6	0	0	5	1	0
Welding	10	3	0	3	3	0	3	6	0	0	3	0	3	5	1	0
Machining	8	5	1	0	5	1	0	2	4	0	5	1	0	5	1	0

*Objectives list by subject area in Appendix

** Key: C = Completed NC = Not Completed NA = Not Applicable

with some objectives. Since the teachers did not clearly understand that they were to develop five behaviors for each section, it is possible that this situation had a limiting effect on student performance. Despite this limitation, in only one case was a student unable to perform an assigned task, namely, to have 98 percent of the potted mums live.

b. Auto Body

With respect to the auto body area, all six students performed the desired behaviors for objectives 2, 3, and 5. Moreover, 5 out of 6 students were able to explain - as verified by the teacher - all of the safety rules included in the Student Handbook. In addition, 4 out of 6 students selected (from the color book and color code) the appropriate colors to be used on various vehicles.

c. Auto Mechanic

All six students successfully completed the five performance behaviors associated with the auto mechanics area. Three objectives were verified by written tests; the other, by a teacher. Students capably identified various tools and, when asked, could perform the tasks associated with particular tools.

d. Carpentry

In the carpentry area, three objectives were verified by a teacher aid (the regular teacher was being hospitalized at the time), and two objectives were assessed through observations of an evaluation team member. On objective two, all but one student could select the appropriate size of and/or cut and space floor joists, trimmers and headers. On the fifth objective, verified by observation, all students except one could identify the types and sizes of hardware for doors and explain the use of associated carpenter tools. While the one student was unsuccessful in accomplishing objective five, he had better success with objective two, an indication that anxiety may have affected his performance on objective five.

e. Electricity

The six students successfully connected three wires (pigtail style), fastened a crimp-type terminal to a cable, and connected two wires using a wire knot. However, one student could not solder a three-wire pigtail splice, and two could not insulate a three-wire pigtail splice with tape. Since both students were in their second year, they should have been able to perform these tasks.

f. Masonry

All six students could build a pier to specifications, space courses of bricks appropriately, and identify the correct masonry tools. Five out of the six students could visually compare three types of sand, and all students - except one - could build an 8" block wall which intersected with a 4" block wall.

g. Plumbing

With respect to plumbing, the teacher verified that all six students could perform the assigned four tasks. Relative to the fourth objective, only 3 out of 6 students could identify - with 80 percent accuracy - three sizes and four weights of copper tubing.

h. Machining

As an observed task, five out of the six students could hold and rotate work on a face plate. Four other objectives were assessed through the use of short, five-item tests. The poorest performance of students was on the test dealing with various types of countersinks. Further, only two out of six students could successfully meet the criterion established by the teacher.

i. Mining

In the mining area, all students could set oxygen and acetylene equipment and test for leaks. Also, all six students could identify and adjust various welding flames and, in addition, explain the differences between voltages, ampheres and ohms. In addition, five of

of the six students could assemble ferrule-type and knife-type fuses. Of the three second year students, two of them got 70 percent of the items correct on a test of knowledge and ability designed to identify conventional lines on a blueprint. The last objective was not applicable to three of the students since they were first year students.

j. Welding

Students achieved up to 80 percent on a metallic inert gas welding test. Moreover, all - if applicable to them - could run bends in a flat position. All six students indicated a knowledge of welding safety rules on a test; likewise, the teacher verified that three of the students could follow the specifications involved in making a fillet weld in a flat horizontal position.

k. Cosmetology

In reference to cosmetology, all students could: sanitize beauty salon implements in accordance with established procedures; demonstrate the procedures for blocking and wrapping a permanent to specifications; and perform a manicure in accordance with established procedures. Only four out of six students, however, were capable of producing horizontal fingerwaves on a mannequin.

l. Health Services

While the five behaviors in the health services area were not observed directly by the evaluation team, teachers' records verified that six students could accomplish the desired behaviors. By "spot checking," the evaluator observed that one student could operate the sterilmatic sterilizer; another could take and record pulse and respiration data; and still another student was capable of administering artificial respiration by mouth-to-mouth techniques.

m. Marketing Technology

All students were successful in ringing up a sale on a cash register and arriving at the

correct total. In addition, they could: ring up multiple item sales using appropriate procedures; make change in three different sales situations (using a $5.00 bill); and label the five parts of a magazine ad. On another criterion, five of the six students were able to file a series of customers' names in alphabetical order with 100 percent accuracy. In only one case did a student file two names out of order; in this situation, the first names were out of order since the last names were the same.

n. Personal Services

All of the six students successfully demonstrated their capabilities in this area. As observed by the evaluator, all could: use the cash register; ring up both taxable and non-taxable items and arrive at the correct total; count and disseminate correct change; and file at least fifteen names and addresses in alphabetical order. Moreover, all of the students could complete a newspaper ad layout in detail, and, in addition, could complete a job application free of "scratch outs" or erasures.

o. Quantity Foods

In this area, students completed all of the assigned behaviors. The evaluator observed that all six could: accurately measure and weigh one cup of granulated sugar; state the minimum safe temperatures (within 5° F.) for washing and rinsing pots and for using the dish washing machine; and adjust the recipe for Beef Biscuit Roll in order to make twenty-four servings (with at least 80 percent accuracy). The teacher verified that the students could correctly serve food and beverages, and that they had the ability to prepare and make hoagies.

p. Electronics

On only one objective were all students able to perform adequately. That objective involved the demonstrating of the proper use of the RCA volt ohm millimeter for reading (within 10 percent accuracy) amps, ohms and volts. Four of the six students successfully calculated ohms law values in practical circuit applications. Only four of

the six demonstrated the ability to read resistor values using the Electronic Industries Association color code. All but one was able to apply series circuits to practical problems. Moreover, all except one student could label the parts of vacuum tube diodes, triodes, tetrodes, pentrodes, and pentagrid mixers. The same held true for applying the proper voltage and explaining its operation using the circuit series method.

q. Environmental Control Technology

Only three of the six students could name - with 90 percent accuracy - 20 pieces of labware included in a 50 item test. On the other hand, five out of six students could identify 10 major pieces of laboratory equipment. All of the students were successful at: explaining the history, function and regulatory powers of the Pennsylvania Department of Environmental Resources; demonstrating the operational procedures for measuring the true degree of acidity and alkalinity in a solution; and demonstrating the use of the titration method to conduct volumetric determinations in accordance with the degree of accuracy permitted by the burct.

r. Drafting

As verified by the teacher, all students were capable of performing the drafting area tasks. The finished products - observed by the evaluator - indicated that the teacher's judgments were accurate.

s. Scientific Data Processing

All students successfully accomplished all tasks in this area. The evaluator confirmed the ability of students to punch and duplicate a single card. Other performance behaviors were verified by the teacher.

t. Mathematics

According to teacher verification, all students were able to demonstrate - on tests - these skills: adding, subtracting and multiplying polynomials; multiplying a polynomial by a a mononomial; factoring trinomials; solving a

first degree equation on one variable; and solving first degree equations involving parameters.

3. Summary and Discussion

As was mentioned earlier, the original validation procedures were designed for seniors. Since seniors were unavailable, sophomores and juniors were included. Generally, student performance was very good in both the academic and service areas. As expected, students experienced difficulties in some areas; however, the difficulties may have arisen because of the nature of the objectives, or the criterion level itself, or the lack of experience and maturity on the part of the students. A general reaction to the validation experience is that it not only assisted the teachers in evaluating their students, but also in evaluating their own instructional activities.

4. Career Maturity Inventory (CMI)

The Career Maturity Inventory has been conceived and constructed to measure the maturity of attitudes and competencies that are critical in realistic decision-making. In the past, it was thought that choosing a life's work was largely a matter of chance; or, if some deliberation was given to it, the choice was made at a particular point in time, usually when leaving high school. It was assumed that there were few, if any, decisions leading up to the actual choice and no consequences of importance following it.

However, this cross-sectional view of career choice has been challenged in recent years by recognizing the fact that selecting an occupation is a process which spans a considerable number of years, usually from late childhood into early adulthood. The process of vocational development has been further analyzed as unfolding along several distinct, but interrelated, dimensions. These include:

a. consistency of career choice over time;

b. realism of career choice in relation to personal capabilities and employment opportunities;

c. career choice attitudes; and

d. career choice competencies

Because these latter two dimensions of career development have not been previously measured, the CMI was designed to provide a relevant and convenient inventory of them. To assess the maturity of these career behaviors, the CMI provides two types of measures: the Attitude Scale and the Competence Test.

The Attitude Scale elicits the feelings, the subjective reactions, and the dispositions that the individual has toward making a career choice and entering the world of work. For instance, is work seen as a meaningful focus of life or is it viewed as drudgery? How involved and independent is the individual in the choice process? What considerations are made in selecting a career? These and other conative aspects of decision-making are stated in the items of the Attitude Scale as they have actually been verbalized by young people. More specifically, five attitudinal clusters are surveyed:

a. involvement in the career choice process;

b. orientation toward work;

c. independence in decision-making;

d. preference for career choice factors;

e. conceptions of the career choice process.

In contrast, the Competence Test measures the more cognitive variables involved in choosing an occupation. These include: how well the individual can appraise his job-related capabilities (strengths and weaknesses); how much he knows about the world of work; how adept he is in matching personal characteristics with occupational requirem[redacted]how foresighted he is in planning f[redacted]and how effectively he can cope with [redacted]s which arise in the course of career de[redacted]. In all, then, there are five parts to the [redacted]ompetence Test:

a. Self-Appraisal (Part 1: Knowing Yourself)

b. Occupational Information (Part 2: Knowing About Jobs)

c. Goal Selection (Part 3: Choosing A Job)

d. Planning (Part 4: Looking Ahead)

e. Problem Solving (Part 5: What Should They Do?)

In order to determine the career maturity of students exposed to two years of TIMES, the CMI was administered to 264 APVTS seniors. As seen in Table 15, the performance of these students tends to be above the national average on Occupational Information, Planning, and Problem Solving. In addition, they are close to the national average on all remaining subscales.

TABLE 15
PERFORMANCE OF 12th GRADE APVTS
STUDENTS ON THE CAREER MATURITY INVENTORY (N = 264)

Subscale	APVTS Mean	U. S. Mean
Attitude	36.3	37.2
Self-Appraisal	13.2	14.1
Occupational Information	16.2	14.4
Goal Selection	12.3	12.9
Planning	13.2	11.9
Problem Solving	11.2	9.5

The superiority of the APVTS students on Occupational Information and Problem Solving is especially commendable since these skills are directly pursued by the TIMES Project. Moreover, the CMI as with most instruments, has some positive correlation with general academic ability. Thus, the fact that APVTS students who are slightly below average in general academic ability score at and above the national average on the CMI is an indication of the project's success. Apparently, the TIMES concept has allowed these students to achieve a level of career maturity beyond what their academic abilities would warrant.

5. School Morale Scale (SMS)

In order to assess the impact of the TIMES Project on student morale, the School Morale Scale (SMS) - developed by Wrightsman, et al. - was

administered to 660 students. The results of the SMS indicate marked student satisfaction in these areas:

a. School Plant

b. Instruction and Instructional Materials

c. Administration, Regulations, and Staff

d. Community Support and Parential Interest

e. Other Students

f. Teacher-Student Relations

Items agreed to by more than 80% of the students are as follows:

ITEM

1. Compared to most school buildings I've seen, the vo-tech building is nicer.

6. My teacher knows me by name.

7. I look forward to Friday afternoons because I won't have to go to school for two days.

11. Mr. Green, the vo-tech Coordinator, is fair.

15. I'd rather go to the vo-tech than most other schools.

25. The guidance counselor (Mr. Wilson) is helpful.

27. The placement officer (Mr. Cassidy) is helpful.

28. The vo-tech has just about the right number of students in it for me.

32. Our homework assignments are fair and reasonable.

38. If I were a teacher I would want to teach in a school like the vo-tech.

43. I am very proud of the vo-tech.

51. The vo-tech is a comfortable school.

53. The janitors in the vo-tech do a good job.

57. I am lucky that I get to attend this particular vo-tech.

63. The Administrators (Dr. Fluck, Mr. Buriak, Mr. Green) and the teachers here are properly appreciative when a student has done something outstanding.

69. I have many good friends at the vo-tech.

Items disagreed to by more than 80% of the students are these:

ITEM

8. The vo-tech building is too large; it is too far to walk from one area to another.

12. My parents feel the community is spending too much for education.

16. The vo-tech is too crowded.

30. I would not change a single thing about the vo-tech, even if I could.

31. The vo-tech building is old and run-down.

37. If it were possible, I would transfer to another vo-tech.

46. The common areas and malls are too noisy.

48. I wish that I went to a vo-tech which has fewer students than this one.

50. I get scolded a lot at vo-tech.

58. The vo-tech building is just about the ugliest I have ever seen.

68. This school district doesn't spend much money on its schools.

72. The vo-tech is often dirty and smelly.

80. The school work is too hard at the vo-tech.

82. I don't like most of the other students at the vo-tech.

83. Too many of my teachers are mean or unfriendly.

84. I am ashamed of the vo-tech.

6. Career Decision Questionnaire (CDQ)

In order to gain some knowledge of the career decision-making process among the APVTS students, the research staff of Admiral Peary developed and administered the Career Decision Questionnaire. The instrument consists of 34 items and has an alpha reliability of .66. The instrument, which was administered to 624 APVTS students in Spring, 1974, drew the following statements of agreement:

Statement	Percent of Agreement
My family feels I would be good at this kind of work.	71
I often read material about this type of work.	59
I frequently discuss my work plans with my family.	54
I believe I have the ability to do this kind of work (chosen).	79
I have watched this type of work (chosen) being done by another person.	81

The major areas of disagreement are:

Statement	Percent of Disagreement
I have performed this type of work for pay.	71
I would never have selected this type of work were it not for the advice of my guidance counselor.	79

Apparently, the career decision-making behaviors of APVTS students are influenced more by the students' families than they are by teachers and counselors. In view of the close-knit family structure in the APVTS service area, this influence is both desirable and understandable.

7. The Clinical Experience

To determine the effectiveness of on-site work experiences, employers were asked to rate the performance of thirty students who were participating in either the medical or dental assistants program. An analysis of the employers' ratings, as reported in Table 16, indicates a very satisfactory level of student performance. Only one student was rated below average on "initiative," a situation which may be attributed to such dimensions as shyness and/or anxiety. Factors receiving ratings of "Above Average" or "Excellent" are presented below:

Factor	Percent Receiving Above Average or Excellent
1. Reliability	53.4
2. Attitude	53.3
3. Cooperation	76.7
4. Appearance	86.6
5. Attendance	100.0
6. Judgment	76.7
7. Interest	66.9
8. Intellect	60.0

It is apparent that the TIMES Project has been successful in preparing dental and medical assistants - an observation that is supported by employers involved in the clinical experience.

8. School Administrators

To determine administrative attitudes toward the TIMES Project, five school superintendents - from the sending schools - were interviewed. Considerable support was expressed for the project in general and Dr. Fluck in particular. All of the administrators felt they were kept well informed by

TABLE 16
PERFORMANCE OF APVTS STUDENTS IN THE CLINICAL EXPERIENCE

Factor	RATINGS				
	Unsatis-factory	% Below Average	% Average	% Above Average	% Excellent
Progress	0	0	63.3	20.0	16.7
Initiative	0	3.3	50.0	36.7	10.0
Reliability	0	0	46.7	26.7	26.7
Attitude	0	0	46.7	40.0	13.3
Cooperation	0	0	23.3	70.0	6.7
Appearance	0	0	13.3	23.3	63.3
Attendance	0	0	0	20.0	80.0
Judgment	0	0	23.3	76.7	0
Interest	0	0	33.3	63.3	3.3
Housekeeping	0	0	53.3	33.3	13.3
Intellect	0	0	40.0	50.0	10.0

the Director. When asked to explain the TIMES concept, all of them commented that it would be difficult to separate the concept from the school. As the superintendents perceive it, the improvements which have emerged from the "learning" aspects of the concept are reflected in the following:

a. an improved socio-economic status for the students;

b. the availability of adult education;

c. the continuous utilization of facilities;

d. the individualized nature of instruction; and

e. the appeal of TIMES to task-oriented parents.

Reported weaknesses, on the other hand, were identified as follows:

a. the inability to accommodate all students who applied because of building size; and

b. the lack of acceptance by some home school teachers of both the subjects and teachers at the APVTS.

Despite the latter negative point, the five school superintendents have given the TIMES Project their strong endorsement.

H. Conclusions

1. Students who attended Career Exploration Week were enthusiastic about their experience. Sixty-seven percent indicated they planned to attend APVTS.

2. Counselors from home schools that serve APVTS felt they became better informed as a result of the Career Exploration Week.

3. Instructors from APVTS felt the week gave them a better perspective and that it would change and improve their teaching techniques.

4. Business Education Teachers cooperated minimally during the seminar workshop; thus, few attempts were made by them to introduce TIMES into their courses.

5. Program flexibility and individualization have increased from 35.14% in 1972-73 to 70.19% in 1973-74.

6. In some areas, the task sheet coding system is characterized by some redundancies and inaccuracies.

7. Due to multi-programming and data entry limitations, computer hardware has been marginal.

8. The software needed to support TIMES has been developed and demonstrated.

9. Presently, excessive delay occurs between teacher data submission and report acquisition.

10. The school morale of students involved in the TIMES Project is very high.

11. Apparently, the family plays an important part in influencing the career decisions of TIMES students.

12. Supervisory ratings indicate that TIMES students are well prepared for internships and clinical experiences.

13. The Career Maturity of the TIMES seniors is at a level higher than would be expected on the basis of their academic ability. Their performance on the Occupation Information, Planning, and Problem Solving subscales (above U.S. norms) were especially good.

14. The validation of the mastery of behavioral objectives was diminished because seniors could not be observed. However, the performance in service areas was very good. In other areas, the problems encountered reduced the information to an evaluation of student behavior.

I. Recommendations

1. The task sheet coding system must be refined and stabilized.

2. The computer hardware, including data entry devices, must be continually available to the operations staff. The addition of the Burroughs Computer should solve this problem.

3. Parental involvement and training should be accelerated. Their influence in the career decisions of students at APVTS cannot be underestimated.

4. The internship-clinical experience program should be expanded to include areas other than Medical Technology.

5. The Career Maturity Inventory should be administered to both a pre- and post- random sample (N=125).

6. Behavioral objectives should be selected to facilitate the random selection of students who can be effectively observed and evaluated.

7. The Business Education Teachers should be given encouragement and assistance in introducing the TIMES concept into their home school courses.

8. Teachers should be given assistance in revising, reviewing and completing tasks sheets in order to accomplish the stated objectives.

CHAPTER II

CAREER EDUCATION IN THE CRAWFORD COUNTY SCHOOLS

A. Introduction

The unique feature of Project AWAKE is that its implementation is dependent upon the interworkings of the Federal Educational Project Center at Meadville, Pennsylvania, and a consortium of four school districts which together encompass all or part of three Pennsylvania counties: Crawford, Erie, and Venango. Unlike many career education projects which, for the most part, tend to be "one-school" centered, the four school districts involved in Project AWAKE - namely, Conneaut, Corry, Penncrest and Titusville - are pursuing a joint strategy for change in the schools which, if successful, may beneficially affect more students at one time than any school district could possibly do operating on its own.

Perhaps the consortium arrangement might be better understood if attention is given to the geographical area in which the participating school districts are located. Situated in the Pennsylvania Northwest, the Region encompassing the schools has boundaries which include the State of Ohio, especially industrialized Youngstown, on the west, Erie County, Lake Erie and rural western New York State on the north, and forested Warren and Venango Counties to the east and southeast, respectively.

Yet despite the variety which characterizes the outlying areas, Crawford, Erie and Venango Counties have been subjected to economic changes which have had a major impact upon employment. Between 1950 and 1960, for instance, almost two-fifths of the area farms were consolidated or disappeared, causing a reduction of over 250,000 acres of tillable soil and a loss of over 7400 jobs. In addition, by 1960, almost three-quarters of the area's farms grossed less than $10,000 per farm, an amount which, at the time, agricultural authorities considered as a minimum for efficient operation. Besides losses in agriculture, over 1500 mining and 2900 railroading jobs were also lost or abolished. (Data source: Pennsylvania's Regions, Harrisburg, Pennsylvania: The Pennsylvania State Planning Board, 1967.)

Inevitably, the effects of such economic conditions would lead to: (1) an increase in the incidence of the number of families on poverty (e.g., an increase of 278 families in a six year period); (2) an increase in the

area's poverty rate (17.1%), making it higher than that of either Pennsylvania (16%) or the United States as a whole (15.1%); and (3) an intensified surge in the area's unemployment rate to over 7%. (Data source: Joseph Raible, "Poverty in Crawford County, Pennsylvania," Crawford County Community Action Association, May 20, 1969).

Perhaps the most direct result of these statistics is that both young and adult populations have had to either leave the area to seek employment, or to remain in the area without the advantages of new training or skills. Thus, concern over the adverse effects of these conditions was paramount in the decision to form a consortium of four school districts - representing 17,260 elementary and secondary pupils - to launch Project AWAKE, an innovative thrust which infuses career-oriented activities into academic subject areas, and utilizes the computer as a resource tool for individualizing and facilitating learning.

Participating in Project AWAKE are a number of elementary schools involving more than 2,000 pupil-participants and 115 teacher-participants. Seven schools are located in the Conneaut School District (Crawford County); five other schools are part of the Corry School District (Crawford and Erie Counties); five schools are members of the Penncrest School District (Crawford County); and four schools are components of the Titusville School District (Crawford, Warren and Venango Counties).

Having stated the background information which led to the writing of the project proposal, we may now consider the effectiveness of Project AWAKE in its second year of operation.

B. <u>The Evaluation Plan: An Overview</u>

The second year evaluation plan of Project AWAKE will not only determine to what extent the stated objectives have been achieved, but also measure the effectiveness of nine revised career clusters.

While special tests will be used with pupils experiencing career clusters in grades K-4, all pupils in grades K-6 will be evaluated in terms of career awareness. In addition, the <u>Career Awareness Inventory</u> (by Cornell Institute for Research and Development in Occupational Education) will be administered to all pupils in grades 5 and 6 as a basis for comparison with national norms. To assess the attitudes and opinions of teachers and administrators, the evaluators will utilize question-

naires, opinionaires, and interviews.

The evaluation plan will provide for a comparison between pupils who are involved in the project with those who are not. This comparison will be achieved through a "time-in-space" mode of measurement. Assuming that the control groups are less aware of the world of work than the experimental group, the evaluators will not administer a pre-test.

Another major goal of Project AWAKE is to have each participating pupil develop a positive self-concept. The achievement of this goal will be based upon expert opinion, as well as upon pupil and teacher responses.

C. Focus

The evaluation concerns itself with the following:

1. Progress toward the stated objectives.

   a. Integrate career and self-awareness with the basic academic materials of the K-6 grade levels.

   b. Expose each student to a range of career clusters within the context of his maturity level.

   c. Individualize the learning programs for each student to meet his interests and concerns.

   d. Demonstrate the feasibility of using existing computer facilities for storage and retrieval of career oriented curricula.

2. Progress toward grade level concepts in the nine revised career cluster units.

3. An evaluation of the revised methodology employed to meet these objectives and concepts.

4. Progress toward the development of a positive self-concept of the students in the project.

D. Progress Toward Stated Objectives

1. The Population

   a. All students in the project.

b. All teachers in the project.

c. All principals and supervisors involved in the project.

2. The Design

To measure progress, the evaluation team will employ a systems approach utilizing questionnaires and opinionaires. In addition to these instruments, standardized tests (individual and group), interviews and observations will likewise be used.

An item analysis will be made to determine the appropriateness of the tests employed. Further, the panel of experts will evaluate the effectiveness of the career education units, or the nine revised career clusters. Each objective will have corresponding quantitative data.

E. Progress Toward Grade Level Concept Questions in the Revised Clusters Units

1. The Population

a. Experimental Group. This group - selected through random and cluster samplings - will include 120 pupils and be divided as follows:

K-2	40 students
3-4	40 students
5-6	40 students

b. Control Group A. This group - selected through procedures identical to those of the experimental group - will include 120 pupils not involved in the project but attending a project school.

c. Control Group B. This group - likewise selected through procedures used with the experimental group - will include 120 pupils from schools not involved in the project. These non-participatory schools will be similar to project schools with respect to socio-economic, geographical and educational setting.

2. The Evaluative Instruments

Two basic instruments will be employed. The

first will be used with pupils in grades K-4; the second, with pupils in grades 5-6.

a. Grades K-4: The Evaluative Instrument

The evaluative instrument for use with K-4 pupils includes a series of scenes depicting work and non-work activities. Administered to each pupil at each of the designated grade levels, the K-4 instrument will attempt to measure pupil awareness of the career concepts presented in the nine career education units. Upon completion of each career clusters unit, the instrument will be administered to all pupils in the experimental and control groups.

b. Grades 5-6: The Evaluative Instrument

The Career Awareness Inventory[1] will be administered to pupils in grades 5 and 6.

F. The Revised Methodology Employed to Meet the Objectives and Concepts.

1. The Population

a. All teachers in the project.

b. All students in the project.

c. Principals and supervisors of schools in the project.

d. Panel of experts.

2. The Design

To compare the effectiveness of experimental activities versus the traditional, questionnaires and opinionaires will be administered. Also, a panel of experts will evaluate each of the nine career clusters with respect to experimental methodology, feasibility, and grade level appropriateness.

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[1]LaVerna M. Fadale, Career Awareness Inventory, (Ithaca, New York: Cornell Institute for Research and Development in Occupational Education.)

G. Progress Toward the Development of a Positive Self-Concept of Students in the Project

1. The Population

a. All teachers in the project.

b. All students in the project.

c. Panel of experts.

An estimate of the development of a positive self-concept of pupils will be made through observation, expert opinion of the methodology employed, and students' opinions and reactions to the materials as observed by the evaluation team.

2. Treatment of the Data

The results will be used to ascertain the following:

a. Progress in relation to the objectives.

b. Comparison of experimental and control group results by grade level as to their awareness of the concept questions.

c. An assessment of the project's influence on the self-concept of students.

d. The development of career awareness as a student progresses through the elementary school.

H. Evaluation of Progress Toward Objectives

1. Instrument Development

An evaluative instrument was developed as a means of determining pupil awareness of career concepts presented in the nine career clusters units. The instrument - designed for K-4 grade levels - included 63 scenes depicting both work and non-work activities. To collect data from pupils in grades 5 and 6, the Career Awareness Inventory was administered.

2. Field Testing Procedure

Separate tests appropriate to each respective grade level were administered. Grade level concept

questions served as the basis for selecting the scenes (8" x 10" pictures), devising the questions and scoring the results. Presented below are grade levels and possible scores.

Grade Level	Possible Score
K	23
1-2	25
3-4	26
5-6	125

All K-4 tests were administered individually by the evaluators at on-site school locations. Teachers, on the other hand, administered the fifth and sixth grade instruments in their own respective classrooms. A sample of the Grade Level Concept Test (for grade 2) may be found in Appendix B_1.

I. Summary of Evaluation

1. Field Testing of Students

To assess the effectiveness of Proejct AWAKE, an experimental group and two control groups were included in the research design. Students comprising all groups were randomly chosen from classrooms representing grades K-6.

The experimental group (E_1) included pupils who received instruction on career concepts developed as part of nine career clusters units. In the first control group (C_2) were students who attended project schools, but who did not participate in the project. This group was used to determine a possible "spin off" effect. The second control group (C_3) consisted of students who neither had instruction in the nine career clusters units nor attended project schools.

2. The Evaluative Instruments

Two basic instruments were administered by the evaluators. The first instrument, developed by the evaluators, included three levels: kindergarten, first and second grades. The second, the Career Awareness

Inventory, was utilized at the fifth and sixth grade levels.

Table 17 presents the various groupings by grade level and number.

TABLE 17
Class Groupings and Numbers Within Groups

Grade Grouping	E_1	C_2	C_3
K-2	40	40	40
3-4	40	40	40
5-6	40	40	40

All groups contained 40 students, excepting fifth and sixth grade experimental groups which numbered 38. The difference in numbers resulted from the unavilability of students near the end of the school year, closing of school for summer vacation, and pupil absenteeism.

Table 18 contains the mean test scores of all groups, K-6. In all samplings, the experimental groups had higher mean test scores than the control groups.

TABLE 18 Mean Test Scores

Grade Grouping	E_1	C_2	C_3
K-2	16.65	13.30	13.60
3-4	18.10	16.30	15.30
5-6	100.60	94.00	89.50

Table 19 illustrates the variance for each of the groups by grade groupings. The results below reveal that the individual scores within the groups are distributed similarily around their respective mean scores.

TABLE 19 Variances

Grade Grouping	E_1	C_2	C_3
K-2	10.90	11.50	10.80
3-4	10.40	11.10	9.80
5-6	169.38	132.66	120.15

To determine if the mean difference in Table 18 were significant, a one-way analysis of variance was used to compare each of the three grade level groupings. The results are presented in Tables 20, 21, and 22.

TABLE 20
ANOVA Summary Table
Kindergarten, First, and Second Grades

Source	D.F.	SS	MS	F
Among	2	264.01	132.01	11.88
Within	117	1299.58	11.11	
Total	119	1563.59		

Table 20, which contains data on the K-2 differences, reveals an F value of 11.88 with 2 and 117 degrees of freedom. Since this value exceeds the tabled value of 3.09 for 2 and 117 degrees of freedom, the differences identified are considered significant at the .05 level of confidence.

TABLE 21
ANOVA Summary Table
Third and Fourth Grade

Source	D.F.	SS	MS	F
Among	2	166.20	83.10	7.93
Within	117	1225.93	10.48	
Total	119	1392.13		

In Table 21 are presented the comparative differences among the third and fourth grade groups. Since the F value of 7.93 exceeds the tabled F value of 3.09 for 2 and 117 degrees of freedom, the differences among the third and fourth grade groups are considered to be significant at the .05 level of confidence.

TABLE 22
ANOVA Summary Table
Fifth and Sixth Grade

Source	D.F.	SS	MS	F
Among	2	2415.00	1207.50	8.61
Within	115	16128.00	140.24	
Total	117	18543.00		

In Table 22 are the results of the analysis of variance comparing the three groups in grades 5 and 6. Since the F value exceeds the tabled value of 3.09 for 2 and 115 degrees of freedom, the differences are considered to be significant at the .05 level of confidence.

On the basis of the test results, it can be concluded that all three experimental groups scored significantly higher than their matched control groups. However, no apparent "spin off" effect could be credited to the first control group (C_2). Apparently, the students in Project AWAKE who received instruction in the nine career clusters - as compared to students who did not - increased their career awareness as well as their knowledge about the world of work.

3. Project AWAKE: The Developer Questionnaire

Responses derived from the Developer Questionnaire indicated that the teachers reacted favorably toward the project. Questions 1-19 were rated on a five point scale ranging from "Strong Agreement" to "Strong Disagreement." The results indicate that the majority of teachers' responses fell within the range, "Strong Agreement" and "Mild Agreement."

Questions 20-27 were "Yes-No" items, with the majority of respondents indicating "Yes." Thus, positive attitudes are reflected toward the project objectives, the classroom procedures, and the content of career education. Further, the responses to question 28 support the contention that all of the activities were helpful in developing units of instruction. A statistical summary of the results of the Developer Questionnaire appears in Table 23.

TABLE 23 Summary Statistics for Developer Questionnaire

No.	Question	Strong Agreement	Mild Agreement	Neutral	Mild Dis-Agreement	Strong Dis-Agreement
1.	The topic of the unit which I helped develop was significant to me.	11	8	0	1	0
2.	The topic of the unit which I helped develop is relevant to career education	19	1	0	0	0
3.	I was given sufficient information about the project prior to the workshop.	7	8	1	3	0
4.	I was given ample opportunity to define the scope and focus of the individualized unit.	4	10	2	3	0
5.	There was an atmosphere of mutual respect and cooperation between myself and other participants.	15	3	0	1	1
6.	There was an atmosphere of mutual respect and cooperation between myself, the project staff, and the consultants.	19	5	1	0	0
7.	There were available, most of the human and material resources I felt necessary for developing the unit.	1	15	2	1	1
8.	Once I had made some decision, it was easily implemented.	3	12	5	0	0
9.	There was an opportunity to test ideas regarding the unit in real situations or obtain factual information concerning their worth or effectiveness.	4	8	3	1	1

TABLE 23 Summary Statistics for Developer Questionnaire (continued)

No.	Question	Strong Agreement	Mild Agreement	Neutral	Mild Dis-Agreement	Strong Dis-Agreement
10.	Progress was continually assessed by all participants throughout the program.	6	10	4	0	0
11.	Individual differences among the participants were accepted by all.	13	7	0	0	0
12.	There was adequate coordination among those working on a single cluster.	11	8	1	0	0
13.	There was adequate coordination among the various groups working on different units.	7	8	3	2	0
14.	Sufficient attention was paid to group problems.	9	10	0	1	0
15.	Sufficient attention was paid to individual problems in the group.	5	11	1	2	0
16.	I felt my activities were significant and meaningful to the project.	8	10	2	0	0
17.	The philosophy and concepts of career education were taken into consideration in the development of the cluster resource unit.	13	5	1	0	0
18.	The make-up of our group was sufficiently diverse to provide an adequate cross-section of opinion and expertise.	12	5	0	2	0

TABLE 23 Summary Statistics for Developer Questionnaire (continued)

No.	Question	Strong Agreement	Mild Agreement	Neutral	Mild Dis-Agreement	Strong Dis-Agreement
19.	To what degree did you develop the unit around the concept of meeting individual student needs and interests?	4	9	0	0	0

No.	Question	YES	NO
20.	As a result of your experiences in Project AWAKE, are you more aware of problems in education as they relate to career education, specifically your own school and classroom due to your participation in the workshop?	15	1
21.	As a result of your experiences in Project AWAKE, do you possess different idea, persuasions, and viewpoints about education as they relate to career education?	16	1
22.	As a result of your experiences in Project AWAKE, do you anticipate your relationship with your students will change?	11	8
23.	As a result of your experiences in Project AWAKE, do you anticipate your classroom procedures will change?	12	6
24.	As a result of your experiences in Project AWAKE, do you feel increased respect for the opinion of others regarding solutions to educational problems as they relate to career education?	13	4

TABLE 23 Summary Statistics for Developer Questionnaire (continued)

	YES	NO
25. As a result of your experiences in Project AWAKE, are you more willing to work with others to solve instructional problems?	14	3
26. As a result of your experiences in Project AWAKE, are you more able to evaluate certain educational practices of your school?	14	3
27. In building the AWAKE resource unit, was concern given for individual pupil growth and development patterns?	19	1

28. Please evaluate the following list of activities as to the degree of helpfulness in developing the units. Check the appropriate space.

	None	Some	Much	No Response
Group conferences	0	11	8	0
Individual conferences	0	10	10	0
Visitations to resources	1	6	11	0
Reading professional books and teaching materials	2	14	3	0
Demonstrations	1	11	5	3
Examining teaching materials	1	9	8	1
Consultant help	0	9	10	1

The developers' written comments were generally favorable in nature. Apparently, teachers are utilizing innovative methodology, learning about students' needs, and providing for these needs through project experiences and activities. In addition, they feel that career education can enhance the development of a positive self-concept. Appendix B_2 includes samplings of the responses recorded on the Developer Questionnaire.

4. Project AWAKE User Questionnaire

Teachers' responses to the User Questionnaire were generally favorable toward the materials, methodology, and content of the nine clusters units. While the users indicated widespread agreement on most questions, there was little agreement on questions 7 and 15. The results of the User Questionnaire are summarized in Table 24 under the title: "Summary Statistics for User Questionnaire."

In general, the written comments of users were favorable; however, many teachers expressed a need for more specific activities and materials for use with their students. Some of the comments reported on the User Questionnaire can be found in Appendix B_3.

5. Administrators' Responses to the Project AWAKE Questionnaire

An analysis of responses indicated that administrators in general feel that they are informed as to the format and progress of Project AWAKE in their respective schools. (However, some comments suggest that the Project Director should endeavor to keep chief administrative officers informed on a yearly basis).

According to the responses of administrators, children react favorably to project materials and methodology. Also, project methodology appears to be compatible with teaching techniques used in their schools. All of the responses of administrators may be found in Appendix B_4.

6. Panel of Experts

A panel of experts was utilized to rate the nine career clusters in Project AWAKE. The panel included

TABLE 24 Summary Statistics for User Questionnaire

No.	Question	YES	NO
1.	In your opinion was this unit oriented toward career awareness for the elementary student?	19	0
2.	Did you experience difficulty in obtaining the materials or measuring devices listed in the unit?	5	15
3.	Were the instructional activities restricted by the physical facilities of the school?	3	16
4.	Do you feel that by using this guide, you could more effectively utilize state syllabi or local courses of study?	16	2
5.	Had you taught this topic previously without benefit of the guide?	6	13
6.	If you had taught the same unit previously, did the past experience lessen your use of the guide?	4	11
7.	In your printout for individual students, were the number of suggestions relating to content, activities, materials, and measuring devices sufficient?	9	10
8.	Would you consider a laboratory, demonstrating class, or other in-service training of value in helping you learn how to implement units?	12	7
9.	Is the instructional staff at your school adequate for the effective utilization of the guide?	16	3
10.	Were you given sufficient information and guidance prior to using and during the use of the units?	19	0
11.	As a result of using the guide, have you subsequently used other resources more extensively?	16	3

TABLE 24 Summary Statistics for User Questionnaire (continued)

No.	Question	YES	NO
12.	Do you possess different ideas, persuasions, and viewpoints about education and its processes since your experience with the guide?	14	5
13.	Are you more aware of problems in education and career education specifically in your own school and classroom as a result of using the guide?	16	3
14.	Has the use of the materials in Project AWAKE changed the teacher-pupil relationship in your classroom?	12	6
15.	Has the use of the guide influenced your classroom procedures?	9	7
16.	Are you planning to use this unit again?	16	1
17.	Would you like to use other units?	18	0
18.	Would you like to work as part of a team in developing a unit?	13	4
19.	Do you feel that you have adequately been informed as to the format and methodology of Project AWAKE as it is to be used in your classroom?	17	2

four professional educators: two elementary school principals, one classroom teacher, and one college professor. Their qualifications are presented in Appendix B5.

In this first rating, the panel of experts considered the following criteria:

a. Over-all objectives of the program

b. Grade level questions

c. Specific objectives of units

d. Subject matter content

e. Activities and resources

Each unit was rated on a scale from 1 to 10, with 10 being the highest. The mean ratings for each of the nine career units are presented in Table 25.

TABLE 25

Rank Order Ratings of the Nine Revised Units in Project AWAKE as an Experimental Program (10 = highest --- 1 = lowest)

1	Public Service	9.00
2	Transportation	8.50
3	Agri-Business/Nat. Resources	8.25
4	Health	8.00
(6)	Communications	7.75
(6)	Business and Office	7.75
(6)	Manufacturing	7.75
8	Consumer Homemaking	7.50
9	Personal Service	6.00

In the second rating, the panel concerned itself with the following:

a. Methodology utilized in the units

b. Individualization

c. Developing a positive self-concept

The results of these ratings follow in Table 26.

TABLE 26

Rank Order Rating of the Nine Revised Units in Project AWAKE Methodology, Individualization, and Self-Concept (10 = highest --- 1 - lowest)

(1.5)	Transportation	9.00
(1.5)	Public Services	9.00
3	Agri-Business/Nat. Resources	8.75
(4.5)	Business and Office	8.00
(4.5)	Health	8.00
(7)	Communications	7.75
(7)	Consumer Homemaking	7.75
(7)	Manufacturing	7.75
9	Personal Service	7.00

As reported in Tables 25 and 26, all career units were rated between 6 and 9 (on a 10 point scale) by the panel of experts. Apparently, the panel perceived these units to be worthy of use with elementary school children.

The highest rankings on both ratings were given to these career units: Public Service, Transportation, and Agri-Business/Natural Resources. On the other hand, the panel gave a low rating to the unit on Personal Service.

J. Statistical Data: Quantitative Aspects of Project AWAKE

1. Quantity of Exposure of the Nine Cluster Units Within Maturity Levels

   a. Number of revised cluster units developed for each maturity level:

      Number possible: 9 Number revised: 9

   b. Number of students who had the nine cluster units available on their maturity level: 1300

2. Quantity of Individualization

   a. Number of variables on profile sheet:

      Student sheet: 112 Teacher sheet: 124

   b. Number of teacher-pupil conferences to help individualize the student's selection and options within the unit: 775 minimum

   c. Number of individual printouts for students: 775

   d. Number of teachers requesting printouts: 60

   e. Average number of objectives available for each student's selection per unit: 110

   f. Average number of content items available for each student per unit: 270

   g. Average number of instructional activities available for each student's selection per unit: 350

   h. Average number of instructional resources available for each student's selection per unit: 500

   i. Average number of measuring devices available for each student's selection per unit: 200

3. Feasibility of Existing Computer Facilities

a. Computer use: One UNIVAR 9300 32K Tape Drive and Disc Drive Combination

b. Total storage in K's: 32K

c. Storage available to project in K's: 32K (tapes)

d. Total number of available printouts retrieved concerning the nine revised cluster units: 775

K. Conclusions

An analysis of the data indicates that progress has been made toward the attainment of all Project AWAKE objectives. Specifically,

1. The nine revised career cluster units have been rated as desirable modes of instruction;

2. Teachers - on the User and Developer Questionnaires - indicated a strong statement of support for Project AWAKE;

3. The computer is functioning as a valuable aid to classroom instruction;

4. Teachers feel that Project AWAKE has particular strength with respect to materials for instruction, world of work concepts, pupils' individual needs, availability of resources, and methodology;

5. Administrators not only accept the format and progress of Project AWAKE, but support the need for career education in their own respective districts; and

6. Students in the experimental group achieved significantly better than the control groups at all grade levels: K-2, 3-4, and 5-6.

L. Recommendations

For purposes of project refinement, the following recommendations are offered:

1. Consideration should be given to the continuous updating of content and accompanying activities.

In addition, learning units in the primary grades should include more career education experiences and activities;

2. An effort should be made to involve more teachers in the project - particularly teachers in the experimental schools who have not as yet developed career education units;

3. More attention should be given to the quality of the various learning activities.

4. Project supervisors should conduct sufficient in-service training sessions to insure that teachers are using the career education units effectively;

5. Units should be refined periodically and extraneous materials should be removed;

6. Units in the six remaining clusters should be developed, and they should include an orientation toward the future;

7. Feedback from teachers should be incorporated to insure the continual revision of units;

8. Successful ideas and suggestions should be stored in the computer as possible "spin off" activities for other teacher participants; and

9. Revised clusters units should be made available to teachers earlier in the school year.

CHAPTER III

CAREER EDUCATION AT JAY COOKE JUNIOR HIGH SCHOOL

A. Introduction

Philadelphia is the fourth largest city in the United States and the largest in the State of Pennsylvania. With a population of nearly 2,000,000 people, Philadelphia ranks as a major center of commerce, industry, and culture, as well as one of the world's leading ports. Yet despite these attractive features, Philadelphia's employment picture continues to be a rather tenuous one. Consider, for instance, that a disproportionate number of the City's unemployed are young people who lack both the skills and seniority needed to hold a job. Then, too, a sizable number of Philadelphia's unemployed come from the ranks of school dropouts who have failed to complete high school at a time when the high school diploma has become the minimum requirement for employment. It has been estimated that 70 percent of Philadelphia's males over age 25 have not completed high school, and that although the dropout rate is higher for Blacks than Whites, three-fifths of the students quitting school in Philadelphia are White.

Thus, it is the goal of the Philadelphia School District to reverse this trend, and hopefully, offer a career-related curriculum which is attractive to students and based on real-life experiences and needs.

As part of its commitment to prepare all youth for useful and productive roles in the world of work, the Philadelphia School District is developing a career education model program at North Philadelphia's Jay Cooke Junior High School (hereafter referred to as Cooke or the Cooke School.)

The Cooke School, located at 13th and Loudon Streets, has a student population of 1,480 students, of which 280 are seventh graders, 560 are eighth graders and 640 are ninth graders. The student population includes 75 percent Blacks and 25 percent Whites and other groups. The racial composition of Cooke is similar to the total student population of the Philadelphia School District wherein Blacks represent 65 percent of the students and Whites and other racial groups, 35 percent.

Through a Comprehensive Career Education Model (CCEM) Program at Cooke, the School District of Philadelphia is attempting to incorporate meaningful career education

concepts and experiences into a single-site model which includes basic CCEM elements that may be transferred in part, or as a whole, to other schools.

B. Program Objectives

The basic objectives of the Career Education Program at Cooke are:

1. to fuse relevant career education concepts, exploratory experiences, and other career-related resources and/or information into the existing curriculum;

2. to provide career exploratory experiences outside the school and related "hands on" experiences in the school;

3. To provide an effective guidance and counseling program to assist students in using their exploratory and curricular experiences in career planning, decision-making, and self-understanding; and

4. to develop a Career Education Resource Center.

The stated objectives have been designed not only to provide meaningful career orientation and exploratory experiences to the target population, but also to develop positive student attitudes toward the personal, social, psychological and economic aspects of work.

C. The Administrative Structure

The administrative organization of the School District of Philadelphia tends to illustrate its commitment to career education. As shown in Figure 1, Career Education is one of the six major administrative components whose Associate Superintendents and/or Directors report directly to the Superintendent of Schools. Specific program divisions within the Career Education Administrative Unit include (1) the Vocational-Technical Education Division, (2) the Business Education Division, (3) the Career Development Division, and (4) the Skills Centers Division. Each Division, it is to be noted, is headed by its own Director. As indicated in Figure 2 the CCEM Program is one of several being conducted by the Career Development Division.

D. The CCEM Program Staff

The CCEM Project Director functions as the Director of the Division of Career Development. The

FIGURE 1 SCHOOL DISTRICT OF PHILADELPHIA'S RELATIONSHIP TO THE COMPREHENSIVE CAREER EDUCATION MODEL

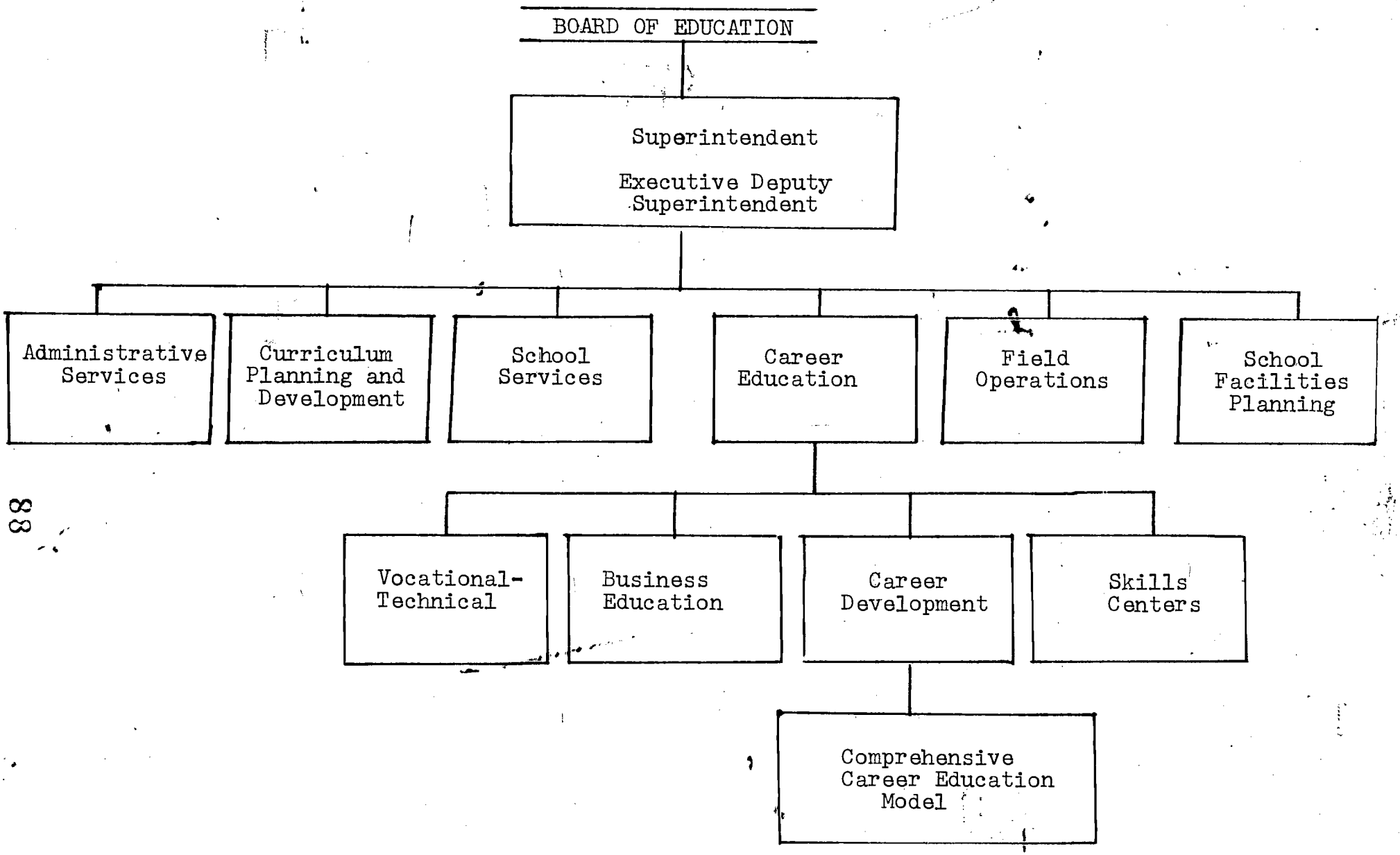
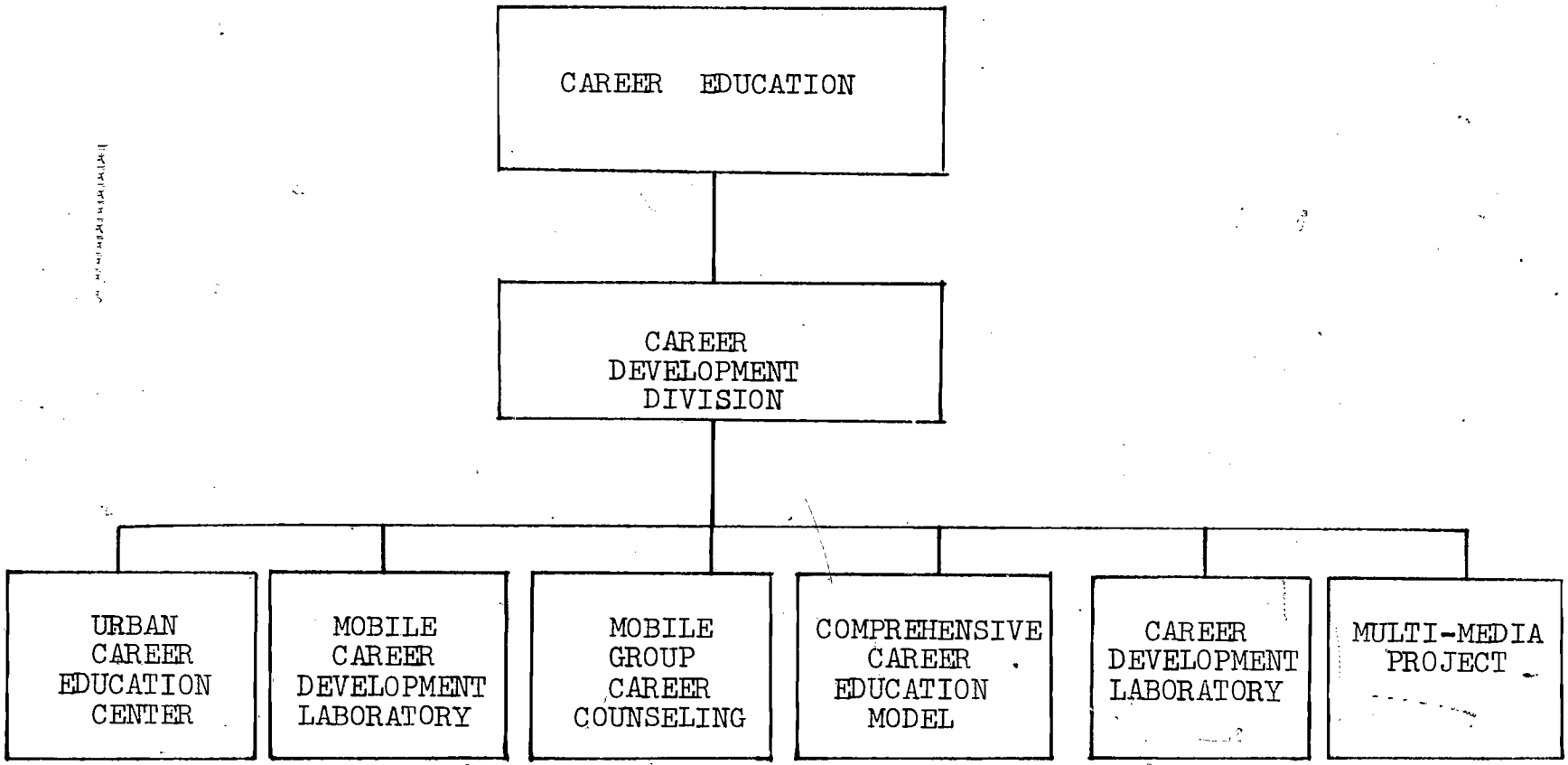


FIGURE 2 SCHOOL DISTRICT OF PHILADELPHIA
PROGRAMS IN THE CAREER DEVELOPMENT DIVISION



operational staff of the CCEM Program includes five full-time personnel: a Project Manager, two Career Development Specialists, one Career Development Assistant who is a paraprofessional, and a Secretary.

The basic responsibilities of the CCEM Program Staff are as follows:

1. Project Manager - responsible for overall program development and implementation;

2. Career Development Specialist (Curriculum Specialist) - responsible for all in-school program activities. Specific responsibilities include consultation with instructors regarding fusion of career education concepts into the curriculum, coordination of the General Steering and Career Staff Committees, assisting in the pre- and post-planning of tours, and participating in group counseling;

3. Career Development Specialist (Community Resource Specialist) - responsible for all out-of-school program activities. Specific responsibilities include arrangement of tours, recruiting of discussants, developing resources for "hands on" exploratory experiences and participating in group counseling;

4. Career Development Assistant - responsible for the physical aspects of the Career Education Center. This includes maintaining a functional Career Education Center, scheduling individual and group periods, and the dispatching of materials and equipment, etc.

E. CCEM Program Facilities

The CCEM Program Office is located on the second floor of the Cooke School. The office is occupied by the Program Manager, one Career Development Specialist for Community Resources, and one Secretary.

The Career Education Center, located on the third floor of Cooke, is housed in a small room that originally was a locker room. It is in the Career Education Center that the Career Development Specialist for Community Resources and the Career Education Librarian perform their varied duties. Housed in the Center are career education informational materials, audio-visual equipment, and a xerox machine. In addition, the office equipment includes work-tables, desks, chairs, filing cabinets, shelves, and bulletin boards. The basic holdings of

the Career Education Center are presented in Appendix C_1.

F. Curriculum Considerations

In order to foster a continuous understanding of and an appreciation for the basic components of career education, the CCEM Program Staff provided several Career Education Workshops for classroom teachers. The thrust of the Workshops was to treat career education as a four-part concept which includes: (1) occupational awareness, (2) educational relevancy, (3) self-awareness, and (4) inter-personal relationships. Not only was attention given to the development of lesson plans which infuse career education into the curriculum, but a continuous effort was made to refine the methods and techniques involved in this process. The career education clusters, modified for Philadelphia, appear in Appendices C_2 and C_3. The U. S. Office of Education clusters, upon which Philadelphia modeled its program, appear in Appendix C_4.

G. The "Teacher Anecdotal Brief"

To document the kinds of career education activities being developed by teacher participants, as well as to determine the extent to which the Career Education Staff and Center resources were being utilized, the following form was completed: "Teacher Anecdotal Brief: Activity in Career Education." This form is a modification of an earlier form used in the first year of the project. In addition, a form entitled "Teacher Request Detail" was also employed. Both of the above forms are included in Appendices C_5 and C_6.

As reported in Tables 27 and 28, the data derived from these two forms document the provision of career education activities in the areas of English, art, home economics, health/physical education and counseling. In addition, the forms also indicate how the CCEM Staff and Career Education Center resources are utilized. When comparing materials and resources activities between the first and second years, the second year involved more activities. Moreover, more teacher research activities occurred in the second year than in the first.

H. Guidance and Counseling Component

One of the main objectives of the CCEM Program is to provide an effective guidance and counseling component to assist students in exploring career clusters, in developing career plans, in making better career decisions and in increasing self-understanding.

TABLE 27 PERCENTAGE OF REQUESTS FOR CAREER EDUCATION ACTIVITIES AND RESOURCES BY SUBJECT-MATTER AREAS (TEACHER ANECDOTAL BRIEF FORM)

CE ACTIVITY/RESOURCE REQUESTED	% ACTIVITY REQUESTED	SUBJECT AREA	% OF REQUESTS BY SUBJECT AREA
Student Research in Center	17	Math	13
Teacher Research in Center	11	English	39
Tour	19	Industrial Art	12
Discussant	8	Business Education	10
SRA Occupational Role Kit	2	Social Studies	5
Finney Occupational Brief	5	Art	12
Chronicle Kits	1	Science	4
Occupational Outlook Handbook	8	Home Economics	2
DOT	1	Health/Phys. Ed.	4
Slides	6		
Film-Strips	5		
Other	17		

TABLE 28 PERCENTAGE OF REQUESTS FOR CAREER EDUCATION ACTIVITIES AND RESOURCES BY SUBJECT-MATTER AREAS (TEACHER REQUEST DETAIL FORM)

CE ACTIVITY/RESOURCE REQUESTED	% ACTIVITY REQUESTED	SUBJECT AREA	% OF REQUEST BY SUBJECT AREA
Curriculum Activity	22	Math	29
Tour	47	English	15
Discussant	12	Industrial Art	12
Audio-Visual	5	Science	35
Class Visit	4	Counseling	4
Counseling (Group)	5	Business	1
Counseling (Individual)	1	Home Economics	1
General	5	Social Studies	3

To enhance career counseling skills, the counseling staff participated in workshops, attended staff development sessions, utilized the Career Education Center and familiarized themselves with the Palmer Career Development Service. As part of their own staff development, counselors spent time with the Career Development Specialist, and utilized Center resources with students on an individual and a group basis. Further, these counselors also participated in tours sponsored by the CCEM Program. Examples of the kinds of participatory activities are found in Tables 27 and 28.

An effort was made during the current evaluation year to provide for more group counseling as part of the CCEM Program. However, this objective was not fully attained at the end of the second year. Beginning in September, 1974, counselors from other school systems were invited to share their "Palmer Program" experiences with CCEM counselors and teachers in the hope of strengthening the counseling and guidance component.

I. Tour Development

Unlike the first year in which uncontrollable events (teachers' strike, operational problems, etc.) adversely affected the utilization of tours, the second year was characterized by marked activity in this area. To increase the meaningfulness of tours, teachers included the tours in their lesson plans and provided for preparatory as well as follow-up experiences. Appendix C_7 includes a list of the tour-sites actually visited during the second year.

An indication of the number of tour requests received - by subject area - is reflected in the data derived from the "Tour Report Form" as presented in Table 29. Further, the "Tour Report Form" (see (Appendix C_8) was utilized to ascertain teacher reaction to the various tours. The results reported in Table 30 would indicate that teachers considered the tours to rate from average to above average in worth.

J. The Career Education Center

As in the project's first year, a main objective of the second year is to develop a viable career education resource center. An examination of the holdings of the Career Education Center (Appendix C_1) tends to show marked progress toward achieving this goal. More than a repository of information and equipment, the Career Education Center is used in the areas of

TABLE 29 PERCENTAGE OF TOUR REQUESTS BY SUBJECT-MATTER AREAS

Area	% of Requests
Math	7
English	31
Social Studies	6
Industrial Arts	15
Counseling	9
Science	10
Art	5
Special Education	1
Health/Phys. Ed.	3
Home Economics	6
Business	5

TABLE 30 PRE- AND POST-TOUR RATINGS

	% BELOW AVERAGE	% AVERAGE	% ABOVE AVERAGE
Pre-planning/preparation with students.....		73	27
Transportation facility.....		73	27
Eating facility.....	9	55	36
One-site hosting.....	9	36	55
Student interest/conduct.....	9	45	45
Time-schedule.....		55	36
Total experience.....		36	73
CE staff involvement.....		45	55
Recommend subsequent tours...		45	55

research, resources identification, curriculum development, individual and group counseling, classroom projects, group discussions, and information utilization and dissemination.

The people who come to the Career Education Center are listed in Table 31, which covers the period from October 13, 1973 to May 24, 1974. Specifically, the Center provided services to more than 3,000 students, conducted 55 tours, and hosted 244 visitors which included 129 parents. As shown in Table 31, the Center was visited by a large number of representatives from other school districts, institutions of higher education, private and state agencies, and various industrial-business-labor groups - visitations which demonstrate further the extent of the Center's growth and development.

While the Center attended to the needs of 2,200 students during the first year, the figure rose to 2,520 in the second year, or an increase of 15 percent. Considering that Cooke enrollments have decreased for the year 1973-74 by 19 percent, this increase in the use of the Career Education Center at Cooke is substantial.

K. Additional Data and Observations

The Comprehensive Career Education Model (CCEM) at Jay Cooke Junior High School continues to operate on the premise of "voluntary" staff participation rather than "imposed" staff participation. The administration and the Career Education Staff believe this approach is not only conducive to involving more participants in the project, but is also a viable approach for implementing the CCEM Program on a cooperative basis.

The CCEM Program evaluation for the year 1973-74 was to have included a research design based on a model recommended at the conclusion of the first year's evaluation. However, operational and administrative constraints prevented the implementation of the proposed research model. Recognizing this limitation, an effort was made to acquire more data by administering the Crites Career Maturity Inventory Attitude Scale - on a pre-test, post-test basis to both experimental and control groups. Originally, 225 students, representing different grade levels, were to comprise each group. However, due to operational problems, etc., it was only possible to include 121 students in the experimental group and 133 students in the control group, resulting in the collection of data half of the amount than that which was originally planned. On the first administration

TABLE 31 CCEM CAREER EDUCATION ACTIVITIES:
OCTOBER 13, 1973 THROUGH MAY 24, 1974

ACTIVITY	
Number of students referred to Career Education Center by teachers	1170
Number of students self-referred to Career Education Center	1350
Number of Guests(1)	115
Number of Parent Visitors	129
Number of Tours(2)	55
Career Orientation (students)	515

(1) see Appendix C_9 for detail

(2) see Appendix C_7 for detail

of the Crites Scales, the experimental and control groups achieved similar group means, that is, 27.77 and 27.55 respectively. However, on the second administration, the experimental group (project participants) and the control group (non-participants) had different mean scores. The mean group score for the experimental group was 31.31 while that of the control group was 23.24. Even considering the limitations already alluded to, the score of the experimental group - higher than that of the control group - was inclined in the appropriate direction. The data for this analysis may be found in Table 32 and Figure 3.

To ascertain student attitudes toward the CCEM Program, the "Student Evaluation" form was administered to the experimental group, or more specifically, the student participants. The form, which can be found in Appendix C_{10}, is partially represented in Table 33 which includes student responses to questions 2 through 9. Included in the data in Table 32 are the responses of the total experimental group which, in turn, was divided into two groups: one comprised of students on the Student Career Education Committee; the other, comprised of students in the CCEM Program but not on the Student Career Education Committee. For the most part, the students in both groups appear to have favorable attitudes toward the CCEM Program.

Within the scope of the CCEM Program, some special experiences and activities were employed. As an example, Bell Telephone of Pennsylvania participated in Cooke's Career Education Program by conducting seminars, tours, and simulated work experiences which were designed to increase student awareness of the world of business as well as their own career interests. Thus, the involvement of Bell Telephone in the CCEM Program was an excellent illustration of utilizing a major community resource to effectuate the goals of career education. An outline of the Bell program is included in Appendix C_{11}.

On another occasion, a tour to a large flower show was followed by marked student interest in the areas of biology, horticulture, science, and landscape architecture. Moreover, students directed their attention toward gardening, developing terrariums, and maintaining the school's garden. Added to these is the enthusiasm of the Student Career Education Committee itself which, through its own efforts, conducted "Talk-Ins" and promoted various activities designed to facilitate career education.

As a way of keeping the school district informed about career education, the CCEM Program Staff distri-

TABLE 32 CONTROL AND EXPERIMENTAL GROUP SCORES FOR TWO ADMINISTRATIONS OF THE CAREER MATURITY INVENTORY ATTITUDE SCALE

	1st Administration	2nd Administration
(1)	Control Group = 27.55	Control Group = 23.74
(2)	Experimental Group = 27.77	Experimental Group = 31.31

(1) N = 133 (2) N = 121

FIGURE 3 CONTROL AND EXPERIMENTAL GROUP SCORES FOR TWO ADMINISTRATIONS OF THE CAREER MATURITY INVENTORY ATTITUDE SCALE

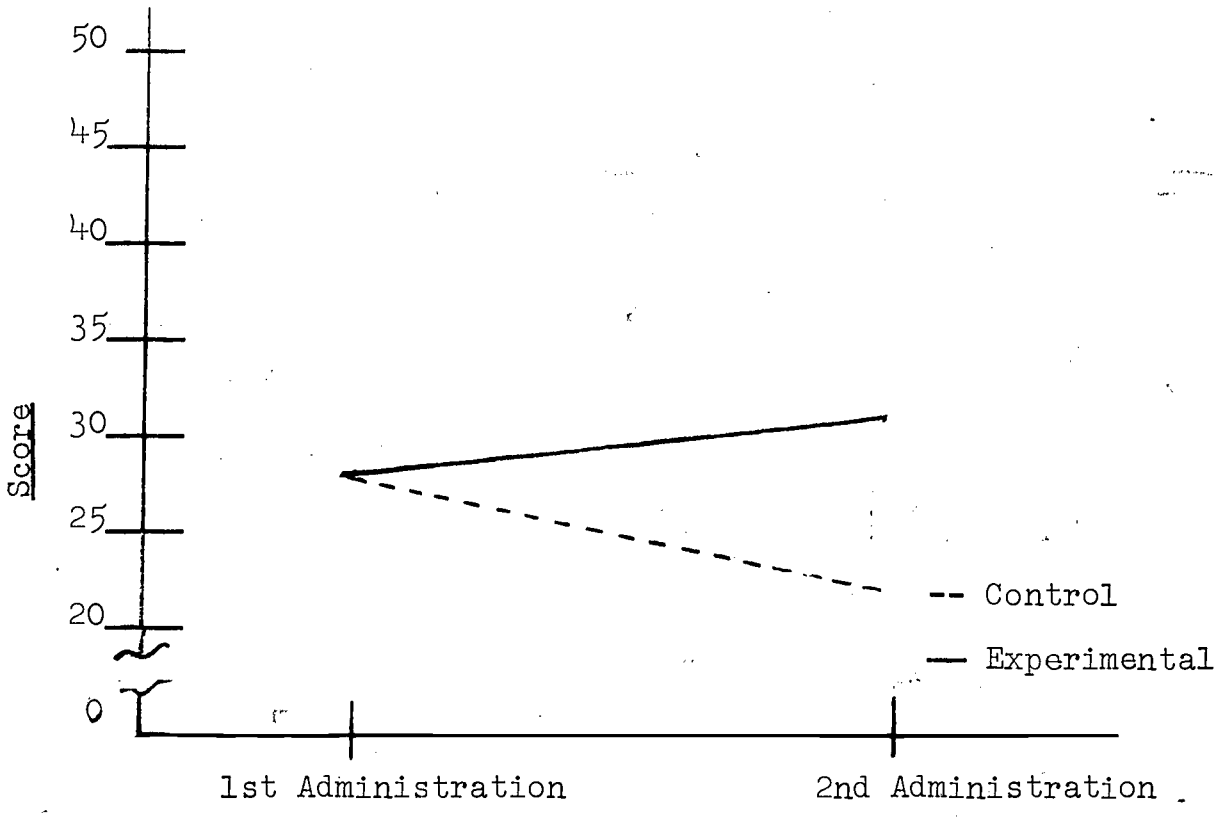


TABLE 33 PERCENT OF STUDENT RESPONSES FOR SEVEN ITEMS ON STUDENT EVALUATION QUESTIONNAIRE

ITEMS	% RESPONSES FOR ALL STUDENTS COMPLETING EVALUATION			% RESPONSES FOR STUDENTS NOT ON STUDENT CAREER EDUCATION COMM.			% RESPONSES FOR STUDENTS ON STUDENT CAREER EDUCATION COMM.		
	NC	Y	N	NC	Y	N	NC	Y	N
2...like using the C.E. Career Center	-	100	-	-	100	-	-	100	-
3...like the people who work in the Center	18	82	-	8	92	-	30	70	-
4...talking with the C.E. counselors	5	82	13	-	100	-	10	80	10
5...learning about jobs and careers	5	95	-	-	100	-	10	90	-
6...the C.E. tours	18	82	-	17	83	-	20	80	-
7...learning more about subject selection for next year	23	64	3	17	75	8	20	60	20
8...the way the Center is arranged	14	86	-	25	75	-	10	90	-
9...having some C.E. information in your subject classes	23	73	4	17	83	-	20	70	10

NC = No Comment, Y = Yes, N = No

buted minutes of meetings, flyers, brochures, and other informational materials. Thus, an attempt was also made to communicate all aspects of the program to students, parents, and community groups.

L. Recommendations

The CCEM Program, completing its second year, is a dynamic and viable program. Built on the premise of voluntary staff involvement, the CCEM Program has developed a career education approach that could be adapted to other school districts. While the Program has made respectable gains this year, the following recommendations are offered for the purposes of program refinement during the third and final year:

1. Formulate and implement a final Program evaluation plan that can be implemented immediately;

2. Utilize consultants in the evaluation design as well as in questionnaire development and/or selection. The evaluation design should focus on the basic hypotheses of the CCEM Program to determine if the Program has had a positive impact on the participants;

3. Document Program activities to illustrate continuous Program development;

4. Give more emphasis to the development of the guidance and counseling component of the Program;

5. Continue to include all subject-matter areas in the Program and concentrate on infusing career education concepts and activities into daily and unit lesson plans;

6. Continue to incorporate tours and "hands on" experiences in the curriculum with emphasis on pre- and post-tour planning and discussions;

7. Continue to serve as a resource Program to other schools and school systems; and

8. Continue toward the development of an effective information dissemination system.

CHAPTER IV

CAREER EDUCATION AT THE McKEESPORT AREA SCHOOL DISTRICT

A. Introduction

The McKeesport Area School District can be described as a very dynamic and innovative system. Included in this School District is a population which characterizes most larger urban areas; that is, its center city runs the gamut from professional workers and businessmen to Poor Whites and Blacks, with the latter group constituting about 15 percent of the total population. Out of a total of 10,000 students in the School District, 2,000 have been classified as poverty cases as determined by Federal guidelines.

The McKeesport Area School District has 16 elementary schools (K-6), two junior high schools (7-9), and one comprehensive senior high school (10-12). The total staff numbers 517, with 461 of these functioning as classroom teachers and 56 others as support personnel.

Enrolled in the sixteen elementary schools are 5,000 students, or half of the District's total school population. At the secondary level, the respective enrollments are as follows: McClure Junior High School, 975; McKeesport Junior High School, 1,425; and McKeesport Area Senior High School, 2,500.

Until the 1970-71 school year, the District operated two high schools on a common campus. One building housed the academic program; and the other, the vocational. In the 1971-72 school year, the two student bodies and programs were merged into a comprehensive high school which included a vocational-technical department. This merger was a major step toward removing the stigma attached to students enrolled in a separate vocational high school.

Besides implementing a major Career Education Project the McKeesport School District operates a Day Care Program (funded in excess of a million dollars), provides clinical experiences for teacher education majors from the University of Pittsburgh, and is developing a model for improving career counseling in the schools.

The scope of the McKeesport Career Education

Program is extensive. While there are officially 130 teachers and approximately 2,500 students involved in the project, these totals may be below the true "estimate of participation" when the following are concluded: in-service education activities; publications distribution; promotional activities; and other less direct infusion strategies.

For reporting purposes, at least, Table 34 is included to identify the schools, number of staff members, and number of students involved in the McKeesport Project. As indicated earlier, these are base figures and do not represent the more extensive "estimate of involvement" on the part of teachers and students who are not directly involved in the project.

TABLE 34

PARTIAL LISTING OF CAREER EDUCATION ACTIVITY
McKEESPORT AREA SCHOOL DISTRICT

School	Staff Participating	Students Involved*
Fawcett	8	150
Fifth Avenue	6	112
George Washington	17	319
Grandview	11	206
Highland	5	94
Lincoln	9	169
Third Street	2	37
White Oak	15	281
McKeesport J. H. S.	35	656**
McClure J. H. S.	18	337**
Senior High School	6	112**
Total	132	2,473

* Based on 18.75/1 ratio
** Low estimate since teacher sees several classes per day

B. The Cornerstones of the McKeesport Program

The Career Education Program at McKeesport supports the notion that all individuals should be engaged in activities which will help them to explore their own interests, to evaluate their own abilities and to arrive at decisions about their own lives. These experiences occur in a nexus of approaches which have been identified as reality bound, self-oriented and personalized. It is upon these three philosophical cornerstones that McKeesport is building its Career Education Program. Below these cornerstones are explained in more detail.

1. Reality Bound Assumptions

   a. Subject matter has a "now" or current focus.

   b. Subject matter is related to an on-going process.

   c. Individuals learn best when they can see, hear, smell, and touch those things about which they are expected to learn.

   d. The abstract becomes meaningful when based on "real" experiences with people, data and things.

   e. Education, based on real people, things, and data, takes on a more significant dimension.

   f. The transition from the reality of school to the reality of the world of work is implemented by infusing the two.

   g. The individual's awareness that reality in our society revolves around the world of work is expanded.

   h. An attitude of flexibility is fostered so that the student may meet his needs in an ever-changing occupational world.

2. Self-oriented Assumptions

   a. Awareness of self (in terms of needs, attitudes, values, interests and abilities) is expanded so that the individual learns who he is and what he would like to become.

b. The individual's awareness is enhanced in terms of his societal, work, family, and community roles.

c. The individual is given an opportunity to explore areas where he possesses interests and/or skills.

d. The individual becomes more adept at communicating about himself and to others.

e. The individual is aided in the development of decision-making competencies.

f. The individual's awareness of how the educational program is related to him is expanded.

g. The individual is aided in developing an understanding and appreciation of the importance, dignity, and inter-relatedness of all occupations.

h. The individual can work on any specific aspect of a unit that meets his needs.

i. The individual experiences an awareness of his feelings when he is involved in specific self-related tasks.

j. The individual uses himself as a starting point in his search for a place in the world of work.

3. Personalized Assumptions

a. Schools become "needs oriented" to allow for individual differences.

b. The individual develops an appreciation of his own differences in attitudes and needs and relates them to the differences in attitudes and needs of others.

c. The curriculum affords the individual the opportunity to interact with workers in varied occupations so that he develops feelings about where he best fits into the occupational world.

d. As the individual pursues his education, he is given experiences which correlate his needs, abilities, and interests to occupational areas.

e. Through the process of career education, teachers become more aware of the various feelings of each student toward himself, toward others, and toward his contacts in the world of work.

f. The teacher creates an atmosphere in which the student is free to test himself in a variety of experiences using his own interests and abilities.

g. The school focuses on helping each student to fully develop his own potentiality.

C. Career Education Activities: The Elementary Level

The major activities conducted at the elementary school level include:

1. Short-term activities - one hour or less - with emphasis on the affective domain;

2. Work-related experiences - one half day to one day - children are prepared for work-related experiences, have the experiences, and then are debriefed;

3. The use of community resource people;

4. The utilization of "interest centers";

5. Learning situations - extending from one to four weeks; and,

6. The use of Career Education Units - from one to four weeks in length.

D. Career Education Activities: The Junior High School Level

At the junior high school level, the focus of activities is on the:

1. practical arts component;

2. academic component;

3. work-related experience component; and

4. general guidance component.

E. Career Education Activities: Senior High School Level

Activities at the senior high school level, while developmentally related to experiences at the previous levels, are directed toward intensified efforts and experiences in the:

1. work-related experience component;
2. values awareness component;
3. Career Information Center;
4. Placement Office; and
5. general guidance component.

F. The Evaluation of Process and Product Concerns

1. Process Concerns

   a. To what extent do career education activities and experiences address the following process components: reality bound, self-oriented and personalized?

   b. To what extent do these process components include: learning excursions; hands-on activities; subject matter tie-in; occupational information resource persons; and role playing?

2. Product Concerns

   To what extent do the activities observed result in improved student knowledge, attitudes, self-concepts, etc.?

G. The Educational Process: The Elementary Program

The program of five elementary schools is coordinated by career education coordinators. The five schools are: George Washington, Model, Highland, Fawcett, and Fifth Avenue. The other eleven elementary schools have career leaders (school counselors) who perform the same duties as the career education coordinators. While the career education coordinators are supported by project funds, the career leaders receive their support from other sources.

On an on-going basis teachers are encouraged to work toward the project goals while maintaining the process elements of: reality bound, self oriented, and personalized.

On February 15, 1974, a career education workshop was held for teachers. Teachers were encouraged to not only develop career education activities, but to share their ideas with the career education coordinators and career leaders who, in turn, would share them with other teachers. The responsibility of securing resources was shared between the teachers and the career coordinators and leaders.

Reported below are findings which are based on twenty-six observations in the five elementary schools, and the observations of two activities which occurred later in the year. For descriptive and statistical purposes all ratings have been combined and included in Table 35.

1. The results indicate high pupil and teacher behavior. Many activities were given somewhat lower ratings due to a deficiency in an element or elements (statements one through fourteen under "The Activity" on the Rating Sheet - Appendix D). For each of these elements, the activity* received a rating of one as an indicator of total absence. Based on the quality and quantity of each element, a rating from two to five was applied. Unobserved elements received a rating of six and were not considered in the statistical techniques.

2. No structure existed to guarantee equivalent career education experiences for all pupils in each of the elementary schools.

3. Regardless of the supposed relay system (teacher, career leader, coordinator, teacher), no visitations by other school personnel within the McKeesport Area School District were observed.

4. One of twenty-four activities involved economics. (see Table 36).

5. Four of twenty-four activities involved technology.

* activities observed - Many activities occurred which were not seen by evaluators.

TABLE 35

FREQUENCY OF OVERALL MEANS ON THREE SECTIONS OF THE RATING SHEET

Behavioral Rating Scale Intervals	Very Poor 0-1.5	Poor 1.6-2.5	Marginal 2.6-3.5	Fair 3.6-4.5	Good 4.6-5.5	Very Good 5.6-6.5	Excellent 6.6-7	N
Pupil Behavior	0	0	1	2	5	4	6	6
Teacher Behavior	0	0	1	1	5	2	8	7

Activity Rating Scale	0-1.5	1.6-2.5	2.6-3.5	3.6-4.5	4.6-5	N
Activity	0	8	8	3	4	1

TABLE 36

FREQUENCY OF EFFORTS IN FIVE EMPHASIS AREAS

Educational Level	Emphasis				
	Economics	Self	Society	Technology	Careers
Elementary	1	18	11	4	13
Junior High	1	29	6	14	26
Senior High	0	4	0	0	2
Total	2	51	17	18	41

6. Less than one-half of the activities involved the emphasis of society (eleven activities)..

7. Thirteen activities of the twenty-four emphasized careers.

8. Of the twenty-four activities, eighteen dealt with self.

9. Five junior high activities involved a resource person (Table 37).

TABLE 37

FREQUENCY OF ACTIVITIES BY INSTRUCTIONAL APPROACH AND EDUCATIONAL LEVEL

Educational Level	Instructional Approach: Learning Excursions	Hands-on Activities	Occupational Information	Resource Person	Role Playing	Subject Matter Tie-In
Elementary	6	17	10	1	15	8
Junior High	2	25	22	5	11	4
Senior High	3	3	3	2	2	0

10. Six of the twenty-four activities involved learning excursions. This is commendable since a gas shortage and bus drivers' strike occurred during the year.

11. Eight activities were coordinated with subject matter.

12. Occupational information was provided by ten activities.

13. Fifteen activities utilized role-playing.

14. Seventeen of the twenty-four activities utilized hands-on activities.

15. Most of the observed activities were reality-bound (20 activities), self-oriented (21), and/or personalized (24). (Table 38).

TABLE 38

FREQUENCY OF ACTIVITIES BY CHARACTERISTIC AND EDUCATIONAL LEVEL

Educational Level	Characteristic		
	Reality-Bound	Self-Oriented	Personalized
Elementary	20	21	24
Junior High	24	23	25
Senior High	3	3	3

16. The in-depth unit approach used extensively in the elementary program, particularly by LaRosa at George Washington and Docherty and Robb at Fawcett, limited career awareness by limiting the variety of careers which could be investigated during the school year. It's a question of depth versus breadth. The careers covered by these units were very well understood by the students.

17. The sharing of facilities, such as the bank and supermarket at Lincoln School (Kasper and Winter), allowed the students to experience a greater number of career areas and permitted a greater association and sharing among students in separate self-contained classrooms.

18. During the two observations of the same fourth grade class at Fawcett Elementary School (Allison), the method of instruction was a series of file folders with activities printed in each. If this method was used repeatedly as indicated by the observations, the student reaction would have been and appeared to be the same as would result from repeated use of any other instructional approach.

19. At the schools having a career leader rather than a coordinator, only six observations were made in two schools. If other career education activities were implemented during the process evaluator's visitations, they were not communicated to the project director or coordinator.

20. Although two visitations were made to the Fifth Avenue School, no career education activities were seen on those occasions.

21. The George Washington students who had work-related experiences visited other schools to share their learning with other children - a very commendable practice.

H. The Education Process: The Junior High Program

While career awareness was emphasized at the elementary level, career exploration was the major area of attention at the junior high school level. In addition, the following components were included: the work-related experience component; the academic component; and the occupational exploration program.

In the work-related experience component students were given the opportunity of observing and interacting with workers. A subsequent activity, involving small groups of ninth graders, was designed to explore personal values, interests, and occupations and workers. Both students and workers evaluated this experience.

The academic component provided seventh grade students with the opportunity of exploring nine of the fifteen USOE career clusters. Seventh graders were exposed to the fields of Personal Service, Marketing and Distribution, Communications and Media, and Marine Science. Eighth graders, on the other hand, explored Hospitality and Recreation, Agri-Business and Natural Resources, Fine Arts and Humanities, and Public Service and the Environment. The ninth graders attended to such dimensions as Technology, Self, Society and Economics.

As part of the exploratory process, the Ohio Vocational Interest Survey was administered to ninth graders. The results were then interpreted to both students and parents in both large and small group

settings. Following the interpretation sessions, students and parents perused career information materials related to the identified interest areas.

In the third component, students explored the remaining six USOE clusters in non-academic courses. At McClure Junior High School, using a rotation approach, students experienced several clusters. However, the component structures differed at each of the junior high schools in terms of cluster emphasis and time. A description of the ten areas of exploration follows:

Typing - The students will learn the basics of typing; the parts of the typewriter and their functions, and at least the home keys.

Business Communication - The students use the ten-key adding machine, write checks, work problems, give cash discounts, compute sales tax, fill orders, and read I.B.M. cards. They spend a limited time (about one or two days) skimming just the surface of each area.

Clothing and Textiles - focuses on the processes involved in the care, selection and construction of clothing and textile products with emphasis on the careers involved in the fashion industry. After the completion of the course the student will indicate not only a knowledge of production techniques, but also a verbal knowledge of the processes involved and the careers related to each process.

Food Preparation and Nutrition - highlights the importance of good nutrition in maintaining a healthy body by allowing the student to plan and prepare nutritious meals and snacks in relation to careers in the Food Service Industry as well as home preparation. After the student has prepared and served a variety of snacks and breakfast or luncheon foods, the student will verbally relate the importance of good nutrition to a healthy body and will list in writing at least five out of twenty food careers that might interest him.

Individual, Family and Community - not only gives an insight into the internal operations of medical services and community agencies and to related careers

but also discusses the inter-relationship and importance of the individual's role in each. After taking the course, the student could characterize a value of self, family and community.

Retailing and the Consumer - brings into focus the relationship between the consumer and the retailing process. After completing the course, the student will verbally trace the movement of goods from the retailer to the consumer and verbally identify the decision-making process of the consumer.

Construction - allows the student to explore his interest in the construction field by becoming acquainted with and solving basic construction problems. It is also designed for the exploration of industrial knowledge, industrial methods, and the development of such attitudes that will enable students to adjust more adequately to the duties and responsibilities of a democratic society dominated by the work and products of industry.

Manufacturing - The purpose of industrial arts manufacturing is to explore materials, tools, machines, and methods of industry. Objectives: To stress the importance of good work habits and their relationship to the everyday world of work. To identify fields of endeavor in the world of industry. To condition the individual to the importance of working in harmony toward a common goal.

Power Technology - The purpose of power technology is to explore methods of extracting and utilizing energy from the environment. Objectives: To stress the importance of energy and its related fields and their relationship to the everyday world of work. To identify fields of endeavor in the world of power technology and related industries. To allow and encourage exploration and utilization of scientific principles. To a greater extent, identify power and its role of employer as seen from an ecological viewpoint, along with seeking a practical means of conservation of the vital resource. Power technology includes: Introduction and Safety, Simple Power Sources, Electric Motor-Generator, Internal Combustion, External Combustion, Steam Diesel, Circuitry, Atomic-Solar-Chemical Power.

Visual Communications - It is the purpose of this course in visual communications to allow the student to explore and become acquainted with the technology

that man has developed to assist him in visually communicating attitudes, ideas and information from one person to another. The course will encompass the media of drafting, printing, silk screening, photography, engraving, and film making to illustrate effective communication..

At McKeesport Junior High School, the exploratory areas were different from those at McClure. The areas emphasized at McKeesport were: Clothing and Textiles, Construction, Health and Community Services, Manufacturing, Electrical Systems, Foods and Nutrition, Power and Transportation, Business Explorations and Visual Communications.

Additional experiences were afforded seventh and eighth grade students through both the Career Occupation Program for Exploration (CORE) and the Occupational Exploration Program (OE), programs which were begun this year.

The findings of a survey on the junior high school program follow:

1. The results (Table 39) indicate high pupil and teacher behavior ratings. Several activities were given lower activity ratings due to a deficiency in an element or elements (statements one through fourteen under "The Activity" rating sheet - Appendix D).

2. The preparation sessions of the Work-Related Experience were very well organized, enabling the students to select a worker or job very appropriate to their interests and values.

3. Selection of approximately six students at a time to participate in the Work-Related Experience decreased the number of students who were able to take advantage of this highly successful offering.

4. The late beginning of the Work-Related Experience reduced the number of students able to participate. This problem will not exist during the 1974-75 academic year.

5. Three additional units were implemented at McKeesport Junior High School - two by the same teacher.

TABLE 39

FREQUENCY OF OVERALL MEANS ON THREE SECTIONS OF THE RATING SHEET

Behavorial Rating Scale Intervals	Very Poor 0-1.5	Poor 1.6-2.5	Marginal 2.6-3.5	Fair 3.6-4.5	Good 4.6-5.5	Very Good 5.6-6.5	Excellent 6.6-7	N
McClure COPE								
Pupil Behavior	0	0	1	3	2	3	0	0
Teacher Behavior	0	0	0	2	3	4	0	0
McKeesport OE Program								
Pupil Behavior	0	1	1	3	4	5	3	0
Teacher Behavior	0	2	0	3	3	3	4	2
COPE and OE Program								
Pupil Behavior	0	1	2	6	6	8	3	0
Teacher Behavior	0	2	0	5	6	7	4	2
All Junior High School Activities								
Pupil Behavior	0	1	2	8	7	8	5	0
Teacher Behavior	0	2	0	5	7	8	6	3

Activity Rating Scale Intervals	0 - 1.5	1.6 - 2.5	2.6 - 3.5	3.6 - 4.5	4.6 - 5	N
COPE Activity	0	6	3	0	0	0
OE Activity	0	5	7	2	2	1
COPE and OE Activity	0	11	10	2	2	1
All Activities	0	11	13	3	3	1

6. A definitive career education structure at the junior high level existed.

7. A disproportionate amount of time appeared to be spent at McKeesport Junior High School by the coordinator, probably due to the location of her office.

8. Communication with the elementary coordinators appeared to be infrequent, regardless of the fact that the junior high program should be a follow-up to the elementary program.

9. The COPE component at McClure Junior High School rated lower than the OE component at McKeesport Junior High School in the following activity categories: (See Table 40).

   a. The student has an opportunity to explore his environment. (-.7)

   b. The student has an opportunity to experiment with his environment. (-.8)

   c. The student has an opportunity to gain experience with the use of materials. (-.3)

   d. The student has an opportunity to gain experience with the use of equipment. (-.2)

   e. The student has an opportunity to learn about symbols and language used in the working world. (-.6)

   f. The student has an opportunity to interrelate with other students. (-.5)

   g. The student observes the relationship of school subjects to various occupations. (-.6)

   h. The student receives information on various occupations. (-.9)

   i. The student learns to interact with resource persons. (-1.4)

   j. The student receives an awareness of various persons, jobs, or situations via role-playing and/or simulation. (-.9)

k. The student receives sensory stimulation. (-.3)

l. The student receives an awareness of concepts in: 1. technology (-.4), 2. society (-.7), 3. self (-.4).

10. Communication with the senior high school coordinator and the project director appeared to occur at least three times each week.

11. COPE was rated higher than the OE Program on the following two items:

    a. The student has an opportunity to express curiosity by questioning. (-.6)

    b. The student receives an awareness of concepts in economics. (-.1)

12. Little difference was felt to exist between the Power area of COPE and the Electrical Systems area of the OE Program.

13. The industrial arts facilities available at McClure Junior High School were felt to be ineffectively utilized. A greater potential exists for program growth at McClure Junior High School in the industrial arts area than at McKeesport Junior High School due to the available facilities.

14. One of the thirty-one activities observed at the junior high schools involved economics.

15. Of the thirty-one activities, six involved society.

16. Fourteen activities concerning technology were implemented.

17. Twenty-six of the thirty-one activities involved career information.

18. Twenty-nine activities dealt with the area of self.

19. Of the thirty-one activities observed, two involved learning excursions.

20. Five activities utilized resource persons.

21. Role-playing was utilized in eleven activities.

TABLE 40

MEANS FOR EACH ACTIVITY ELEMENT BY COPE OR OE PROGRAM

Scale = 1 - 5

		OE	COPE
1.	The student has an opportunity to express curiosity by questioning.	3.0	3.6
2.	The student has an opportunity to explore his environment.	3.8	3.1
3.	The student has an opportunity to experiment with his environment.	3.4	2.6
4.	The student has an opportunity to gain experience with the use of materials.	3.9	3.6
5.	The student has an opportunity to gain experience with equipment.	4.2	4.0
6.	The student has an opportunity to learn about symbols and language used in the working world.	4.4	3.8
7.	The student has an opportunity to interrelate with other students.	3.8	3.3
8.	The student receives information on various occupations. (Occupational Information)	4.0	3.1
9.	The student observes the relationship of school subjects to various occupations. (Subject Matter Tie-In)	1.6	1.0
10.	The student learns to interact with resource persons. (Resource Persons)	2.4	1.0
11.	The student becomes familiar with community resources beyond the school. (Learning Excursions)	1.0	1.0
12.	The student receives an awareness of various persons, jobs, or situations via role-playing and/or simulation. (Role-playing)	2.9	2.0
13.	The student receives sensory stimulation. (Hands-on Activities)	4.6	4.3
14.	The student receives an awareness of concepts in:		
	a. Technology	2.4	2.0
	b. Economics	1.0	1.1
	c. Society	1.8	1.1
	d. Self	3.6	3.2

22. Occupational information and hands-on experiences were part of twenty-two and twenty-five activities, respectively.

I. The Education Process: Senior High School Program

To develop career awareness, career exploration and career preparation, the following were used with the ninth grade students: a Co-Op Program, a work-related experience, the Career Education Resource Center, and teachers and the career education coordinator.

The Co-Op Program involved job placement for students who wanted to work on a part-time basis, as well as for those who intended to enter the labor market upon graduation. Job orientation by the Placement Coordinator was given on a one-to-one basis, and appropriate employment forms were completed. At the end of each marking period a Cooperative Training Report was completed by the employer to which he or she was assigned.

Students in the work-related experience were selected to not only enhance "reality-bound" experiences, but to provide feedback relative to the success of the work-related experience. Students systematically visited job sites and participated in "job seeking" experiences-the latter of which were shared with classmembers.

Available for use to students was a Career Education Resource Center. Housed in a trailer, the Center provided books, occupational guides, pamphlets and other materials for both student and teacher use.

The findings of the senior high school program follow:

1. The senior high program lacked teacher involvement; i.e., no teachers were involved in any activities observed by the process evaluator.

2. Based on student and faculty attitude, the senior high coordinator did not appear to be well supported. This deficiency affected the program's success at the high school level. Classroom efforts by the coordinator had a moderate level of success.

3. The resignation of the department heads at the beginning of the school year inhibited faculty

involvement in the classroom component of the senior high program.

4. The Work-Related Experience began operation late in the school year, thereby making this useful activity available to a limited number of students.

5. The Career Education Resource Center was felt to be off the main thoroughfare of the school. This location affected the Center's accessibility and its level of use.

6. The Job Placement Coordinator did not meet the needs of the majority of students due to his many other responsibilities.

J. Recommendations

1. Elementary

a. A structured program must be established, which would provide a framework, but not hinder the creativeness nor the individuality of the school personnel. The structured program would:

(1) eliminate repetition;

(2) guarantee that all elementary students have the opportunity to develop the same degree of career awareness; and

(3) permit the junior high personnel to establish expectations, determine student needs, and, subsequently, design a more progressive program, rather than catch-up procedures for those students in schools not presently involved to a great degree in career education.

b. Greater communication must be developed between all the schools and the career leader, the coordinator and project director. This would facilitate the sharing of ideas and equating of efforts.

c. Activities involving the concepts of economics and technology need to be implemented at all grade levels.

d. Activities need to utilize a greater variety of instructional methods, particularly learning excursions and resource persons. This should not be difficult assuming the gas shortage and bus driver strike will not reoccur.

e. The relevancy of subject matter should be emphasized to a greater degree by demonstrating the uses of the subject skills in the occupational tasks.

f. The variety of careers touched upon must be expanded to provide the career awareness required for career decision-making.

2. Junior High

a. Activities involving economic and societal concepts must be implemented at all grades.

b. Greater communication with the elementary coordinators is needed to develop a progressive well-organized program of career education from the first grade to the twelfth.

c. The faculties of the two junior high schools need to view each other as resources from which already proven ideas can be drawn and not regard each other as opponents in the contest to achieve greater success. The faculties can learn from the successes and failures of each other.

d. The Work-Related Experience is very successful and should begin at an earlier time in the school year for the purpose of making the activity available to the greatest number of students.

e. All nine units must be implemented in the Academic Component to meet the needs of the students.

f. The junior high coordinator should more equally distribute her time in each school.

g. Learning excursions, resource persons and role-playing should be utilized to a greater degree.

h. To prevent substituting career education for subject matter, the subject matter must be correlated with the career tasks; i.e., teaching both subject matter concepts and skills and career concepts and skills through the same activity.

3. Senior High

a. The senior high coordinator needs to be knowledgeable about the junior high efforts. This would enable her to create expectation levels for awareness and exploration and, thereby, assess needs and design a suitable program which will culminate in total student preparedness for the world of work.

b. The teachers must become involved in the design and implementation for the courses to be relevant to the needs of the students; i.e., to prepare the students for the world of work.

c. To encourage faculty members to implement career education in their classes, greater coordinator effort is required. The faculty must be convinced of the importance of career education and to design and implement a well-defined program.

d. The Work-Related Experience must begin at an earlier time in the school calendar to make this successful activity available to the greatest number of students.

e. The Career Education Resource Center needs to be in a readily accessible location in order to increase the level of useage.

f. Additional aid should be provided to the Job Placement Coordinator to register, prepare, correlate and evaluate more students with jobs.

K. <u>The Educational Product: The Elementary Program</u>

To determine the effects of project activities on the children involved, matched samplings of third and fifth grade students were compared. The comparisons, made between highly involved and moderately involved students, revealed that the third graders who were

highly involved could list more occupations in one minute than their less involved counterparts. There were no significant differences between the two groups with respect to self-concept or attitude toward school.

The highly involved fifth graders were superior to the moderately involved group with respect to self-concept development and attitude toward school. There was no significant difference between groups on the number of occupations listed.

The findings derived from the third and fifth grade comparisons are reported in Tables 41 and 42 respectively.

TABLE 41

COMPARISON OF 52 HIGHLY INVOLVED AND 39 MODERATELY INVOLVED THIRD GRADE STUDENTS ON THREE CRITERIA

Criteria	Highly Involved Mean	Moderately Involved Mean	Difference	t	Significance Level
Occupations Listed	5.05	3.70	1.35	1.88	.10
Inferred Self-Concept	3.89	3.95	.06	.47	NS
Attitude Toward School	18.39	20.36	1.97	1.77	NS

TABLE 42

COMPARISON OF 63 HIGHLY INVOLVED AND 36 MODERATELY INVOLVED FIFTH GRADE STUDENTS ON THREE CRITERIA

Criteria	Highly Involved Mean	Moderately Involved Mean	Difference	t	Significance Level
Occupations Listed	7.17	7.08	.09	.11	NS
Self-Concept	20.27	16.94	3.33	3.71	.01
Attitute Toward School	29.65	25.48	4.17	3.70	.01

Besides student comparisons, unit evaluations were reviewed. The teachers' evaluations - derived from a scale of 1 to 5 - were generally favorable toward the career education units. However, there was less acceptance by teachers of the Learning Excursion Activities. This may have occurred as a result of the gasoline shortage and/or the school bus drivers' strike. Apparently, teachers who could arrange trips found them quite helpful (1.67). Moreover, the overall receptivity of teachers to the unit is reflected in item 10 in which all teachers indicated they would use the unit again. Table 43 includes the items and their corresponding ratings.

To ascertain additional effects, pre- and post-tests (locally developed) were administered at the beginning and end of the unit. Tables 44 and 45 treat these data statistically. As shown in Table 44, children engaged in the units of Anthropology, Senses and Agriculture significantly improved. The other units- while reflecting improvement - were not significant statistically. Table 45 includes the results of the pre- and post-tests administered to the elementary children in the academic component. Of the eighteen units attempted, fifteen showed statistically significant improvement; exceptionally marked improvement occurred

TABLE 43

TEACHERS' UNIT EVALUATIONS - ELEMENTARY LEVEL

N = 8

		Average Rating
1.	On the whole, would you say that the unit was: Successful 1 2 3 4 5 Unsuccessful	1.87
2.	To what extent were the objectives as set forth for the unit met? Satisfactory 1 2 3 4 5 Unsatisfactory	1.87
3.	The student reaction to the unit was: Positive 1 2 3 4 5 Negative	1.37
4.	Were you able to obtain all the materials that you needed for the unit? Yes 5 No 3 The materials were: Excellent 1 2 3 4 5 Poor	2.12
5.	Were you able to arrange the learning excursions that you felt would be most beneficial? Yes 3 No 5 The learning excursions were: Helpful 1 2 3 4 5 Not helpful	1.67
6.	Were you able to involve the resource person whom you felt would be most beneficial? Yes 8 No 0 The resource people were: Informative 1 2 3 4 5 Uninformative	1.71
7.	Please indicate the ease or difficulty of implementing the six elements of Career Education in your unit by circling the appropriate number:	
	Learning Excursions Easy 1 2 3 4 5 Difficult	3.87
	Hands-on Activities Easy 1 2 3 4 5 Difficult	1.50
	Subject Matter Tie-in Easy 1 2 3 4 5 Difficult	2.00
	Occupational Information Easy 1 2 3 4 5 Difficult	2.87
	Resource Persons Easy 1 2 3 4 5 Difficult	1.86
	Role Playing Easy 1 2 3 4 5 Difficult	1.50

TABLE 43

TEACHERS' UNIT EVALUATIONS - ELEMENTARY LEVEL (continued)

								Average Rating
8. Please indicate the degree to which the six elements were received by the students:								
Learning Excursions	Well Received	1	2	3	4	5	Poorly Recv'd.	3.40
Hands-on Activities	Well	1	2	3	4	5	Poorly	1.25
Subject Matter Tie-in	Well	1	2	3	4	5	Poorly	1.75
Occupational Information	Well	1	2	3	4	5	Poorly	2.25
Resource Persons	Well	1	2	3	4	5	Poorly	1.43
Role Playing	Well	1	2	3	4	5	Poorly	1.50

9. Did you feel the individual students learning took place more with:

Subject Matter 3 Physical Skills 0
Self-Awareness 5

10. Would you implement this unit again? Yes 8 No 0

TABLE 44

PRE-POST TEST PERFORMANCE - ELEMENTARY SCHOOL PROGRAM

Career Education Unit	Degrees of Freedom	Pre-Mean	Post-Mean	Improvement	% Improvement	t	Significance Level
Anthropology	24	10.00	11.52	1.52	15.20	2.31	.05
Senses*	11	9.25	11.42	2.17	23.46	2.36	.05
Seeing*	11	7.17	6.92	-.25	-3.49	-.64	NS
Smelling*	11	5.42	5.83	.41	7.56	.58	NS
Tasting*	12	6.38	6.38	0	0	0	NS
Medical Services	15	25.06	26.62	1.56	6.22	1.39	NS
Foods and Nutrition	21	6.36	7.09	.73	11.45	.88	NS
Pharmacology	45	2.76	3.52	.76	27.54	1.29	NS
Values and Needs	21	6.86	7.54	.68	9.91	1.21	NS
Cooperation	22	23.35	23.26	-.09	-.38	-.11	NS
Agriculture	31	7.94	8.62	.68	8.56	1.94	.10

*Awareness Unit

TABLE 45

PRE-POST TEST PERFORMANCE --- ACADEMICALLY TALENTED PROGRAM

Career Education Unit	Degree of Freedom	Pre-Mean	Post-Mean	Improvement	% Improvement	t	Significance level
Wild Life	9	3.80	16.80	13.00	342.10	7.62	.01
Minerals and Gems	8	1.55	28.00	26.45	1706.45	24.75	.01
Forestry (A)	9	.20	2.70	2.50	1250.00	5.84	.01
Environmental Change	28	3.65	8.69	5.04	138.08	5.52	.01
Environmental Quality	29	1.66	8.23	6.57	395.78	10.67	.01
Housing	23	1.87	10.33	8.46	452.40	48.60	.01
Mining	9	6.20	8.60	2.40	38.71	2.51	.05
Wild Life (A)	12	6.00	19.16	13.16	219.33	9.28	.01
Forests	4	2.00	12.20	10.20	510.00	5.42	.01
Sounds - Environment	10	17.09	22.27	5.18	30.31	5.87	.01
Rivers and Navigation	14	1.67	4.07	2.40	143.71	4.43	.01
Forestry (B)	6	6.57	19.57	13.00	197.86	9.30	.01
Energy	14	10.93	20.73	9.80	89.66	5.31	.01
Transportation	25	1.77	6.73	4.96	280.22	14.23	.01.
Waste Disposal	11	9.58	14.58	5.00	52.19	4.12	.01
Wild Life (B)	51	57.03	61.15	4.12	7.22	1.04	NS
Endangered Species	23	5.42	6.12	.70	12.91	1.31	NS
Space Travel	4	10.60	14.00	3.40	32.07	1.67	NS

in the units on Minerals and Gems, and on the one on Forestry. The overall assessment reveals one of significant improvement for students involved in the academically talented components.

Table 46 represents the time students spent in planning, implementation and evaluation activities. Notably, the increase in student time was siginificant, as was the reduction of non-productive activities from 52 percent to 14 percent.

TABLE 46

SHIFT IN TYPE OF STUDENT ACTIVITY

N = 72

Activity	% of time engaged in Activity Pre	Post	Change	t	Significance Level
Planning	14%	28%	+ 14%	2.52	.05
Implementation	27%	43%	+ 16%	2.63	.01
Evaluation	7%	15%	+ 8%	1.74	NS
Non Productive	52%	14%	- 38%	6.32	.01

Another indicator of the effectiveness of the career education units is revealed in the responses of 65 elementary students in grades 4-6, which are presented in Table 47. Not only were they favorable toward all elements of the work related experience program, but all 65 of the students, or 100% of them, indicated they would recommend this program to other students.

As a final check of program effectiveness at the elementary level, a questionnaire was administered to a cross section of 4th and 5th grade students involved in the Career Education Program. The results, in Table 48, indicate that the students felt they had improved in reasoning, communications, self-awareness, and inter-personal relations - skills they considered important to career planning. While most of the fifth grade respondents had seen a counselor on their own, most fourth grade respondents had not. Moreover, a large percentage of students in both grades felt the schools did not have sufficient career education materials.

TABLE 47

INTERVIEW RESPONSE OF ELEMENTARY STUDENTS GRADES 4-6 REGARDING THE WORK RELATED EXPERIENCE PROGRAM

N = 65

	Elementary Students N	%
1. Source of initial information about the program:		
Teacher	38	58.5
Counselors	12	18.5
School Paper	15	23.0
2. How well prepared for the experience?		
Very Well	52	80.0
Somewhat	11	16.9
Not Prepared	2	3.1
3. Do you think you know more about the world of work as a result of this experience?		
Yes	60	92.3
No	2	3.1
?	3	4.6
4. Do you think you know more about yourself as a result of this experience?		
Yes	60	92.3
No	5	7.7
?	0	0.0
5. How would you rate your overall experience on the job site?		
Very Good	55	84.6
Good	10	15.4
Fair	0	0.0
Poor	0	0.0
6. How do you rate the "Sharing Session" with your class after the work related experience?		
Very Good	47	72.3
Good	13	20.0
Fair	5	7.7
Poor	0	0.0

TABLE 47

INTERVIEW RESPONSE OF ELEMENTARY STUDENTS GRADES 4-6 REGARDING THE WORK RELATED EXPERIENCE PROGRAM (continued)

N = 65

	Elementary Students N	%
7. Would you recommend this type of program to other students?		
Yes	65	100.0
No	0	0.0
?	0	0.0

TABLE 48

QUESTIONNAIRE RESPONSES OF 36 FOURTH AND 60 FIFTH GRADE STUDENTS INVOLVED IN CAREER EDUCATION PROJECT

		Yes	No	?
1.	Has your ability to think and reason improved this year?			
	Fourth Graders	28	2	6
	Fifth Graders	54	1	5
2.	Has your ability to get your ideas across when speaking to others improved this year?			
	Fourth Graders	19	3	13
	Fifth Graders	47	7	7
3.	Has your knowledge of your interests and abilities increased this year?			
	Fourth Graders	25	4	6
	Fifth Graders	48	5	7
4.	Are your interests and abilities important in selecting a career (job)?			
	Fourth Graders	27	2	6
	Fifth Graders	54	3	3
5.	Has your ability to understand and get along with others increased this year?			
	Fourth Graders	23	8	4
	Fifth Graders	46	4	10
6.	Do you think understanding and getting along with others is important?			
	Fourth Graders	24	6	4
	Fifth Graders	59	1	0
7.	Do you think you know more about jobs and the world of work than you did in September (start of school)?			
	Fourth Graders	29	2	4
	Fifth Graders	55	2	3

8. How many times have you seen a counselor on your own this year?

	Never	One	Two	Three	Four	Five or more
4th graders	24	3	2	2	1	3
5th graders	29	9	4	2	3	13

TABLE 48

QUESTIONNAIRE RESPONSES OF 36 FOURTH AND 60 FIFTH GRADE STUDENTS INVOLVED IN CAREER EDUCATION PROJECT (continued)

9. If you visited a counselor this year, how do you rate the visit?

	4th Graders	5th Graders
Counselor was a big help	8	17
Counselor was some help	2	6
Counselor was little help	2	3
Counselor was no help	0	4
Never visited counselor	23	29

10. Does your school have enough books, slides, records, magazines, etc., about jobs and careers?

	Yes	No	?
Fourth Graders	15	12	7
Fifth Graders	20	31	8

One of the most productive aspects of the program is the Mini-Mall Unit located at the George Washington School. Focusing on hands-on experiences, resources persons, reality-bound concepts, etc., the Mini-Mall included almost all of the classes in the school, concentrated on various career skills, and was enthusiastically received by students and parents.

An overall observation is that the elementary school career education program is functioning successfully.

L. The Educational Product: The Junior High School

The junior high school coordinator, unlike the elementary coordinators who had too many schools to deal with, concentrated on two schools, namely, McKeesport and McClure Junior High Schools. The results appear to demonstrate a viable, successful program.

To assess program effectiveness, two junior high school groups were compared; one was highly involved, the other, moderately.

Table 49 indicates no significant differences between the groups on the measure of self-concept (Semantic Differential). On the other hand, the highly involved students were significantly higher than the moderately involved students with respect to attitude toward school. Additional comparisons were made by comparing sub-test scores on the Career Maturity Inventory (CMI) - an inventory that measures: (1) involvement in the choice process,(2) orientation toward work, (3) independence in decision making, and (4) conceptions of the choice process.

As reported in Table 49, there were no significant differences between groups on career attitude; however, the highly involved group did significantly better than the moderately involved on these CMI dimensions: (1) self-appraisal, (2) occupational information, (3) goal selection, (4) career planning, and (5) problem solving. With respect to percentile rank, the highly involved group was higher than the national average (U.S. norms) - achieving as high as the 79th percentile on the criterion of career planning. Apparently, the career education project has had a

positive effect on the highly involved students with respect to the development of career planning skills included in the CMI.

TABLE 49

COMPARISON OF 50 HIGHLY INVOLVED AND 43 MODERATELY INVOLVED JUNIOR HIGH SCHOOL STUDENTS ON THREE MEASURES

Criteria	Highly Involved Mean		Moderately Involved Mean	Difference	t	Significance level
Self Concept	66.56		66.70	.14	.08	NS
Attitude toward school	54.90		48.93	5.97	2.30	.05
Career Attitude CMI*	33.55	(55th)**	32.37	1.18	1.13	NS
Self-Appraisal CMI*	13.33	(65th)**	11.12	2.21	2.97	.01
Occupational Information CMI*	15.33	(71st)**	12.93	2.40	2.67	.01
Goal Selection CMI*	12.67	(62nd)**	10.67	2.00	2.60	.05
Career Planning CMI*	13.57	(79th)**	11.37	2.20	2.33	.05
Problem Solving CMI*	10.25	(71st)**	8.05	2.20	2.95	.01

*Career Maturity Inventory - McGraw-Hill, Inc.
**U. S. Percentile Rank for Career Maturity Inventory

A further indication of program success is reflected in comparisons between the locally developed pre- and post-tests which appear in Table 50. Using the career education units in the COPE program as a basis, significant improvement resulted in all units, ranging upward to 102.5 percent for the Clothing and Textiles Unit.

Table 51 indicates a similar success with OE program units, all of which showed significant improvement at the .01 level. Related to these positive results is the fact that both the COPE and OE units have been carefully designed and implemented.

To ascertain the effectiveness of the Work-Related Experience program, 14 students (out of more than 65 participants) were interviewed at McKeesport Junior High School. The responses, presented in Table 52, show a high level of satisfaction in the areas of program information, preparatory experiences, world of work awareness, self-concept, on-the-job experiences, and counseling. Student support of the Work-Related experience is reflected in item 7 wherein all 14 students indicate that they would recommend this type of program to other students.

As part of the junior high school Career Education program, the Ohio Vocational Interest Survey (OVIS) was administered to ninth grade students as an additional dimension. The results of the OVIS were interpreted to both students and parents, an experience that both believe should be continued. However, while agreeing that the OVIS should continue to be administered, more than half the students reported the OVIS was not used to help them in their planning. This practice, in terms of systematic career planning, needs to be addressed if the OVIS is to be effectively utilized. The fact that a large number of parents who attended interpretation sessions at McKeesport and McClure would repeat a similar experience is testimony of their endorsement of administering and interpreting the OVIS. Specifics on the OVIS experience are reported in Tables 53, 54, and 55.

M. The Educational Product: The Senior High School

Since "self-awareness" is an essential ingredient of the McKeesport project, a senior high coordinator conducted a unit on value-structure, needs and motivation. To assess differences, if any, the California

TABLE 50

PRE-POST TEST PERFORMANCE
JUNIOR HIGH SCHOOL - COPE PROGRAM

Career Education Unit	Degrees of Freedom	Pre-Mean	Post-Mean	Improvement	% Improvement	t	Significance Level
Health Careers	50	6.51	8.78	2.27	34.87	11.59	.01
Clothing & Textiles	50	2.80	5.67	2.87	102.50	14.17	.01
Communications* & Media	169	23.63	25.63	2.05	8.69	4.11	.01
Foods & Nutrition	136	13.31	14.94	1.63	12.25	6.08	.01
Business	168	8.61	11.31	2.70	31.36	8.59	.01
Construction & Communications	159	8.77	11.81	3.04	34.66	10.07	.01
Manufacturing & Technology	141	10.27	11.92	1.65	16.07	8.37	.01

*McKeesport Junior High School.
All others are McClure Junior High School.

TABLE 51

PRE-POST TEST PERFORMANCE
JUNIOR HIGH SCHOOL - OE PROGRAM

Career Education Unit	Degrees of Freedom	Pre-Mean	Post-Mean	Improvement	% Improvement	t	Significance Level
Power & Transportation	191	11.84	13.32	1.48	12.50	5.98	.01
Manufacturing	197	12.96	15.91	2.95	22.76	10.07	.01
Public Health	227	17.68	19.78	2.10	11.88	9.27	.01
Food Service & Nutrition	196	11.22	13.21	1.99	17.74	8.86	.01
Electricity & Electronics	217	10.50	12.92	42	23.05	9.28	.01
Construction	229	12.86	15.56	2.70	21.00	14.56	.01
Clothing & Textiles	210	21.78	23.42	1.64	7.53	5.21	.01
Business	193	11.52	17.52	6.00	52.08	24.38	.01
Visual Communications	187	9.99	11.45	1.46	14.61	8.23	.01

TABLE 52

INTERVIEW RESPONSES OF JUNIOR HIGH SCHOOL STUDENTS REGARDING THE WORK-RELATED EXPERIENCE PROGRAM

N = 14

1. Source of initial information about the program:

Other Student	0
Teacher	0
Counselors	14
Career Education Staff	0
Administration	0
School Paper	0

2. How well prepared for the experience?

Very Well	Somewhat	Not prepared	No response
8	4	0	2

3. Do you think you know more about the world of work as a result of this experience?

Yes 14 No 0 ? 0

4. Do you think you know more about yourself as a result of this experience?

Yes 13 No 1 ? 0

5. How would you rate your overall experience on the job site?

Very Good	Good	Fair	Poor	Very poor
10	1	3	0	0

6. How do you rate the counseling sessions held before and after going on the job site?

Very Good	Good	Fair	Poor	Very Poor
5	6	3	0	0

7. Would you recommend this type program to other students?

Yes 14 No 0 ? 0

TABLE 53

INTERVIEW RESPONSES OF MCKEESPORT JUNIOR HIGH SCHOOL STUDENTS REGARDING THE OHIO VOCATIONAL INTEREST SURVEY (OVIS)

N = 14	Yes	No	?
1. Do you remember taking the OVIS?	14	0	0
2. Did someone go over the results with you?	13	1	0
3. Did the OVIS help you know more about yourself?	9	4	1
4. Did the OVIS and interpretation session help in planning your career?	6	7	1
5. Should the school continue giving and interpreting the OVIS?	10	4	0

TABLE 54

PARENTS' EVALUATION OF OHIO VOCATIONAL INTEREST SURVEY INTERPRETATION SESSION - MCKEESPORT JUNIOR HIGH SCHOOL

N = 78	Very Helpful	Helpful	Satis-factory	Undecided	Not Helpful	Total Responses
1. On the whole, the evening's activities were:	27	37	10	1	2	77
2. The introductory session (slides, transparencies, general explanation) was:	16	29	26	2	5	78
3. The small group discussion with the counselor was:	48	24	1	0	1	74
4. The "stations" with the occupational information were:	19	32	16	3	0	70

	Yes	Undecided	No	
5. Would you attend another program of this type?	64	6	5	75

TABLE 55

PARENTS' EVALUATION OF OHIO VOCATIONAL INTEREST SURVEY INTERPRETATION SESSION - MCCLURE JUNIOR HIGH

N = 62

	Very Helpful	Helpful	Satis-factory	Undecided	Not Helpful	Total Responses
1. On the whole, the evening's activities were:	29	28	5	0	0	62
2. The introductory session (slides, transparencies, general explanation) was:	14	16	15	5	1	51
3. The small group discussion with the counselor was:	33	18	6	0	0	51
4. The "stations" with the occupational information were:	18	16	16	3	1	54

	Yes	Undecided	No	
5. Would you attend another program of this type?	54	2	1	57

TABLE 56

AVERAGE RANK ORDER CORRELATION BETWEEN VALUES MEASURED BY THE CALIFORNIA LIFE GOALS INVENTORY AND PERCEIVED BY THE INDIVIDUAL STUDENT

	N	Average Rank Order Correlation	t	Significance Level
Career Education Students	30	.373		
Control Group	29	.290	.92	NS

Life Goals Inventory (CLGT) was administered to the project seniors and a similar control group. Specifically, the CLGI includes these scales:

1.	Esteem	5.	Leadership	9.	Self-Expression
2.	Profit	6.	Security	10.	Independence
3.	Fame	7.	Social Service		
4.	Power	8.	Interesting Experiences		

Both groups were asked to rank these scales in terms of their own "scale of values." Scores on the instrument were then compared with self-perceived scores and then both groups were compared. As reported in Table 56, the differences were insignificant. However, an analysis of the inventory scores showed that the career education participants were more aware of their value structure than were those in the control group. It is probable that the small number of students affected the attainment of statistical significance.

The major career education activity at the senior high school consists of a Work-Related Experiences program. Utilizing work sites in harmony with the 15 career clusters, the career education staff conducted an extensive program with 42 students visiting over 50 job sites. Student activities included being briefed, signing contracts, spending time on a job, and being debriefed.

Of the students involved, 85% did preliminary research prior to the on-site visitation, 77.7% considered the on-site job as a career possibility, and 60% considered the experience helpful. (20 percent were undecided and an additional 20 percent considered the experience as not being helpful). Table 57 adds another dimension of support, since the employers' evaluations of the Work-Related Experience program were generally favorable.

Another evaluative source was derived from the responses of nine students - all of whom indicated the experience increased understanding about themselves and the world of work. While the preliminary counseling sessions may have been somewhat less effective, the sessions occurring after the job site visit were rated high. (See Table 58).

In addition to a values unit and the work-related experience, a Career Information Center has been

established in a trailer adjacent to the high school. This mobile unit houses a variety of career information and materials. Operating the facility is a trained behavioral scientist who provides services to 900 students or more.

Table 59 indicates that the typical user is an academic student who visited the Center more than five times and was referred by his counselor. The main reasons for visiting the center are to find out more about careers and to review college catalogs and materials. It appears by the ratings in Table 59 that the Career Information Center is an important component of the total high school effort.

TABLE 57

EMPLOYERS' EVALUATION OF WORK-RELATED EXPERIENCE PROGRAM INTERNS

1. The student was on time. Yes 28 No 3

2. The student's appearance was:

Neat	1	2	3	4	5	Sloppy
2	22	4	2	0	0	0

3. The student's interest could be described as:

Curious	1	2	3	4	5	Apathetic
20	0	5	4	1	0	0

4. The student seemed to have done research about the area of work before visiting you.

Yes 23 No 4 ? 3

5. The student's questions were:

Relevant	1	2	3	4	5	Irrelevant
19	0	4	6	0	0	0

6. The student's overall attitude towards your field of work was:

Enthusiastic	1	2	3	4	5	Unenthusiastic
20	0	4	4	1	1	0

TABLE 58

INTERVIEW RESPONSE OF SENIOR HIGH SCHOOL STUDENTS REGARDING THE WORK-RELATED EXPERIENCE PROGRAM

	Number of Responses
1. Source of Initial Information about the Program:	
Other Student	3
Teacher	1
Counselors	5
Career Education Staff	2
Administration	0
School Paper	1
2. How well prepared for the experience?	
Very Well	1
Somewhat	5
Not prepared	3
No Response	0

3. Do you think you know more about the world of work as a result of this experience?

Yes 9 No 0 ? 0

4. Do you think you know more about yourself as a result of this experience?

Yes 9 No 0 ? 0

5. How would you rate your overall experience on the job site?

Very Good	Good	Fair	Poor	Very Poor
8	0	1	0	0

6. How do you rate the counseling sessions held before and after going on the job site?

	Before	After
Very Good	0	7
Good	5	2
Fair	4	0
Pocr	0	0
Very Poor	0	0

7. Would you recommend this type program to other students?

Yes 9 No 0 ? 0

TABLE 59

PERFORMANCE OF SENIOR HIGH SCHOOL STUDENTS ON CAREER INFORMATION CENTER QUESTIONNAIRE

N = 33

1. My course of study is:

Academic	17	General	7
Business	8	Vo-Tech	1

2. How many times have you visited the Career Information Center (trailer)?

Never	One time	Two times	3-5 times	More than 5
0	2	1	8	22

3. Who first suggested that you visit the Career Information Center?

No one	7
Teacher	9
Counselor	11
Administrator	0
Student	6

4. What were the main reasons for your visit to the Career Information Center:

Find out more about myself	1
Find out more about careers	24
Get material for a term paper	5
Review college catalogs and materials	16
Take a test	0
Just to kill time	1
Other	3

5. How do you rate the materials, books, films, etc., located in the Career Education Center (trailer)?

Very good	Good	Fair	Poor	Very Poor
21	12	0	0	0

6. How do you rate the services provided by the Career Information Center Staff?

Very Good	Good	Fair	Poor	Very Poor
23	10	0	0	0

Another component of the Career Education program is the Placement Service. Among its chief functions are counseling students, conducting follow-up studies, preparing students for interviews and assisting them in funding full-time, part-time and summer employment. In a follow-up study of the 1973 graduates - in which 55% of those queried responded - it was found that only 10.28 percent of the respondents were unemployed. Efforts are now being directed toward reducing the 10.28 percent figure.

In Table 60 are the results of questionnaires administered to 36 terminal students. Apparently, these students find their counselors available, and are satisfied with the counselors who have been assigned to help them. In addition, over 90 percent of the students know about the Placement Service, with 72 percent of them rating its effectiveness from good to very good.

While the responses of the academic students tend to parallel those of terminal students, - that is, are generally favorable toward the Placement Service - these apparently utilize the service less than terminal students. As reflected in Tables 60 and 61. there needs to be more of a promotion of services if the Placement Service is to help students implement their career decisions.

While the record of placement has been good for locating full-time jobs, it has only had a modicum of success in locating part-time and summer employment - expecially for college prep students. One problem is that the Placement Officer - who is doing an acceptable job under the circumstances- must divert his time and efforts between counseling and cooperative work-placement duties.

N. Evaluator's Comments

The Career Education Program is experiencing greater difficulty in the high school than it is in either the elementary or junior high schools. Communication between the high school staff and the career education staff has not been effective. In effect, Career Education is not a viable effort at the high school level, not is there any evidence of career education activities in the classroom. It is important to alleviate this deficiency during the 1974-75 academic year.

TABLE 60

PERFORMANCE OF TERMINAL STUDENTS ON COUNSELING AND PLACEMENT SERVICE QUESTIONNAIRE

N = 36

1. My course of study is:

Academic	8	General	15
Business	8	Vo-Tech	5

2. When I need to see my counselor he is able to meet with me:

Right away	11
Within an hour	6
That same day	12
That same week	5
Longer than a week	2
Never tried to meet with counselor	-

3. I would go to my counselor for help with:

	Yes	No
My schedule	32	4
Finding a job	18	18
My future plans	25	12
Getting along with my teachers	15	21
Getting along with my friends	2	34
Getting along with my parents	2	34
Understanding my feelings	7	29

4. I have gone to see a counselor on my own:

Never	One time	Two times	3-5 times	more than 5
0	1	7	11	17

5. I am satisfied with the counselor that has been assigned to me. Yes 31 No 5

6. Do you know that MASH has a Placement Office to help students secure part-time, summer and permanent jobs? Yes 34 No 2

7. Has the Placement Office (Mr. Colarusso) helped you get a part-time job? Yes 8 No 29

8. Has the Placement Office (Mr. Colarusso) helped you get a summer job? Yes 6 NO 30

TABLE 60

PERFORMANCE OF TERMINAL STUDENTS ON COUNSELING AND PLACEMENT SERVICE QUESTIONNAIRE (continued)

9. Has the Placement Office (Mr. Colarusso) helped you get a permanent job for after graduation?

Yes 4 No 32

10. Has the Placement Office (Mr. Colarusso) helped you prepare for interviews and filling out job applications?

Yes 11 NO 25

11. How do you rate the services provided by the Placement Office?

Very Good	Good	Fair	Poor	Very Poor
9	17	4	3	3

TABLE 61

PERFORMANCE OF COLLEGE PREPARATORY STUDENTS ON COUNSELING AND PLACEMENT SERVICE QUESTIONNAIRE

N = 41

1. My course of study is: Academic 37 Business 3
General 1

2. When I need to see my counselor he is able to meet with me:

Right Away	14
Within an hour	6
That same day	12
That same week	7
Longer than a week	1
Never tried to meet with counselor	

3. I would go to my counselor for help with:

	Yes	No
My schedule	39	2
Finding a job	12	29
My future plans	31	8
Getting along with my teachers	14	27
Getting along with my friends	5	35
Getting along with my parents	7	34
Understanding my feelings	13	28

4. I have gone to see a counselor on my own:

Never	One time	Two times	3-5 times	more than 5
-	1	3	11	26

5. I am satisfied with the counselor that has been assigned to me.

Yes 35 No 5

6. Do you know that MASH has a Placement Office to help students secure part-time, summer and permanent jobs?

Yes 31 No 10

7. Has the Placement Office (Mr. Colarusso) helped you get a part-time job?

Yes 0 No 41

8. Has the Placement Office (Mr. Colarusso) helped you get a summer job?

Yes 0 No 41

TABLE 61

PERFORMANCE OF COLLEGE PREPARATORY STUDENTS ON COUNSELING AND PLACEMENT SERVICE QUESTIONNAIRE (continued)

9. Has the Placement Office (Mr. Colarusso) helped you get a permanent job for after graduation?

Yes 0 No 41

10. Has the Placement Office (Mr. Colarusso) helped you prepare for interviews and filling out job applications?

Yes 3 No 38

11. How do you rate the services provided by the Placement Office?

Very good	Good	Fair	Poor	Very Poor
4	14	11	2	0

O. Staff Development

The success of career education depends on teacher acceptance and teacher participation. Recognizing this fact, the project staff has been working closely with teachers. In addition to individual and group activities, the project staff has conducted two large-scale in-service training sessions. In Table 62 are the results of the workshop evaluation by elementary school teachers, and in Table 63 are those derived from junior high school teacher . The elementary school participants were exposed to labs addressing: Feelings, Stereotypes, Community Use, Interest Centers, Learning Stations, and Units. All of the labs were well received with 101 teachers indicating a better understanding of Career Education and 169 indicating the concept as appropriate for classroom instruction.

Table 63 indicates that the junior high school faculty favorably received the Career Education In-Service Program. The program components - General Orientation, Career Orientation, Decision-Making, and Unit Development - all received average ratings in excess of 3 (satisfactory). While affirmative attendance ratings ranged from 40 percent (English teachers) to 85 percent (science teachers), when all aspects are considered, junior high teachers tended to be less than enthusiastic (based on ratings under 4.0). Despite these results, the staff development component appears to have made a positive impact at both the elementary and junior high school levels. During the 1974-75 academic year efforts should be made to focus on providing in-service education for senior high school teachers through more frequent, but smaller scale in-service sessions. Likewise, certification credit for participants should be explored.

P. Dissemination and Publications

McKeesport has been very successful in informing the public and its teachers about its project activities. Thirty-five articles have already appeared in newspapers and professional journals. In addition, the Career Education Courier, produced by the project staff, has been useful in keeping the school district informed.

Inquiries about the McKeesport Project have come from numberous educators both within and outside of Pennsylvania. In addition, twenty-one groups visited

TABLE 62

ELEMENTARY TEACHERS' EVALUATION OF CAREER EDUCATION IN-SERVICE TRAINING SESSION

N = 235

Please rate the labs which you attended by checking the rating category next to the appropriate lab.

	% Very Helpful	% Helpful	% Satis-factory	% Not Helpful
Lab #1: FEELINGS	31.30	35.88	29.00	3.82
Lab #2: STEREOTYPES	17.56	45.04	27.48	9.92
Lab #3: USING THE COMMUNITY	12.50	48.33	31.67	7.50
Lab #4: INTEREST CENTERS	47.70	33.91	16.10	2.30
Lab #5: LEARNING STATIONS	52.66	34.57	11.70	1.06
Lab #6: THE UNIT	15.00	44.00	36.00	5.00

1. I feel the workshop as a whole was:

Helpful.....	122	Unnecessary...	26
Interesting...	142	Dull.....	13
Too Long.....	49	Too Short.....	1
Clear.....	41	Vague.....	10

2. As a result of the workshop, I feel that my understanding of Career Education is:

Clearer ... 101 Unchanged ... 98 More confused ..6

3. The workshop activities were:

Direct and to the point ..	64
Irrelevant.....	17
Fun as well as helpful....	146
Ridiculous	8

4. The ideas and experiences I got in this workshop were:

Not applicable to my classroom ...	25
Can be used in my classroom	169

TABLE 63

SUMMARY OF RESPONSES TO EVALUATION OF CAREER EDUCATION IN-SERVICE PROGRAM
JUNIOR HIGH SCHOOL

Participants reacted to five statements by indicating one of the number responses:

5: Very Helpful 4: Helpful 3: Satisfactory 2: Unsatisfactory 1: Not Helpful

This Chart Denotes the Average Rating Response:

	English	Science	Social Studies	Total Group
1. On the whole, the day's activities were:	3.0	3.6	3.7	3.5
2. The general introductory session (program explanation and unit development explanation) was:	3.0	3.1	3.6	3.2
3. The "Career Orientation" station was:	3.4	3.5	3.5	3.5
4. The "Decision Making" station was:	3.5	3.7	3.4	3.5
5. The "Unit Development" station was:	3.6	3.8	3.6	3.7

6. Would you like to attend another program of this type?

This Chart Indicates the Number of Responses and the Percentage They Reflect:

	English	Science	Social Studies	Total Group
Yes	4/40%	11/85%	7/64%	22/65%
Undecided	5/50%	1/7.5%	2/18%	2/23%
No	1/10%	1/7.5%	2/18%	4/12%

the project in 1973-74. Moreover, the project staff has made numerous presentations to civic, cultural and professional groups. Added to these excellent dissemination strategies are publications such as pamphlets describing the project, placement manuals, job sites, career education units and plans, the role of the Career Education Resource Center, a community resource handbook and information on needs analysis.

Q. Conclusions and Recommendations

During the 1973-74 academic year, the Career Education Program at McKeesport was affected by a number atypical conditions; specifically, these conditions were reflected in: (1) the differences in the educational philosophies of school board members; (2) the unexpected resignation of the superintendent at the end of the school year; (3) the diffusion of staff acceptance and administrative support which may have been the result of the competition exerted by other federally supported projects in the district; (4) the limited awareness and acceptance of the Career Education concept by the regular staff; and (5) the view by teachers and administrators that the Career Education Project was basically a "transient phenomonon." Despite these limitations, Dr. Henry Durand, the Project Director, and his staff were able to effect major improvements in McKeesport's Career Education Program.

1. Conclusions

a. The district's Career Education activities are in substantial compliance with the original proposal. Further, a good educational environment exists in the project schools.

b. The junior high school effort has been very successful in achieving its educational product goals. A higher percentage of students and staff were served at this level than either high school or elementary level.

c. The elementary school effort has been generally successful in achieving its educational product goals. Of the 16 elementary schools, approximately five are highly supportive of the project. The George Washington School, especially, has been developed extensively into

a career education model.

d. The program at the high school level has been only partially successful in achieving its educational product goals. The only classroom penetration of career education activities consisted of a Values Awareness Unit which was largely conducted by the coordinator. Moreover, other activities (i.e. Work-Related Experiences, CIC, and Placement) are largely peripheral. Further, the career education staff serving the high school was more isolated and less communicative with the regular staff than was the case at either the junior high or elementary level.

e. In-service activities have been effective at both the junior high and elementary levels; however, the senior high effort in this area was largely non-existent.

f. Publications and dissemination strategies have been very successful.

2. Recommendations

a. Concentrate on the development of the three or four most promising elementary schools into career education models and disseminate the results to other schools.

b. Continue to develop the fine work being accomplished at the junior high school level and gradually bring McClure and McKeesport Junior High Schools to a comparable level.

c. Recruit more non college-bound students into the Work-Related Experience programs, and expand the program at all levels.

d. Involve students in reviewing and possibly replacing the OVIS.

e. Improve the preparation of hosts and students before going on Work-Related Experience.

f. Conduct more frequent and smaller scale in-service sessions during the regular work week. Further, explore the possibility of awarding certification credits.

g. In-service activities must be directed toward high school staff, counselors and administrators.

h. The physical space assigned to the Career Information Center should be expanded and moved into the MASH building. Moreover, the CIC should increase its services to Vo-Tech students.

i. Since many school students tend to view counseling as a cognitive, factual process, efforts should be made to include emotions, feelings, etc., as legitimate parts of the counseling process.

j. Coordinate the Senior Semester Program (utilizing private money) with the high school Career Education Program.

k. Increase the placement services to academic students, 40 percent of whom do not go to college. Further, give assistance in locating summer and part-time employment.

l. Include Vo-Tech students in the career education process.

m. Work intensively with a small group of high school teachers (N = 5) to insure the classroom utilization of career education concepts.

n. Explore the possibility of conducting a summer long Work-Related Experiences Program.

APPENDICES

APPENDIX A

BEHAVIORAL OBJECTIVES BY AREA

Agricultural Technology

1. Develop proficiency in parliamentary procedure.
2. Get acquainted with duties and responsibilities of Future Farmers of America officers and members.
3. Self Improvement through public speaking.
4. Servicing tractor cooling system.
5. Operate 18" x 6" Planer.

Horticulture

1. The student will be able to visually identify common cut flowers used in arrangement work.
2. The student will be able to design and construct an asymmetrical triangle design.
3. The student will be able to pot or cultivate a prescribed variety of pot mum as indicated by instructor.
4. The student will be able to vegetatively propogate by cutting species of herbacious plants.
5. The student will be able to propogate by seed, various species of bedding plants commonly used.

Auto-Body Shop

1. The student will be able to write and explain all the safety rules concerning the auto body shop.
2. The student will demonstrate his ability to identify the uses of tools used in the auto body field.
3. The student will be able to identify and name the uses of three welding flames.
4. The student will be able to correctly name the proper color used on various vehicles by using color code and color book.

5. Properly mask a window panel.

Automotive Mechanics

1. The student must show his understanding of the entrance requirements and limitations of this occupation.

2. The student must demonstrate his knowledge of the 4 cycles of the internal combustion engine.

3. The student must demonstrate his ability to identify the hand tools and the safe use of the tools.

4. The student must identify various types and uses of fasteners.

5. The student will exhibit the need to assure cleanliness in the performance of certain automotive related tasks.

Carpentry

1. The student will properly locate batter board and establish excavation land building lines.

2. The student will properly select the size, cut and space floor joists, trimmers and headers.

3. The student will accurately cut, lay out and assemble outside walls and partitions.

4. The student will accurately lay out and assemble window and door openings.

5. The student will lay out common, hip, valley and jack rafters with boards mouth and tail.

Electrical

1. Connect three wires together pigtail style.

2. Solder a three wire pigtail splice.

3. Insulate a three wire pigtail splice with tape.

4. Fasten a crimp type terminal to a cable by means of a crimping tool.

5. Connect two wires using a wire knot.

Masonry

1. A student will prove his ability to identify the three different types of sand by visual comparison.

2. To test and prove the ability of a student to build a pier battered on 4 sides. The batter to be five inches in four.

3. After class lectures and demonstrations on spacing brick courses, a student will demonstrate his knowledge of spacing brick courses.

4. Build a set of brick steps.

Plumbing and Pipefitting

1. To insert oakum in soil joint with packing iron and pack to 3/4" of top of hub.

2. To cut soil pipe with hammer and chisel, chain cutter or saw.

3. To cut threads on pipe with stock and die and to use pipe cutter.

4. To identify visually the sizes and weights of copper tubing and fittings.

5. To connect small solder square per specifications.

Machining

1. The student will work to a very precision tolerance in the machine shop.

2. The student will work in a safe and careful manner on all tasks assigned.

3. The student will become involved in public speaking and will teach his fellow students in a workman-like ability and manner.

4. The student will gain the ability and skill to work with and sharpen all tools with 100% accuracy.

5. The student will perform with 100% efficiency and will develop a perfect timing in performing certain jobs.

Modern Method Mining

1. To properly set up oxygen and acetylene equipment and test for leaks.

2. To identify and adjust various welding flames.

3. Assembly of Ferrule-type and knife-type fuse.

4. Explain how to differentiate between voltage, ampheres, and ohms.

5. Know and identify conventional lines from a blueprint.

D-3 Welding

1. To discuss metallic inert gas welding.

2. To run bends in flat position.

3. Safety rules of the welding area.

4. To make a fillet weld in the flat, horizontal position.

5. To describe welding gases.

Cosmetology

1. Sanitize implements used in the beauty salon.

2. Demonstrate a shampoo and comb the patron's hair.

3. Produce horizontal fingerwaves on a mannequin.

4. Demonstrate the procedure for blocking and wrapping a permanent.

5. Demonstrate a plain manicure.

Health Services

1. Match his performance with specifications of procedure for making an occupied bed.
2. Match his performance with specifications of procedure for taking and recording blood pressure.
3. To operate sterilmatic sterilizer.
4. Match his performance with specifications of procedure for taking and recording pulse and respiration.
5. Artificial respiration mouth-to-mouth, mouth-to-nose.

Marketing Technology

1. The student will be able to correctly ring up a sale on a NCR basic register in school store.
2. The student will be able to correctly ring up a multiple item sale on the NCR clothing register in Boutique.
3. The student will be able to label the five parts of a newspaper ad.
4. The student will be able to file alphabetically a series of customers names.
5. The student will be able to make change in three sales situations when given a $5 bill.

Personal Services

1. The student will be able to run the cash register.
2. The student will be able to count change.
3. The student will be able to file at least fifteen names and addresses in alphabetical order.
4. The student will be able to complete a cut and paste newspaper ad layout when illustration is provided.

5. The student will be able to complete a job application.

Quantity Foods

1. The student will be able to accurately measure, then weigh on a two pound scale one cup granulated sugar.

2. The student will be able to state the minimum safe temperature for water at the wash and rinse pot sinks and for wash and final rinse of the dish machine.

3. The student will be able to adjust the recipe for Beef-Biscuit Roll so that it will make 24 servings.

4. The student will be able to correctly serve food and beverage.

5. The student will be able to explain the preparation of and prepare a hoagie.

Electronics

1. Must be able to calculate ohms law values in practical circuit applications.

2. Wil memorize the electronic industries association color code and demonstrate the ability to read resistor values using the color code.

3. Demonstrate the proper use of the RCA volt ohm millimeter set circuit.

4. Demonstrate the application of series circuits to practical problems.

5. Label the parts of vacuum tube diodes, triodes, tetrode, pentodes, and pentagrid mixers and apply the proper voltages and explain their operation using circuit series method.

Environmental Control Technology

1. To become familiar with the common labware and supplies used for analysis.
2. To become familiar with the instrumentation in the laboratory.
3. Explain the history, function, and regulatory powers of the Pennsylvania Department of Environmental Resources.
4. Demonstrate the operational procedure of the pH meter for measurement of the true degree of acidity or alklinity of a solution.
5. To learn to use a buret and the titration method of analysis.

Drafting

1. The student will understand third angle projection method by finishing the assignment.
2. The student must demonstrate the knowledge of an assembly drawing how to combine parts, know the procedures and rules for making assembly drawings.
3. The student must learn the technique for using a cutting plane line in sectioning and be able to make a drawing using this method.
4. The student must master the techniques of auxiliary view drawing by making a variety of drawings and answer written question to instructor's satisfaction.
5. The student will be able to identify in writing the series of threads and classes of fits and be able to solve mathematical problems relating to screw threads.

Scientific Data Processing

1. Name seven unit-record machines and describe briefly the functions of each.

2. Demonstrate ability to interpret three pre-punched cards with no printing on them.

3. Demonstrate ability to both punch and duplicate a single card.

4. Locate and identify the components of a sorter and demonstrate ability to perform at least three different sorting functions.

5. Explain data fields in respect to the unit-record and design and lay out at least one card including narrative of an application of student's own choice.

Mathematics

1. Adding, subtracting, and multiplying polynomials.

2. Multiplying a polynomial by a monomial.

3. Factoring trinomials.

4. Solving a first degree equation in one variable.

5. Solving first degree equations involving parameters.

Physics

1. Using a list of metric system prefixes and their meanings, the student will be able to convert a quantity from one metric unit to another.

2. The student will be able to express an answer to a simple problem to the correct number of significant figures.

3. Given data from an experiment involving two variables, the student will be able to graph the data according to directions of task.

4. Given a graph of distance versus time, the student will be able to determine the average speed over any time interval.

5. Given a meterstick, pivot device for the stick and a known weight, the student will be able to determine the weight of an object by balancing torques on the meterstick.

APPENDIX B_1

GRADE LEVEL CONCEPT QUESTION, GRADES 1 AND 2

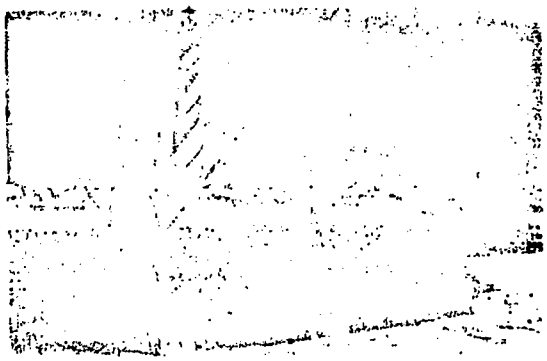
Grade 2, Who Works in these Occupations? (possible 6 points)

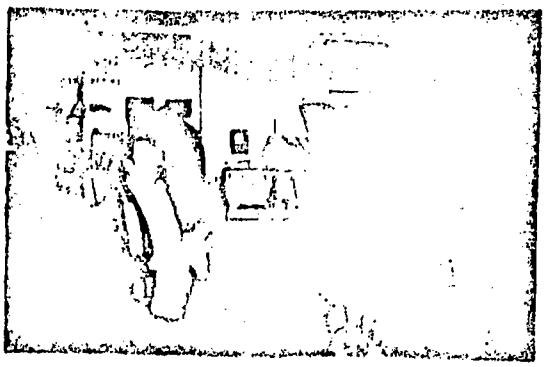
A. Instructions:

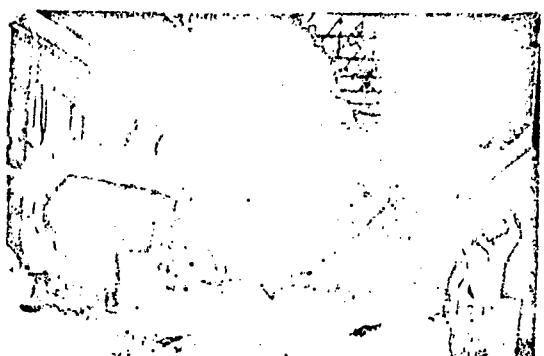
Select pictures that show people working. What type of job do these people do?

B. Scenes

1. Congress Why did you say ____? (bonus)
2. Fisherman
3. Mechanic
4. Farmer
5. Steel worker







APPENDIX B_2

TEACHER RESPONSES TO THE PROJECT AWAKE DEVELOPER QUESTIONNAIRE

Questions 1-19

Comments

No comments.

20. As a result of your experiences in Project AWAKE, do you possess different ideas, persuasions, and viewpoints about education as they relate to career education?

Comments

I've always felt career awareness was important but actually did little about it in my classroom until I was involved in the units. It is now easier to see how to relate career education to the other areas of study.

I now see more reason to try to help students become more aware of careers.

Yes, more of it is vital to properly educate our youth for the life they, hopefully, face.

I am strongly convinced that this program is the best form of Social Studies for the elementary school of today. The subject matter is relevant to their needs and situations.

Not really sure! However, I relate everyday things a little more to the idea of a future career than I did before.

21. As a result of your experiences in Project AWAKE, are you more aware of problems in education as they relate to career education; specifically, your own school and classroom due to your participation in the workshop?

Comments

Classroom environment is basically a textbook type without any stress on the fact that eventually these children are going to have to work for a living.

Students were not very aware of careers -- also, I see how little we are doing toward careers.

Yes, there was very little awareness being sought in the elementary schools, beyond postman, preacher, policeman, and other public services.

A need for children to be exposed to different careers, so they are not forced into a certain area, but instead choose and value that choice.

We are not preparing the average student for a life style or profession suitable for him.

22. As a result of your experiences in Project AWAKE, do you anticipate your relationship with your students will change?

Comments

Not significantly to make a big difference. Many of the things built into the units I have already been doing with the children.

In a way yes. The more you consciously work with children in any way, your relationship changes.

I feel I will become more involved in individual and small group activities, and act as a coordinator to the children.

I have already become more aware of personal interests and inclinations.

Not really - however, specifically we do more on career activities.

23. As a result of your experience in Project AWAKE, do you anticipate your classroom procedures will change?

Comments

They have in that we do relate more now to career awareness. We've always done individual and group

type activities.

Learning through self-motivation will become a greater force in my class and those periods where a child had to find things to keep him busy, could be used on the projects.

Not a big overall change.

They have since the first implementation last year.

I have always tried to individualize whatever type of work we were doing as much as possible.

24. As a result of your experience in Project AWAKE, do you feel increased respect for the opinion of others regarding solutions to educational problems as they relate to career education?

Comments

Definitely! I realize how really unprepared we are as teachers to make the child's learning experiences relevant to future careers and we must be willing to consult others who have experiences different from ours.

The feeling toward non-college degree jobs are respected more by the students and myself.

I see how field trips and room visitors can now be used more effectively in career education.

I am constantly asking others now of any programs or lessons they are dealing with that I might incorporate into my units.

I was very fortunate to have had the opportunity to work with six very different people during the two years I was involved with the project. Their views on education and their teaching ideas greatly benefited me and helped increase my knowledge of education.

25. As a result of your experiences in Project AWAKE, are you more willing to work with others to solve instructional problems?

Comments

It may have helped or added to the willingness but is not solely responsible.

I believe the more cooperative everybody is, the more ground there will be covered. Only if people work together will aims and goals be reached.

I'm looking forward to working with more new people with new ideas on open classroom procedures and individualized instruction. I would attempt to gain understanding on how we could be providing for the individual needs of all children as it applies to everyday life.

The more people, the more ideas and the more we can encompass into the child's learning experiences. (This I felt was a great weakness in the revision. There weren't enough people to get many, varied ideas.)

I'd hope I've always been willing.

26. As a result of your experiences in Project AWAKE, are you more able to evaluate certain educational practices in your school?

Comments

In my situation I am permitted to make field trips at my convenience. I can arrange to take small groups short distances. Many teachers are not permitted this freedom.

To some degree but people are sometimes not receptive to your suggestions. We do not have a difficult time now just handling the curriculum as it is.

I would hope that I can be of some influence in attempting to encourage each teacher in my school

to use the units in an attempt to have the career education program become a continuous process from K-12 in our school system. The open classroom and individualized instruction should replace some rigid procedures.

Some practices are wasteful because they have no meaning to the students. After working on the project, it is easier to see simple concepts which need to be developed so that the child can begin to formulate ideas about himself.

I don't think the computer printout form of the career projects is getting to enough people. There should be a better way of presenting the career idea so that more people will use it.

27. In building the AWAKE resource unit, was concern given for individual pupil growth and development patterns?

Comments

Setting the program as was suggested by the staff so that those who missed any preceding competencies would be able to work with them at any time.

In AWAKE, revision of certain educational concepts were designed for each step in the educational process of the elementary child.

Sometimes I felt the program could have been more developmental to grade levels. (This was difficult to do.)

28. Please evaluate the following list of activities as to the degree of helpfulness in developing the units.

Comments

No comments.

APPENDIX B_3

TEACHER RESPONSES TO THE PROJECT AWAKE USER QUESTIONNAIRE

1. In your opinion was this unit oriented toward career awareness for the elementary student?

   Comments

   No comments

2. Did you experience difficulty in obtaining the materials or measuring devices listed in the unit?

   Comments

   Materials listed in the unit are still difficult to obtain, but I had no lack of materials.

   Some limitations of materials because our library is away from our building. (St. Philips)

   There is still a need for more materials in personal services especially on the primary level. Most materials were not for third graders. For this unit in particular, it was hard to find materials that they themselves could use.

3. Were the instructional activities restricted by the physical facilities of the school?

   Comments (most teachers indicated no)

   Lack of space.

4. Do you feel that by using this guide, you could more effectively utilize state syllabi or local courses of study?

   Comments

   I feel that this material can be related to all areas of study.

   Of course when ideas are implemented in this way, more can be covered at the same time.

   It gave me many useful ideas.

TEACHER RESPONSES TO THE PROJECT
AWAKE USER QUESTIONNAIRE (continued)

This year the units were so poor that very few activities came out for the students.

5. Had you taught this topic previously without benefit of the guide?

Comments (most teachers indicated no)

No comments

6. If you had taught the same unit previously, did the past experience lessen your use of the guide?

Comments

Had more of own ideas and those obtained from other sources.

Actually I taught a lot from last year's ideas on the guide also. Also, I feel it was much easier for me to teach because I had helped to develop this unit and it was much easier to make suggestions for altering activities and making new ones.

7. In your printout for individual students, were the number of suggestions relating to content, activities, materials, and measuring devices sufficient?

Comments

We made several decoupages and mobiles not mentioned.

Not individually, but as a class, yes.

The most activities any student were two and about one-third of them had none.

Some of the objectives didn't have enough activities. Also, I feel on this level, there aren't enough variety of activities.

Some of these units are geared too highly. The teacher must improvise or adapt it to her grade level.

8. Would you consider a laboratory, demonstrating class, or other in-service training of value in helping you to learn how to implement units?

Comments

I helped to develop the units so I feel I am qualified to teach them.

I feel experience in using the guides the most helpful. This year's units were much smoother and more meaningful because I was not groping as much.

I'd like some new ideas on how to implement these. I think it would be a good idea.

Definitely.

9. Is the instructional staff at your school adequate for the effective utilization of the guide? (e.g. media specialists, instructional leadership, and other teachers).

Comments

We don't have media specialists.

I am working independently.

Some feel I am wrong using the units and make it difficult for me.

10. Were you given sufficient information and guidance prior to using and during the use of the units?

Comments

No comments.

11. As a result of using the Guide, have you subsequently used other resources (either in or out of school) more extensively?

Comments

Children take individual trips into offices, stores,

and visit resource people.

We now have a typewriter and cash register available for use at all times.

Find myself using the textbook less and other resources more.

Tape recordings made by individuals, interviews, and resource people.

12. Do you possess different ideas, persuasions, and viewpoints about education and its processes since your experience with the guide?

Comments

Have always felt individual activities and emphasis on the world of work was important.

Children can understand more and do more than I felt they could previously.

I learned along with the children the various uses of machines and computers. I also learned more about the business operations in our area.

Education and careers need to come together since they are basically the same.

13. Are you more aware of problems in education and career education specifically in your own school and classroom as a result of using the guide?

Comments

No comments.

14. Has the use of the materials in Project AWAKE changed the teacher-pupil relationships in your classroom?

Comments

There is a freedom and individual responsibility promoted by the printouts, never found in a formal class.

More give on children's part and take on teachers' part. They do more, learn more.

A more individualized approach.

Do more projects and independent work. The pupils like it.

15. Has the use of the guide influenced your classroom procedures?

Comments

This child participation carries over to the formal classes.

Somewhat, as students are doing more individualized activities.

More independent and group work is done.

To the extent that the children can now use more equipment in the classroom.

16. Are you planning to use this unit again?

Comments

No comments.

17. Would you like to use other units?

Comments

No comments.

18. Would you like to work as part of a team in developing a unit?

Comments

No comments.

TEACHER RESPONSES TO THE PROJECT AWAKE USER QUESTIONNAIRE (continued)

19. Do you feel that you have adequately been informed as to the format and methodology of Project AWAKE as it is to be used in your classroom?

Comments

Having worked two summers with writing and coding, I can say "yes".

Yes, because it can be changed and used in many different ways, as you can see fit.

For my age level, "kindergarten", this unit had a great many activities so that the material had interest areas for all students in my class.

20. In your opinion what are the strong points of Project AWAKE?

Comments

Child more aware of his community and what's available in the community rather than being isolated in school six hours per day.

A development of interest in new academic careers. Developing responsibility in the individual. Learning is fun.

So many interesting areas to work in. Readily adapted to group, independent, and total work.

The type of instruction is different and creates a lot of interest.

Children becoming aware of the many opportunities in the world of work.

What the term AWAKE stands for - a career awareness. So many youngsters are completely in the dark concerning so many occupations.

TEACHER RESPONSES TO THE PROJECT
AWAKE USER QUESTIONNAIRE (continued)

21. In your opinion what areas of Project AWAKE should be altered or improved?

Comments

A plan must be followed in a school district so that all units are covered in their six years of elementary school.

More different activities. This unit's objectives were too much toward self-awareness rather than career awareness (manufacturing)

Printouts for the elementary should be simplified.

Yes, the children like the idea of choosing their own objectives. They like a change of pace. They work enthusiastically. They enjoy freedom within the limits.

They like this program. They like the materials but can't interpret many of the activities and objectives to know what to do without guidance. But they really like working on this program.

They enjoyed every period. The weaker were led to use their gifts, while the stronger student was never limited by an exercise or page. There was always more to do and research is never ending.

APPENDIX B_4

ADMINISTRATOR RESPONSES TO THE PROJECT AWAKE USER QUESTIONNAIRE

1. Do you feel that you have adequately been informed as to the format and progress of Project AWAKE as it is used in your schools? Please elaborate.

Comments

Yes, we are using the program readily.

Field trips, film strips, literature, I.U. AV materials.

The coverage has been good.

Pupils have been excited and have cooperated with the program.

I am aware of the program as it is being used in our school.

No.

2. In your opinion what are the strong points of Project AWAKE?

Comments

The responsibility of completing the project rests on the pupils' shoulders. They can complete as much and as many of the projects as they desire.

Individualization.

Variety of activities from which the students are to choose.

Lists of available materials.

Subject areas more related to the world of work.

New units, printouts with objectives, content, and activities arranged more orderly.

Individual attention for child's interest.

APPENDIX B_4

ADMINISTRATOR RESPONSES TO THE PROJECT AWAKE USER QUESTIONNAIRE (continued)

3. In your opinion, what areas of Project AWAKE should be altered or improved?

Comments

We must localize the materials. It is difficult to secure materials from another school. The same is true if a school desires to use AV materials.

Bulkiness and confusion of printouts.

Difficulty of handling 30-35 students at one time.

More help needed for those teachers who were not involved in writing the programs.

Limited field trips.

Lack of money.

4. How do you think the methodology in the Project compares with methodologies or teaching techniques used in your school?

Comments

We use much of the methods employed in our classes.

Children are aware of what they must do.

Our system is geared to the individual student, therefore, the programs would work well together.

Favorably.

5. How do you feel the children react to the materials and methodology in the project? Describe briefly.

Comments

They like to uncover new materials and different approaches in their search to complete their work.

Most children like the program and like doing something new and different, however, some children

cannot work independently.

Children enjoy working as individuals, getting their own printouts, etc.

APPENDIX B 5

EDUCATIONAL BACKGROUND & EXPERIENCE OF THE PANEL OF EXPERTS

Panel Member A

Education:
- B.S. Elem. Educ.
- M.Ed.
- Total 76 grad. credits

Experience:

Classroom teacher	6 yrs.
Reading Supervisor	2 yrs.
Elem. Supervisor	10 yrs.
Asst. Superintendent	2 yrs.
College professor (Dir. Early Childhood)	6 yrs.

Panel Member B

Education:
- B.S. Elem. Educ.
- M.Ed. Elem. Educ.
- Total 33 grad. credits

Experience:

Elem. classroom teacher	8 yrs.
College instructor	1 yr.
Demonstration teacher	3 yrs.

Panel Member C

Education:
- B.S. Educ.
- M.Ed. Educ.
- Total 39 grad. credits

Experience:

Classroom teacher	14 yrs.
Principal Elem. School	8 yrs.

Panel Member D

Education:
- B.S. Elem. Educ.
- M.Ed. Elem. Educ.
- Total 48 grad. credits

Experience:

Elementary teacher	9 yrs.
Principal	1 yr.

APPENDIX C1

BASIC EQUIPMENT AND INFORMATION HOLDINGS OF THE CCEM CAREER EDUCATION CENTER

A. Equipment/Furnishings

Closed-Circuit TV Systems, Video-Cassettes, Color

3M Reader/Printer w/18X lens
3M Reader w/36X lens
Viewer, Cassette, Auto Vance II

Projector, Slide, Kodak Ectographic w/zoom lens
Projector, 16mm, Sound w/still control
Porjector, Filmstrip, w/sound
Porjector/Recorder, 3M, "Sound on Slide"
Projector, Playback, 3M, "Sound on Slide"
Projector, Rear Screen, 3M

Public Address System, Portable Amplibox

Listening Center Magnetic Head Sets, Avid Model E2 Pac 8

Tape Recorder, Sony, 7"
Tape Recorders, Cassette Mini, Sony

Record Player, Portable, Rhiem
Player, Cassette

Narrator, Slide-Lynch, Wollensak

Camera, Instamatic
Dictation Transcriber, Sony
Printing Electronic Calculator w/tape, Olivetti
IBM Selectric Typewriter and elements
Xerox Model 2400 System

(Slide trays, cables, patch cords w/plugs, lens, microfiche attachments, kits, screen, projection tables, splicer/repair kit, file cabinets, desks, chairs, racks, shelves, tables, etc.)

BASIC EQUIPMENT AND INFORMATION HOLDINGS
OF THE CCEM CAREER EDUCATION CENTER (continued)

B. Information/Documentation

Counselor Films, Video Cassette Films, Services on Career Education - 14 films
Pathescope Educational Films, Filmstrip Program on Career Education - 6 filmstrips, 6 tapes
Coronet Films - Filmstrips and tapes on 6 occupations
McKnight Publishing Company - 16 mm. soundfilm
Guidance Associates - 35 filmstrips

Arco-Rosen Career Guidance Series - 38 books
Palmer Publications, Inc., Career Development Service books, complete system for 175 students of grades 7-8-9 plus a reorder of complete system for 100 students of grades 7-8-9
Finney Occupational Guidance Units 1-5, Vol. 1-8 each
Science Research Associates Work Widening Occupational Roles Kit - Booklets 1-340
Vocational Biographies, Inc., 21 volume Career Library
Reference Library of Black America, Vol. 1-5
Occupational View Deck
Dictionary of Occupational Titles, Vol. 1 and 2
Encyclopedia of Careers and Vocational Guidance, Vol. 1 and 2 (J. C. Ferguson Pub.)
Popeye Comic Books - 15 on Career Education
Division of Career Development Slide/Tape programs
PENNSCRIPT PROGRAMS (PHILASCRIPT (25))

(Other varied career education information systems and packages, textbooks, handbooks, guides, kits, manuals, periodicals, booklets, folios, collections, games, etc.)

APPENDIX C_2

OCCUPATIONAL CLUSTERS (BASIC CATEGORIES WITH EXAMPLES OF SPECIFIC JOB TITLES)

ART (Drawing, Painting, Photography, Sculpture).

Architect
Artist
Fashion Designer
Draftsman
Photographer
Sculptor
Interior Designer

ATHLETICS

BUSINESS (General)

Administration/Management
Insurance Agent
Purchasing
Sales

CLERICAL (General Office Work, Office Machines and Records)

Business Machine Operator
Office Clerk
Receptionist
Secretary
Typist
Telephone Operator

COMMUNICATION (Verbal Media)

Advertising
Journalist
Public Relations
Public Speaking
Radio Production
Television Production
Writing

HEALTH AND MEDICAL (Working with People with Medical Problems; Helping People to Stay Healthy; Working with the Ill).

Dental Assistants
Dentist
Dietitian
Doctor
Lab Technician
Nurse
Therapist
X-Ray Technician

MATHEMATICS (Other than with Science; Computations, Quantitative, Pure Math)

Accountant
Actuary
Bookkeeper
Computer Programmer
Mathematician
Statistician

MECHANICAL (Working with Machines or Machine-type work; Operation, Service, Repair).

Machine Operator
Mechanic
Repairman

OCCUPATIONAL CLUSTERS (BASIC CATEGORIES WITH EXAMPLES OF SPECIFIC JOB TITLES) continued

MILITARY

MUSIC (All Phases: Voice, Instrumental, Composition)

PERFORMING ARTS

- Actor
- Dancer
- Model

PROFESSIONAL, GENERAL (Other than Science, etc.; Education and/or Training, Human Services, Social Services; Working with People, Human Help or Growth Human Problems).

- Educational Aid
- Lawyer
- Librarian
- Psychologist
- Social Worker
- Teacher

PROTECTIVE SERVICE (Protecting Life and Property; Representing Authority)

- Criminologist
- Detective
- Police
- FBI

SCIENCE (Emphasis in Math and Science; All levels of Education and Training).

- Aeronautics
- Aerospace
- Biologist
- Chemist
- Electronics
- Engineer
- Geologist
- Oceanographer

SERVICE, GENERAL (A Variety of Non-Technical Services).

- Airline Stewardess
- Beautician-Cosmetologist
- Nurse's Aide
- Domestic
- Food Service
- Waiter
- Service Station Attendant

TRADES (Working with Hands; Manual Skills; Manual Dexterity; Other than technical areas, as in Science; Other than with Machines)

- Carpenter
- Mason
- Plumber
- Sheetmetal Worker
- Welder

APPENDIX C_3

OCCUPATIONAL CLUSTERS

1. POWER MECHANICS
   - Automotive Mechanic
   - A/C Engine Mechanic
   - Diesel Engine Mechanic
   - Auto Transmission Mechanic

2. ELECTRO-MECHANICAL
   - Computer Maint. Tech.
   - Appliance Serviceman
   - Office Machine Service

3. BUILDING CONSTRUCTION & MAINTENANCE
   - Carpenter
   - Plumber
   - Trowel Trades Mechanics
   - Painter
   - Operating Engineers

4. COMMUNICATIONS
   - Electronics Tech.
   - TV Serviceman
   - Radio & TV Broadcast Techn.
   - Printing & Composing Room Workers

5. PERSONAL SERVICES
   - Restaurant Practice (Cook, Salad Maker, Etc.)
   - Waitress
   - Cosmetologist
   - Hotel (etc.) Manager

6. METAL PROCESSING
   - Auto Body Mechanic
   - Welder
   - Machinist
   - Sheet Metal Worker

7. BUSINESS DATA PROCESSING
   - Bookkeeping Clerk
   - Computer Operator
   - Computer Programmer
   - Key Punch Operator

8. SECRETARIAL
   - Stenographer
   - Secretary
   - Typist

9. DISTRIBUTION
   - Warehouse Clerk
   - Retail Clerk
   - Stock Clerk
   - Cashier

10. CLERICAL
    - Clerks (Mail, Civil Service, Postal, Bank)
    - Office Machine Operator
    - Receptionist
    - Telephone Operator

11. HEALTH SERVICES
    - Hospital Attendants
    - Practical Nurse
    - Medical Technician
    - Dental Assistant
    - Dietitian
    - Optical Mechanic

12. APPAREL TRADES
    - Tailor
    - Power Sewing Operator
    - Designer
    - Presser

13. DRAFTING
    - Machine Design Draftsman
    - Tracer
    - Blue Print Draftsman
    - Photogrammetry

APPENDIX C_4

BASIC CAREER EDUCATION CLUSTERS: U.S. OFFICE OF EDUCATION

1. AGRI-BUSINESS AND NATURAL RESOURCES

   Operations
   Support and Regulations
   Research
   Forestry
   Land and Water Management
   Fisheries and Wildlife
   Mining and Quarrying
   Petroleum and Related Products
   Production
   Service
   Processing and Marketing

2. CONSTRUCTION

   Operations
   Design
   Lane Development
   Fabrication and Installation
   Contracting
   Interior
   Landscaping

3. CONSUMER AND HOMEMAKING EDUCATION - RELATED OCCUPATIONS

   Clothing, Apparel and Textile Industry
   Food Service Industry
   House Design, Interior Decoration
   Family and Community Services
   Institutional Household and Maintenance Services
   Child Care, Guidance and Teaching
   Operations
   Inter-changeable Technician for Homemaking

4. COMMUNICATION AND MEDIA

   Audio-Visual
   Language
   Publishing
   Broadcasting
   Line Communications

BASIC CAREER EDUCATION CLUSTERS: U. S. OFFICE OF EDUCATION (continued)

5. ENVIRONMENT

Operations
Soil and Mineral Conservation and Control
Space and Atmospheric Monitoring and Control
Environmental Health Services
Development and Control of Physical Man-Made Environment
Forest, Range, Shore and Wildlife Conservation and Control
Water Resource Development, Conservation and Control

6. FINE ARTS AND HUMANITIES

Fine Arts
Humanities
Operations

7. HEALTH OCCUPATIONS

Operations
Medical Science and Services
Health Services Administration
Health Services Delivery
Biologic Science and Technology
Mental Health, Mental Illness and Retardation
Accidents, Injriies and Emergency Services
Dental Science and Services
Pharmaceutical Science and Services
Health Information and Systems

8. HOSPITALITY AND RECREATION

Operations
Community Services
Human Development
Mobility
Health Care
Environmental Management

BASIC CAREER EDUCATION CLUSTERS: U. S. OFFICE OF EDUCATION (continued)

9. MANUFACTURING

- Operations
- Materials
- Production
- Distribution
- Research

10. MARINE SCIENCE

- Operations
- Marine Biology
- Commercial Fishing
- Aquaculture
- Marine (Oceanographic) Exploration
- Underwater Construction and Salvage

11. MARKETING AND DISTRIBUTION

- Operations
- Sales and Services
- Buying
- Marketing System
- Sales Promotion
- Physical Distribution
- Marketing Services

12. PERSONAL SERVICE

- Operations
- Physical Culture
- Barbering
- Cosmetology
- Mortuary Science
- Household Pet Services

13. PUBLIC SERVICE

- Operations
- Financial
- Urban Development
- Regulatory Services

BASIC CAREER EDUCATION CLUSTERS: U. S. OFFICE OF EDUCATION (continued)

13. PUBLIC SERVICE (continued)

Education
Police and Fire
Defense
Post Office
Public Utilities
Public Health
Labor Affairs
Highways
Public Transportation
Social and Rehabilitation
Courts and Corrections
Parks and Recreation

14. TRANSPORTATION

Pipeline Transmission
Operations
Land Transportation
Aerospace Transportation
Water Transportation

APPENDIX C5

TEACHER ANECDOTAL BRIEF: Activity in Career Education

CAREER EDUCATION MODEL (CCEM) at Cooke Junior High School
Division of Career Development

1. Teacher: _____ 2. Today's Date _____

3. Subject Area: _____

4. Class Section _____ 5. Activity Date _____

6. BRIEF DESCRIPTIVE STATEMENT IDENTIFYING C.E. INVOLVEMENT (Behavorial objective for student; particular student activity):

_____

_____

_____

_____

7. C.E. ACTIVITY/RESOURCE (check appropriate items):

7.1 ____ Student research in Center

7.2 ____ Teacher research in Center

7.3 ____ Tour: (site) _____

7.4 ____ Discussant: (individual & Organization) _____

_____

7.5 ____ SRA Occup. Role Kit

7.6 ____ Finney Occup. Brief

7.7 ____ Chronicle Kits

7.8 ____ Occup. Outlook Handbook

7.9 ____ D.O.T.

7.10 ____ (slide-tape) title _____

_____

7.11 ___ (flim-strip, sound) title _____

_____

7.12 ____ Other: _____

_____

8. Copy of lesson-plan may be attached:
_____ check here if included.

HW, 1/74 Rev.

APPENDIX C_6

TEACHER REQUEST DETAIL

CAREER EDUCATION MODEL (CCEM) at Cooke Junior High School
Division of Career Development

Code:
** C - __ -- __
** S - __ -- __

Teacher _____ Date of Request _____

Dept.: _____ Rcvd by (CE Staff): _____ CE Staff Asgmt: _____

_____ Curr. Assist. _____ Disc. _____ Cnslng. Indiv. _____ OTHER:

_____ Curr. Activity _____ A-V _____ Cnslng. Group _____

_____ TOUR _____ Class Visit _____ GENERAL _____

* *

SECTION: _____ Number of Students (if applicable): _____

1. Special Instructions: _____

_____

_____

2. Purpose: (Brief Descriptive Statement, i.e., involvement with Career Education)

_____

_____

_____

* *

COMPLETION/DISPOSITION: Date: _____

_____

_____

_____

hjw; 1/74 Rev. Signed: _____

APPENDIX C7

CCEM PROGRAM TOUR-SITES

Northeast Philadelphia Airport

Philadelphia International Airport

Colonial Pontiac Auto Agency

Broadway Maintenance

Eaton Yale Towne Manufacturers

Limerick Atomic Energy Plant

Peach Bottom Atomic Energy Plant

Berschler Funeral Home

Philadelphia Savings Funds Society

Sun Oil Company

Philadelphia Port Authority

Frankfort Arsenal

Torresdale Water Treatment Plant

Philadelphia Bulletin

Gimbel Brothers

Longwood Gardens

WCAU TV Station

Philadelphia College of Textiles and Science

Mastbaum Vocational High School

Walter Biddle Saul Agriculture School

Philadelphia City Courts

Philadelphia Police Headquarters

Philadelphia Civic Center

Philadelphia Academy of Natural Science

Franklin Institute

Federal Bureau of Investigation

Smithsonian Institute

United States Capitol

Theaters (Plays/Movies)

McDonald's Restaurant

Cheyney State College

LaSalle College

APPENDIX C_8

TOUR REPORT FORM

Career Education Model (CCEM) at Cooke Junior High School

* * Tour Report Form * *(Teacher)

Please submit on/before: _____

(Office Use:)
C - ___ - ___
Inv. # _____

* *

1. Teacher Tour _____
2. Date Tour _____
3. Site _____
4. Class Section _____

* *

	Below Average	Average	Above Average
5. Pre-planning/preparation with students			
Comment: _____			
6. Transportation facility			
Comment: _____			
7. Eating and/or facility			
Comment: _____			
8. On-Site:			
8.1 Contact/host			
8.2 Orientation			
8.3 Guides/hosts			
8.4 Time allotments			
8.5 On-site experiences, overall			

TOUR REPORT FORM (continued)

	Below Average	Average	Above Average
8.6 "Wrap-up"			

8.7 Comment: _____

9. Student interest/conduct | | | |

Comment: _____

10. Time-schedule, overall | | | |

Comment _____

11. Total experience, overall | | | |

Comment: _____

12. CE Staff Involvement | | | |

Comment: _____

13. Recommendation for subsequent tours. | | | |

Comment: _____

* * * * * * * * * * * * * * * * * * *

Submitted by:

Teacher _____ Date _____

APPENDIX C_9

ORGANIZATIONS/AGENCIES UTILIZING/VISITING THE COOKE CAREER EDUCATION PROGRAM AS A COOPERATIVE/RESOURCE AGENCY

Philadelphia School System Organizations/Representatives

Ada Lewis Middle School
Audenreid Junior High School
Cooke Junior High School - Alternative School Program
Harding Junior High School
Sayre Junior High School - Career Development Laboratory
Stetson Junior High School
Stoddart - Fleisher Junior High School
Turner Middle School

Edison High School
Frankfort High School
Germantown High School/OIC - Urban Career Education Center
Mastbaum High School
Olney High School

Bishop Learning Center
Pennsylvania Advancement School
Pollock School
Taylor School

Alternative Program Office
District Home & School Council
District 5 Administrative Staff
District 7 Administrative Staff
Division of Career Education
- Business Education
- Career Development Laboratory (Sayre J H)
- Home Economics
- Mobil Career Unit
- Skills Centers

Division of Curriculum Planning and Development -
- Curriculum Supervision

Division of Pupil Personnel and Counseling
- Counseling Services
- Decision-Making Project
- Room to Grow
- Vocational Guidance

Special Education - AID Program

ORGANIZATIONS/AGENCIES UTILIZING/VISITING THE COOKE CAREER EDUCATION PROGRAM AS A COOPERATIVE/RESOURCE AGENCY (continued)

Other School Systems

Boston, Mass. - Boston City Schools
Chester, Pa. - Chester-Upland School District
Cheltenham School System, PA.
Burlington, New Jersey - Burlington City High School
Elkens Park, Pa. - Ashbourne School
Willow Grove, Pa. - Upper Moreland School District

Colleges/Universities

Cheyney State College
Ohio State University - Alliance for Career Education
Rutgers University - Graduate School of Education,
Department of Voc-Tech Education
Shippensburg State College
University of Pennsylvania - Graduate School of Education

Business/Industry

Bell Telephone Company - Educational Support Program
Minority Community Communications Board - KPVI TV
New York Life Insurance Company
Philadelphia Tribune Newspaper
United Auto Workers (Philadelphia)
WCAU TV

Other Agencies/Organizations

Achievement Through Counseling and Treatment (A.C.T.),
Einstein Medical Center
Lutheran Church Agency
Pennsylvania State Department of Education
Research for Better Schools - Academy for Career Education
St. Thomas Church (Philadelphia) - Job Placement Center

APPENDIX C_{10}

STUDENT EVALUATION FORM

Career Education Model (CCEM) at Cooke Junior High School

Student Evaluation June 1974

Optional:

Name _____ Section _____ Date _____

Teacher _____ Subject _____

YOU are <u>checking on us</u> - and how we and the Career Education program has worked for you. Thank you for your cooperation.

1. I have been a member of the Student Career Education Committee this year:

Yes ____ No ____

DID YOU LIKE ??

	No Comment	Yes	No
2. Using the C.E. Center:			
3. The people who work in the Ce Center:			
4. Talking with the CE Counselors?			
5. Learning about jobs?			
6. The C.E. tours?			
7. Learning more about subject selection for next year?			
8. The way the C.E. Center is arranged?			
9. Having some C.E. information in your classes?			

10. How can we improve our Career Education program for Cooke students (one way, maybe)?

_____

_____

_____

_____

APPENDIX C_{10}

STUDENT EVALUATION FORM (continued)

11. What do you like about our Career Education program?

_____

_____

_____

_____

12. Would you like to have the Career Education program continue for Cooke next year (if so, WHY?)?

_____

_____

_____

_____

13. Would you want to participate in the Career Education program next year?

Yes _____ No _____

APPENDIX C_{11}

BELL OF PENNSYLVANIA: A CAREER EDUCATION PROGRAM FOR COOKE JUNIOR HIGH SCHOOL

DESCRIPTION OF PROGRAM

Purpose

To provide the students with an overview of the business world, with regard to: the structure of a large organization; the variety of possible careers and the levels of responsibility; and the skills, qualities and personal development required for a progressive career in the specific careers observed.

Structure

The program will be structured as a six week seminar, augmented by related instruction and activities during the students' normal school classes. Sessions will involve discussion and presentation of theory and/or visits to field locations.

Hours

The scheduled time will involve a total of seven hours; the first and third sessions will be one and one-half hours; all other sessions will last for one hour. Additional required but unscheduled time will involve additional school activities and time spent preparing program assignments.

Participants

The program will involve ten students in the ninth grade, and four faculty members. One company representative will coordinate the program and handle the program instruction; additional company personnel will be required as resource persons at field locations.

RESPONSIBILITIES

Students

Each student will be expected to visit all assigned locations and attend all sessions. It is expected that each student will complete all assigned work and be prepared to present an analysis of his work to the other members of the group.

BELL OF PENNSYLVANIA: A CAREER EDUCATION PROGRAM FOR COOKE JUNIOR HIGH SCHOOL (continued)

Instructors

The faculty will be expected to provide appropriate background and follow-up instruction for the concepts discussed in general sessions and encountered on visits to field locations. Also, a faculty member will be responsible for accompanying the students on all trips and for supervising their transportation to and from each session.

Company Coordinator

The company coordinator will arrange for all resource persons and field visits, and develop the material to be presented at the sessions.

EXPENSES

Transportation

The company will pay each student's and faculty member's carfare expenses (to and from the school) incurred in connection with any scheduled tour or meeting. Funds to cover these expenses will be furnished to the responsible faculty member at the session involved.

FACULTY ORIENTATION

An orientation program will be conducted for the faculty. It will include field trips to the locations which the students will visit, and a discussion meeting. Materials and films to be used in the seminar sessions will be previewed at this meeting. Also at this time, the individual faculty members will present their plans for integrating the program into the student's regular classroom instruction, and outline associated projects which their students will undertake in connection with the program.

Field Trips

April 17 (Wednesday) 2:00 p.m. - 4:00 p.m.

Commercial Department	1347 W. Cheltenham Ave.	1st floor
Traffic Department	4900 North Broad Street	6th floor
Central Office	4900 North Broad Street	4th floor

April 18 (Thursday) 2:00 p.m. - 3:00 p.m.

Accounting Department 1835 Arch Street 3-5 floor

April 25 (Thursday) 2:00 p.m. - 3:00 p.m.

Learning Assessment Program (LAP) 5137 Walnut Street 2nd floor

Discussion Meeting

April 24 (Wednesday) 2:00 p.m. - 4:00 p.m.

Conference Room - 2H One Parkway 2nd floor
Services Department One Parkway basement

SYNOPSIS OF SCHEDULE HOURS

Day One Seminar and tour; overview of program; homework assignment; film showing; tour Commercial Dept.

Time: one and one-half hours
Location: 1347 W. Cheltenham Ave., 1st floor

Day Two Tour; visit a Traffic Service Office and a Frame

Time: one hour
Location: 4900 N. Broad St., 6th and 4th floors

Day Three Seminar; review of homework and concepts learned to date; film showing; Marketing Representative - lecture - exercise: In-basket; homework assignment.

Time: one and one-half hours
Location: One Parkway, 2nd floor Projection Room

Day Four Tour; visit the Accounting Department and Public Relations Dept. and Services Dept.

Time: one hour
Location: 1835 Arch St., 3-5 floors and
One Parkway, 15th floor; basement

BELL OF PENNSYLVANIA: A CAREER EDUCATION PROGRAM FOR COOKE JUNIOR HIGH SCHOOL (continued)

Day Five — Tour; visit the Learning Assessment Program

Time: one hour
Location: 5137 Walnut St., 2nd floor

Day Six — Seminar; review completed In-basket; review concepts learned in program; film showing; presentation of certificates of completion

Time: one hour
Location: One Parkway, Auditorium

APPENDIX D

CLASSROOM OBSERVATION RECORD

Teacher: _____ Date: _____
Time of Day: _____ Observer: _____
Activity: Five Senses

Economics Self Society Technology Careers

PUPIL BEHAVIOR

1.	Apathetic	1	2	3	4	5	6	7	N	Alert
2.	Obstructive	1	2	3	4	5	6	7	N	Responsible
3.	Uncertain	1	2	3	4	5	6	7	N	Confident
4.	Dependent	1	2	3	4	5	6	7	N	Initiating

TEACHER BEHAVIOR

5.	Partial	1	2	3	4	5	6	7	N	Fair
6.	Aloof	1	2	3	4	5	6	7	N	Responsive
7.	Restrictive	1	2	3	4	5	6	7	N	Understanding
8.	Dull	1	2	3	4	5	6	7	N	Stimulating
9.	Apathetic	1	2	3	4	5	6	7	N	Alert
10.	Uncertain	1	2	3	4	5	6	7	N	Confident
11.	Disorganized	1	2	3	4	5	6	7	N	Systematic
12.	Inflexible	1	2	3	4	5	6	7	N	Adaptable
13.	Pessimistic	1	2	3	4	5	6	7	N	Optimistic

APPENDIX D

CLASSROOM OBSERVATION RECORD (continued)

	Learning Excursions	Hands-on Activities	Subject Matter Tie-in	Occupational Information	Resource Persons	Role-Playing
Reality Bound						
Self-Oriented						
Personalized						

The Activity

_____ 1. The student has an opportunity to express curiosity by questioning.
_____ 2. The student has an opportunity to explore his environment.
_____ 3. The student has an opportunity to experiment with his environment.
_____ 4. The student has an opportunity to gain experience with the use of materials.
_____ 5. The student has an opportunity to gain experience with equipment.
_____ 6. The student has an opportunity to learn about symbols and language used in the working world.
_____ 7. The student has an opportunity to interrelate with other students.
_____ 8. The students receive information on various occupations. (Occupational Information)
_____ 9. The student observes the relationship of school subjects to various occupations. (Subject Matter Tie-In)
_____ 10. The student learns to interact with resource persons. (Resource Persons)
_____ 11. The student becomes familiar with community resources beyond the school. (Learning Excursions)

CLASSROOM OBSERVATION RECORD (continued)

____ 12. The student receives an awareness of various jobs, persons, or situations via role-playing and/or simulation. (Role-playing)

____ 13. The student receives sensory stimulation. (Hands-on Activities)

14. The student receives an awareness of concepts in:

____ a. Technology
____ b. Economic
____ c. Society
____ d. Self

Comments:

Widmer, E. L., In Kindergarten. Elementary School Journal, University of Chicago Press, 1967.
Schermann, A. Cognitive Goals in the Nursery School. Child Study. Summer, 1966, Vol. 28, #2 (109).