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ABSTRACT

Appendixes to the final report on the Yonkers and Syracuse, New York, career education projects are contained in this volume. Third party evaluation reports (Appendix D) comprise the entire document with the exception of six pages (containing Appendixes A, B, C, E, and F which provide brief information concerning related career education programs and lists of instructional materials developed by the two projects. The first two sections of Appendix D cover evaluation reports (for 1974 and 1975) for the Syracuse project, conducted by Educational Services, Inc. The 1974 report focused on students' acceptance of the program activities, and teachers' and staff perceptions, attitudes, and abilities to administer the new curriculum units. The 1975 report was concerned with product and process objectives. Evaluators concluded that the project had achieved all major goals, and that career education had become an integral part of the curriculum offering of the school district. The Yonkers evaluation report, conducted by Policy Studies in Education (PSE), focused on project staff activities. Instruments were developed for surveying teacher attitudes toward career education, measuring the impact of in-service workshops, assessing teacher involvement with career education, and measuring the impact of the program on student performance. The evaluators concluded that a good start had been made and that the district should continue this effort. Survey instruments used by PSE are included throughout the report. (TA)

FINAL REPORT

Project No. V361008L
Grant No. OEG-0-73-2982

Research and Development Project In Career Education Cities of Yonkers and Syracuse, New York

Conducted Under
Part C of Public Law 90-576

Volume II of II

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August 11, 1975

On November 9, 1972 the Elementary Curriculum Revision Team, including parents and other interested group representatives, met at the Gotham Inn in Syracuse to begin an orientation program for the Life Centered Curriculum.

The initial activity for the orientation was to view the film "Career Education" available from the U.S. Office of Education. Approximately one week prior to its presentation, the film was recalled by the U.S. Office after pressure was exerted by various women's groups. A film related to career education was substituted without being previewed by the project staff. One of the parent representatives at the meeting was the educational co-chairperson for the local National Organization for Women. The film was extremely "sexist" in nature and received strong objections from the local NOW group.

A series of discussions, meetings and communications between the local NOW chapter and the project staff have taken place throughout the duration of the program. The project staff feels that this dialogue has been productive in that it oriented a vehicle for providing increased sensitivity on the part of all involved and resulted in more objectivity on the part of the classroom teacher in dealing with any type of a sensitive issue.

The specific steps taken to insure a non-stereotyped curriculum were:

1. All materials in the Life Centered Program were reviewed to remove those with racist or sexist stereotypes.
2. Materials were reviewed and edited in regard to job titles.
3. Graphic artist was hired to redesign all pictures thought to be stereotyped.
4. Representatives from the Human Rights Commission worked closely with the rewrite team offering suggestions.

Niagara Mohawk Career Wagon

In the fall of 1973, a "Career Wagon" was developed and built by the Niagara Mohawk Power Corporation on request of Mrs. Tina Norton, 4th grade teacher, Van Duyn School. The development of the wagon was under the direction of Mr. Gerald Rockower, Systems Supervisor, Educational Activities, Niagara Mohawk Power Corporation.

The development of the Career Wagon was a direct result of the Life Centered Curriculum and its base of Career Education and self-awareness. The new awareness for children of the many varied kinds of work that both men and women are doing is nicely reinforced by the materials contained in the Career Wagon.

The 3' x 5' wagon exhibits a career ladder of job opportunities in a large power company; it is complete with job descriptions, pictures, tools, wearing apparel, etc. for the children to use. Lessons and student activities to aid in the utmost utilization of the wagon were also prepared.

The Career Wagon was tested during the school year 1973-74 in ten schools in the Syracuse City School District on a rotating basis, as part of the pilot program of the Life Centered Curriculum. The wagon reached some 300 classrooms at all elementary grade levels, serving about 5,000 students. In 1974-75, the number of schools involved with the wagon enlarged to 20, and 9210 students were reported to be actively engaged with its materials.

For the school year 1975-76 the Career Wagon has been scheduled into all of the Syracuse City School District's elementary schools. The schedule has been arranged so that the wagon will be delivered to the school during the time that the 6th grades of that school are involved in the Career and Skill Centers visits. Thus, the 6th graders experience with "hands-on" activities will be further reinforced by the activities in the wagon while the rest of the elementary population can also be involved with this program.

The response to this wagon has been extremely positive by both students and teachers. This first hand look at what is needed to perform the many varied jobs of just one company has helped to make the children aware of the importance of being employed in a field of labor. The students awareness of the many varied kinds of work that both men and women are doing that is found in this program reflects and reinforces a vital component of the Life Centered Curriculum.

General Electric - Program to Increase Minority Engineering Graduates (PIMEG)

In the fall of 1974, Joan Clark and Edward Weinheimer of the Personnel Division of the General Electric Company, Electronics Park, contacted the Life Centered Curriculum staff to discuss plans for establishing a career education program in selected elementary schools of the Syracuse City School District. General Electric was primarily interested in promoting engineering careers among minority groups, but the program was and is applicable to all students.

General Electric found as a result of previous efforts at the secondary level that it was necessary to start much earlier in the child's school life to acquaint him/her with the nature and opportunities of various engineering careers.

The program's activities involved the 6th grade classes at Dr. Martin Luther King, Herrick, Sumner and Cathedral Schools. (Later, Seymour School was added to the program also). The aim of the program was to reach elementary students in an exposure project, to give the students an early opportunity to learn about engineering as one career option in a multitude of choices. (This aim of learning about various jobs is reflected in the "Occupational Clusters" unit of the Life Centered Curriculum).

Four presentations were scheduled into each of the five schools involved. The presentations were:

1. A film - "Piece of the Action" - twenty-seven minutes long and highly musical; its intention is getting the students attention toward engineering in an entertaining manner instead of "turning them off" with highly technical terms.

2. Slides - "What is Engineering" - twenty minute slide presentation explaining different engineering disciplines through cartoon treatment.

3. Slides - "You Can Make It If You Try" - twenty minute slide presentation achieves its goal of creating the understanding that minority group members have been making technical achievements and contributions to society over the years.

4. Simple Experiment/Rap Session - Follow-up presentation to implement the core program. Visiting engineers utilize experiment booklets, slides, etc. to complete the final session. Discussions and question/answer periods are also engaged in.

The program was enthusiastically received by students and teachers. The 6th graders were exposed through the program to the possibilities of exploring an engineering career, as well as to the relevance of their education to their career futures. The program tied in very well with the career awareness and self-awareness aspects of the Life Centered Curriculum. Plans are being made to maintain the program for the school year 1975-76 and, hopefully, to expand it to involve more schools and students.

Third Party Evaluation

Syracuse (2 sections)

Yonkers

(Full Text Appended)

EVALUATION OF THE

LIFE-CENTERED CURRICULUM

(CAREER EDUCATION) PROJECT

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June 15, 1974

Prepared for:

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CONTENTS

CHAPTER I

History and Background

The Life-Centered Curriculum (LCC) project established by the Syracuse City School District (SCSD) of Syracuse, New York, is funded under Part C of PL - 576 for Research and Development in Vocational Education.

At the time of this report, the project is completing its second year. Major activities scheduled for the second year have been or are near being completed.

In October, 1972, SCSD and ESI entered into a memorandum of agreement whereby ESI agreed to provide an independent, third party evaluation of LCC as required by federal funding regulations. The memorandum of agreement was renewed to cover the period July 1, 1973 through June 30, 1974, to provide evaluation for the second year of the project.

During the second project year, ESI has provided the following services:

A. Worked with key project administrators and staff in developing the overall evaluation design for activities related to the second year of the project.

B. Developed and modified various test instruments to measure specific, unique aspects of LCC.

C. Maintained telephone and written communications with project staff members.

D. Met with project staff in March to discuss progress and review evaluation requirements.

E. Interviewed classroom teachers in order to obtain "soft data" relevant to project progress.

LCC, as conceived and funded, proposes to revise the elementary (K - 6th grade) curriculum of SCSD to encompass the concept of career education. LCC is operating under this broad, general time frame:

First year: Develop 28 LCC curriculum units;

Second year: Pilot test LCC units in two classrooms in 36 elementary schools in SCSD;

Third year: Implement LCC units into all elementary classrooms in SCSD.

Because of this time structure, ESI helped project administrators establish long - term, broadly stated goals for the project. Then, projected activities for the second year were stated as specific, short - term objectives supported by variables and measurement devices for teachers, staff and students. This design is displayed in Chart I.

Design of specific, short term objectives for the third project year will be prepared in July, 1974.

This report deals with measurement of progress toward realizing specific, short - term objectives as well as observations concerning progress toward broad overall goals.

CHART I

Evaluation Overall Project Goal

Variable	Variable Indicator	Goal
1. Existing general academic curriculum units utilized in grades K - 6 of Syracuse City Schools	1. 28 Life Centered Curriculum (LCC) units. 2. Attitudinal changes toward LCC among elementary teachers. (Use ESI pre and post test instruments.) 3. Student responses a. Pilot testing in two classrooms in 36 elementary schools. (second year) b. Pilot testing all classrooms in 36 elementary schools. (third year)	Provide and pilot test new Life Centered (career education) Curriculum materials and techniques within the next 3 years (K - 6)

CHART I (continued)

ECRT Teachers' Objectives

Variable	Objective	Measurement or Observation	Data Collection Schedule
ECRT teacher perceptions of LCC units	At least 85% of teachers understand, accept and utilize LCC units.	ESI Form 217 - 03 (Teachers' Monthly Summary)	Monthly, beginning October, 1973
ECRT teacher attitudes	At least 95% of ECRT teachers evidence positive attitudes toward LCC.	ESI Form 217 - 03 Questions A, B, C and D ESI Form 217 - 01	Monthly, beginning October, 1973. Random sample - February, 1974
ECRT teachers utilize units	1. ECRT teachers reporting usage of LCC units from some to great deal. 2. LCC staff observe related activities in 50% of classrooms during visits throughout school year.	ESI Form 217 - 03 LCC Staff records	Monthly, beginning October, 1973
Attitudes of other elementary faculty	1. Establish overall attitudes of non-involved faculty toward career education and LCC units.	ESI Form 217 - 05	Random sample in January, 1974 (at least 50 teachers)
Validation of contents of LCC units	75% appropriate suggested changes, expansion, additions incorporated in LCC units.	ESI Form 217 - 03 (sorted by LCC unit #)	Monthly, beginning November, 1973
ECRT teachers have access to resource materials	At least 85% of ECRT teachers report resource materials readily available.	ESI Form 217 - 03 Questions 3 and 4	Monthly, beginning November, 1973

CHART I (continued)

LCC Staff Objectives

Variable	Objective	Measurement or Observation	Data Collection Schedule
Relationships of LCC Staff to ECRT teachers	95% of teachers indicate positive relationships with LCC staff.	ESI Form 217 - 06	May, 1974
LCC staff response to ECRT evaluation of units	Demonstrate viability in responding to requests for change.	Number of requests for change, LCC Teacher Suggestion Form Number of changes made or planned	As units are completed. June, 1974
Staff activities	LCC staff members visit classrooms during year.	ESI Form 217 - 06 Staff records	Throughout year May, 1974
Staff planning	Demonstrate sound planning techniques for final six months of project.	ESI Form 217 - 05	January, 1974

CHART I (continued)

LCC Students' Objectives

Variable	Objective	Measurement or Observation	Data Collection Schedule
Student participation in classroom activities	85% of ECRT teachers report students interested, very interested or highly motivated.	ESI Form 217 - 03 Question 7	Monthly, beginning in November, 1973
Students' self-image	To produce significant increase in student self-image.	Pages A - H ESI Form VSR, 1 & 2 grades ESI Form CAS, 3 - 6 grades	Control and non-control groups
Students relate school activities and personal attitudes to world of work	To produce a significant gain in degree of relationships.	ESI Form VSR, 1 & 2 grades ESI Form CAS, 3 - 6 grades	1 control and 1 treatment classroom per grade. (Different schools) Grades 1 - 6

CHAPTER II

Long Range Goals

The overall goal of the Life-Centered Curriculum project, as previously stated, is to revise the elementary (K - 6th grade) curriculum of SCSD to encompass the concept of career education.

For evaluation purposes, this goal was stated as follows:

Provide and pilot test new Life-Centered (Career Education) curriculum materials and techniques within the next three years (K - 6).

The variable to be changed was identified as existing general academic curriculum units utilized in grades K - 6 of SCSD.

Indicators were identified as:

A. Production of 28 LCC units.

B. Attitudinal changes among elementary teachers toward LCC.

C. Student responses

1. pilot testing in two classrooms in 36 elementary schools (second year).
2. pilot testing in all classrooms in 36 elementary schools (third year).

As this report is being compiled, all data and observations point toward on-time achievement of this long-range goal. The Elementary Curriculum Revision Team (ECRT) completed work on 28 LCC units during the first year. Project personnel attended to the production of these units from July 1 through August 31, 1973, in order that pilot-testing would begin on schedule with the opening of the 1973 - 74 school year. Orderly pilot testing has occurred during the second project year.

Considering the complexities of the major task, it is rather remarkable that so much has been accomplished toward realizing the overall goal.

The overall project goal is structured to reflect the achievements of the total project which at the time of evaluation design was projected for three years. It is apparent that two-thirds of the overall goal has been realized. It is unfortunate that the final effort for LCC has been reduced and that the entire project is scheduled to terminate December 31, 1974. It will be a difficult task to complete full scale implementation under this timetable.

CHAPTER III

ECRT Teachers and General Faculty

The overriding concern for the second year of the LCC project involved teachers' perceptions, attitudes and abilities to administer the newly developed curriculum units. Specific objectives to measure these concerns were developed. ESI worked closely with project staff administrators in developing appropriate and usuable instruments to gather data to reflect on the objectives.

Variable: ECRT teacher perceptions of LCC units.

Objective: At least 85% of teachers will understand, accept and utilize LCC units.

Data to support this objective were obtained through the utilization of the Teachers' Monthly Summary, an information gathering form developed by ESI and numbered ESI Form 217 - 03. This form was utilized beginning in October, 1973, at the time the units were actually taken into the classroom. Table 1 displays this form, along with cumulative results obtained from October 1973, through April 1974, at which time data gathering was terminated in order that this report might be prepared.

Concerning utilization of the units, only 19% of the teachers participating in pilot testing activities reported they had not used the LCC units. On the other hand, 81% reported usage from at least four times during a four week period to a maximum of twenty times during the same period. The percentage of teachers reporting unit utilization has increased steadily throughout the school year.

In ranking student reactions to the LCC units, 97.9% of the involved teachers felt their students were somewhat interested to highly motivated and enthusiastic. Only one percent of the involved teachers felt their students were reacting negatively. In evaluating the actual units, 76.3% of the teachers reported the units were acceptable, useful and appropriate, or ready for full - scale implementation. Another 21.3% felt the units were in need of more development, a reaction to be expected since the units were undergoing pilot testing. Thus, a total of 97.6% of the teachers found the units of use to them in their classrooms. Only 2.4% felt the units were not usable or appropriate.

In view of this data analysis, ESI feels that this objective has been accomplished.

Variable: ECRT teacher attitudes.

Objective: At least 95% of ECRT teachers evidenced positive attitudes toward LCC.

Again, ESI Form 217 - 03 was utilized to draw observations concerning teacher attitudes on aspects of the LCC units. As discussed previously, and as evidenced in results displayed on Table 1, it is apparent that a high percentage of ECRT teachers are maintaining positive attitudes toward the entire LCC project. Also supporting this objective are results of four key questions from ESI Form 217 - 01, Teacher Information Survey. This instrument was administered through a random sampling of ECRT members in February, 1974. Results are displayed on Table 2.

In assessing the four questions, it is evident from results of Questions A, B and D that highly positive attitudes exist among ECRT members

Table 1

TEACHERS' MONTHLY SUMMARY*

1. During the past four weeks, I used the LCC units in my classroom:

19.0 %	A.	None
23.0 %	B.	At least four times
18.0 %	C.	From four to eight times
28.0 %	D.	From eight to sixteen times
12.0 %	E.	Twenty times

2. I obtained some type of resource material related to the LCC units and used this material in my classroom:

10.5 %	A.	None
38.7 %	B.	At least four times
27.2 %	C.	Four to eight times
17.1 %	D.	Eight to sixteen times
3.1 %	E.	Twenty times
(3.5 %		Did not comment)

3. In obtaining suggested resource material, I have

1.7 %	A.	Experienced great difficulty
17.1 %	B.	Experienced some difficulty
54.4 %	C.	Had no particular problem
18.8 %	D.	Found resource material readily available
(8.0 %		Did not comment)

4. The resource material which I have requested has been:

18.8 %	A.	Not available anywhere
18.8 %	B.	Not available in my building
62.0 %	C.	Available only from LCC staff
.3	D.	Available in my building

5. I have used student-centered activities suggested in the LCC units:

1.4 %	A.	Not at all
48.1 %	B.	Some
49.5 %	C.	Regularly
(1.0 %		Did not comment)

Table 1 (continued)

6. I feel student-centered activities suggested in the LCC units are:

1.7 %	A.	Inappropriate and unrealistic
26.1 %	B.	In need of some modification
35.5 %	C.	Acceptable
26.1 %	D.	Appropriate and realistic
9.1 %	E.	Excellent
(1.4 %		Did not comment)

7. My students engaged in the LCC units are:

1.0 %	A.	Reacting negatively
12.5 %	B.	Somewhat interested
38.0 %	C.	Interested
32.1 %	D.	Interested and motivated
15.3 %	E.	Highly motivated and enthusiastic
(1.0 %		Did not comment)

8. The LCC units assigned to me are:

2.4 %	A.	Not usable and not appropriate
21.3 %	B.	In need of more development
28.2 %	C.	Acceptable
41.1 %	D.	Useful and appropriate
7.0 %	E.	Ready for full-scale implementation

*Although results were gathered monthly, data reflects cumulative data.

Table 2

TEACHER INFORMATION SURVEY

Question	Desired Response	1 #	1 %	2 #	2 %	3 #	3 %	4 #	4 %	5 #	5 %	Mean
A. Career education is an essential part of elementary education and every child should receive such education.	1	13	81.3	3	18.7	-	-	-	-	-	-	1.18
B. Elementary school pupils less likely to pursue professional careers should receive special career education, while other students should continue in current educational processes.	5	1	6.2	4	25.0	-	-	4	25.0	7	43.8	3.75
C. Any career education is best treated in a unique subject area in elementary education such as math or social studies in order that the important concepts of career development and "world of work" receive special attention.	5	4	25.0	3	18.7	4	25.0	3	18.7	2	12.5	2.75
D. Current elementary education does not include sufficient emphasis on career development and the relationship between education and work.	1	9	56.3	6	37.5	1	6.2	-	-	-	-	1.50

are divided in Question C. However, the question itself possibly is creating some confusion. ESI feels the question should be disregarded, and it will be deleted from any further application of the data gathering instrument. This objective has been accomplished.

Variable: ECRT teachers utilize units.

Objective: ECRT teachers report usage of LCC units from some to great deal.

Reference is again made to Table 1, where cumulative results from the teachers' monthly summary are displayed. Statement 1 displays cumulative totals and shows that 81% of the ECRT teachers utilized the LCC unit from at least once a week to a maximum of five times per week. The mean of the utilization study falls between response selection C and D. This indicates that almost maximum utilization is being made. This maximum utilization indicates to ESI that this objective has been accomplished.

Variable: Attitudes of other elementary faculty.

Objective: Establish overall attitudes of noninvolved faculty toward career education in LCC units.

In order to measure this objective, ESI worked with project staff members in developing ESI Form 217 - 05. The form was designed to be administered to at least fifty elementary grade teachers who have not been directly involved in the LCC project, but who will be expected to utilize the LCC units and philosophies in their classrooms during the final year of the project. It is obvious, in reviewing the data from the opinion sampling, that members of the faculty of the elementary schools of Syracuse City School District have highly positive attitudes and opinions toward the Life-Centered Curriculum project. This condition can be attributed to the fine support

work of the LCC staff throughout this year in conducting workshops for all elementary teachers, to help them develop an understanding for the new program they will be asked to implement in the 1974 - 75 school year. Table 3 displays data obtained from the general elementary sample.

This objective has been accomplished.

Variable: Validation of contents of LCC units.

Objective: 75% of appropriate suggested changes, expansions, additions are incorporated in revised LCC units.

At the request of ESI, the project has maintained data concerning utilization of each unit. Project staff members have gone to great lengths to work closely with teachers in compiling information concerning suggested changes and/or additions to the units. This information will be utilized during the summer of 1974, in revising the units. All indicators, including interviews with staff and teachers, indicate that all appropriate changes and/or additions will be incorporated in the LCC units during the revision workshops.

ESI feels that this objective has been accomplished.

Variable: ECRT Teachers have access to resource material.

Objective: At least 85% of ECRT teachers report resource materials readily available.

In support of this objective, ESI structured two statements on ESI Form 217 - 03. Questions 3 and 4 are perceived as relevant to this objective. Data results are displayed in Table 1 of this chapter. In response to Question 3, 73.2% of ECRT teachers reported they had no particular problem in obtaining suggested resource material or that they

Table 3

GENERAL ELEMENTARY FACULTY OPINION SAMPLE

1. I have heard of the Life-Centered Curriculum program and the development of new elementary curriculum units.

91% yes 9% no

2. I believe that revision of the elementary curriculum to include career education is:

4%	A.	Completely unnecessary
2%	B.	Of little use
10%	C.	All right
57%	D.	A positive step
23%	E.	Absolutely essential
(4%		Did not comment)

3. In my discussions with fellow teachers, the new elementary curriculum units have been discussed or mentioned:

6%	A.	Not at all
57%	B.	Some
23%	C.	Quite a bit
8%	D.	In great detail
(6%		Did not comment)

4. Based on my information, I feel the new elementary units are:

0%	A.	Not appropriate or usuable
19%	B.	Useful, but need revision
55%	C.	Useful
4%	D.	Comprehensive and complete
(22%		Did not comment)

5. My feelings about teaching from the new elementary units are:

1%	A.	Very negative
2%	B.	Somewhat negative
10%	C.	Undecided
36%	D.	Somewhat positive
23%	E.	Very positive
(28%		Did not comment)

Table 3 (continued)

6. During inservice meetings concerning the new elementary units, I would like to have the following information and/or procedures presented: (please rank by order of preference.)

4	A.	Concepts of career education
2	B.	Detailed discussions of content of the new elementary units
3	C.	Reactions of teachers who pilot tested new elementary units
5	D.	Philosophies, goals and objectives of the Life-Centered Curriculum Program
1	E.	How-to-do-it information on classroom implementation
6	F.	Presentation explaining linkage between goals of this program and other goals and objectives of the Syracuse City School District.

found resource material readily available. Responses to Question 4 indicate that availability of requested resource material has not been as great as is desired. The availability and obtainability of resource material have been discussed with project staff members and will be explained in greater detail in the revised units

Although this objective was not accomplished, ESI feels that modifications in the curriculum unit designs will increase teacher understanding of obtaining resources and the availability of requested resources.

In addition to gathering data and evaluating program objectives, ESI evaluators sought from May 14 - 16, 1974, to collect what might be termed "soft data."

Several questions were foremost in the minds of the evaluators as they visited schools, teachers and a workshop. These questions related to: (1) teacher understanding of units; (2) utilization of units; (3) teacher attitudes toward units; (4) teacher freedom in making suggestions in units; (5) student interest in and motivation from units; (6) unit effect on students in improving personal self-image; (7) unit impact on creative and innovative teaching.

Many new ideas have been collected, demonstrating the interest and concern of individual teachers that innovation be disseminated among other teachers in the program. For instance, one teacher noted that pamphlets providing concise job descriptions could be obtained from the Division of Employment of the New York State Department of Labor. The teacher cited 11 examples of jobs included in the pamphlets and provided the address of the employment division office.

One teacher's explanation of the strategy used in a study of voting was interesting. The teacher said: "After a discussion about responsibilities in November, we had a class election with nominations and open voting. The students elected were those who had more influence or who were ' on the scene.' After vacation we had another discussion about responsibilities, and each person voted by writing preferences on a slip of paper. The students elected were those who are more academically involved." Similar observations were later made by another teacher participating in the evaluation interview series.

In one class, Walt Whitman's "I Hear America Singing" was used as complementary material to the unit on "Our Country is a Democracy." In the "Let's Take a Walk" area, one class used a window shade on which a map had been drawn. During the walk, students unrolled the shade as needed to see which way to walk.

Some of the ideas might be considered simple, but their significance is that they demonstrate the concern and interest of the teachers. One teacher said simply: "We made poems up about our lives." A teacher who had not thought about that idea could borrow it, or the idea could stimulate the thinking of another teacher.

Feedback materials and evaluation interviews demonstrate that perceptions of self are being accomplished as early as the first grade. Mirrors have been most useful, and one teacher told the interviewer that students began to pay more attention to their personal appearance after a mirror was installed. A kindergarten teacher used a mirror for the unit entitled "The World of Me." She said: "When children saw themselves they said, 'That is me!'" The students, five and six years old, would grin into the mirror, she said, and some liked the experience so much they wanted to stay there. The

teacher was somewhat surprised that there were no questions from the students about how the mirror worked. (She finally told them.)

"In the morning they rushed to the mirror," the teacher said. "Many would then ask to be excused. They would go wash the corners of their eyes or the cereal off their mouths." The teacher said the children began to smile more. She encouraged this reaction by telling them: "If you are lonely, go to the mirror and smile." She said she could detect a definite, positive change in the students. "The result was a positive feeling about themselves." The teacher had posted a sign in the classroom that helped set the cheerful mood. It read: "I may be small, but I do exist." The teacher credited the Life-Centered Curriculum with bringing new ideas to her attention.

The interviews revealed that teachers not only are taking advantage of feedback, but are applying the feedback technique in their classes with success. This fact again demonstrates the importance of feedback availability. For example, one teacher said: "Children began by discussing why people are different. They listed things that they were good at and things they would like to improve in. We compared lists and saw the variety of streugths and weaknesses in the class. We then extended the idea to the fact that everyone's fingerprints are different. We took our fingerprints and compared them with others. The discussion was extended to how police use fingerprints to catch a criminal."

Another example from feedback sheets: "Many students are hesitant about talking about themselves. I began by discussion of classroom goals and reasoning. Each student was to give one thing he did well and one needing improvement. I brought in some of my picture albums and told them about my

ambitions and how I got to be here."

Another simple example: one teacher wrote down the first names of all students in the class, told them where the names originated and what they meant.

Evaluation interviews indicate that teachers are not hesitant to speak up about the strong points and weak points of the program. Those whom ESI talked with viewed the materials as suggestive, but not binding. They had adequate means for feedback, and had encountered no problems in making their views and ideas known. The teachers reported that they took the LCC guidelines and adapted them to their own approach and ability. Where there was criticism, it was primarily in the nature of self-criticism from teachers who thought they could have made better use of the materials. An openness seems to permeate the program, resulting in positive criticism. When something doesn't work, the teacher says simply: "We will fix it."

A first grade teacher used a comment from a student during a discussion of Thanksgiving ("We aren't going to have turkey at our house.") to set up a field trip to a nearby motel restaurant. As a result of gentle nudging from the teacher, the manager agreed to feed the students, plus some parents who went along, a lunch of turkey sandwiches, milk and donuts. The students were given a tour of the restaurant and an explanation of jobs they encountered. When the students returned to the classroom, the teacher asked them to draw pictures of workers whose jobs they liked best. Most of the girls liked the cocktail waitress, who wore a fox outfit. The boys liked the kitchen workers. In preparing for the trip, the teacher had told the students to make believe they were eating in a restaurant. When they actually ate in the restaurant, their behavior was exemplary, the teacher said. The students named the field trip "A Family Affair."

An intermediate level teacher used the politics unit to divide the class into political parties which nominated candidates and discussed issues. The teacher thought such an approach made the political process more realistic to the students and the issues more significant.

For a teacher caught up in the traditional approach to subject matter, the units seem to offer an opportunity to try new approaches. For example, one teacher discarded the established approach of having students memorize the names of states, and instead had them study the nation from the community point of view. "But will the students know where Montana is?" the teacher was asked. "If they don't, they'll know how to find it," the teacher replied.

Another teacher, responding to a general question of how to integrate LCC materials into the regular curriculum, suggested: "Whenever an occasion arises where the teacher can incorporate new approaches, the teacher should forget the old way of doing it and try something new." For instance, that teacher canceled reading class one day to attend an assembly featuring an Indian chief. After assembly the class went into human relations, discussing the plight and problems of minorities in America. What was the result of using human relations materials? "The class as a whole was more responsible in daily routine. They seem to understand better what relationships are, what individual differences mean and what toleration is."

At least two excellent programs were identified by ESI evaluators as outgrowths of the LCC materials.

In one school a sixth grade teacher created a school store operated by the class. The students sold candles in their neighborhood to get money to buy goods to sell in the store. Organization of the store led to several

other projects. Cards were sent to fellow class members who were ill, and to those having birthdays. The class also organized a career day for intermediate classes at the school. The teacher was surprised at the success of the venture. Attendance improved markedly, as did cooperation and the assumption of responsibilities. The teacher was impressed with organizational abilities of the students. In late May, the students still had $180 in the bank. They took a class trip to the planetarium in Rochester.

In another school a third grade teacher organized a group of mini-courses with nonschool personnel (mostly mothers) teaching the courses. The one-hour courses were open to third and fifth grade students. They were held once a week, changing every six weeks. About 40 adult volunteers were involved in the program, which featured such courses as knitting, bowling, horticulture, cooking, carpentry, art, typing, Spanish and drama. The mini-courses were held each Friday. School officials reported that attendance was nearly perfect on those days. Teachers made several interesting observations. One teacher who taught typing said a boy who already knew how to type took the course. "To take care of his correspondence," she explained. Who did he write? "Well, he wrote a letter to a television station and one to the newspaper and another to someone who had hosted the class on the field trip." The boy was a third grader. The Spanish teacher is a native of Barcelona, and by mid-point of the final six weeks of the school year her students were carrying on simple conversations in Spanish. The teacher said she was thankful for the opportunity to teach the course. She had given some thought to her career as a teacher, and teaching the mini-course strengthened her resolve. The volunteers also seemed to benefit from the mini-courses as much as the students. As one mother put it: "I don't know who gets the most out of this, them or me."

The evaluation interviews revealed a strong, vibrant program. The Life-Centered Curriculum has resulted in an examination of traditional subject matter and methodology. Measured in this light, the program continues to be a success.

CHAPTER IV

LCC Staff

At the time of the preparation of this report, complete data as specified in the evaluation design, relating to evaluation of the LCC staff have not been obtained. However, ESI feels that enough soft data from interviews with teachers are available to allow conclusions to be drawn concerning the effectiveness of the staff during the second project year.

Variable: Relationship of LCC staff to ECRT teachers.

Objective: 95% of teachers indicate positive relationships with LCC staff.

It was anticipated that a data gathering instrument, ESI Form 217 - 07, entitled ECRT Member Information Survey, would be administered to the appropriate classroom teachers in May, 1974. Possibly this instrument has been administered, but ESI has not received the results. However, it is evident from teacher interviews conducted by ESI evaluators in May, 1974, that highly positive relationships exist between all ECRT members and the current staff.

The teacher interviews discussed in depth in Chapter III of this report are definite indications of the effectiveness and efficiency of the LCC staff. Particularly significant in viewing the overall impact of staff members is the free flow of information from teachers involved in pilot testing materials. Also significant is the fact that LCC staff members have conducted half - day inservice workshops for the staff of all elementary buildings in the Syracuse City School District. These workshops have provided a direct explanation of the Life-Centered Curriculum, and workshop participants have had an opportunity to engage actively in applying unit strategies. These

workshops have also provided teachers the opportunity to review the units personally and to select those they would like for personal use. Based on these facts, and the observations of professional evaluators, ESI feels this objective has been accomplished.

Variable: LCC staff response to ECRT evaluation of units.

Objective: LCC staff demonstrate viability in responding to requests for change.

Approximately 360 new ideas sheets have been returned to the LCC staff by teachers engaged in pilot testing activities. These new idea sheets contain perceptions and suggestions for the units undergoing pilot testing. Throughout the year, staff members have consolidated these suggestions and recirculated information concerning particular units. This action has insured the direct involvement of pilot testing teachers in shaping and reinforcing the curriculum. It has also made the ECRT teachers aware that they are providing a dynamic link in a communications system which will keep the program healthy and growing.

Also reflecting the accomplishment of this objective is the fact that feedback objectives were conducted near the end of the 1973 - 74 school year. During these workshops, ECRT members shared their overall impressions and made suggestions for changes within the units. This information will be supplied to the curriculum revision team, which will work during the summer of 1974.

In the opinion of ESI evaluators, LCC staff members have demonstrated a very healthy viability in responding to teacher perception of the unit.

Variable: LCC staff activities.

Objective: LCC staff members visit classrooms during year.

The complete success of other aspects of the LCC projects indicates that staff members have been very effective and systematic in visiting classrooms and providing support to ECRT teachers. Actually, it is rather astounding that the small staff engaged in this project has been able to have such an impact in a school district as large as Syracuse.

ESI feels that this objective has been accomplished.

Variable: LCC staff planning.

Objective: Demonstrate sound planning techniques for final six months project.

In order to measure this objective, ESI Form 217 - 05, General Elementary Opinion Sample, was designed. Question 6 of this form relates directly to staff planning efforts. This question asks noninvolved teachers to comment upon their perceived needs for information during planned inservice meetings. This question was designed to give LCC staff members some indicators concerning teachers' perceived needs for information and/or procedures. It is obvious in reviewing work statements of the staff that every effort has been made to supply information in the order of preference indicated by faculty members. As has been commented upon in previous portions of this report, staff members have gone above and beyond their commitment by conducting inservice workshops for all elementary teachers. In addition, staff records indicate that solid planning techniques have gone into preparation for the summer workshops during which ECRT members will revise the curriculum units. These staff records indicate that every effort is being made to incorporate suggested changes growing out of the pilot testing phase of the program.

This objective has been accomplished.

Over and above the structured objectives, it is obvious that the LCC staff has done an excellent job in communicating with ECRT members, general elementary faculty members, the administration of Syracuse City School District and the various publics that have evidenced interest in the project.

CHAPTER V

Students

The lack of standardized instruments with nationally established norms makes the task of evaluating curriculum impact on students very difficult in all career education projects with which ESI is associated. Specific instruments have been developed by ESI to deal with this problem. Although these instruments lack validation, they do provide comparisons of controls and treatment groups of students.

Variable: Student participation in classroom activities.

Objective: 85% of ECRT teachers report students interested, very interested or highly motivated.

This observation was to be obtained from Question 7 of the teachers' monthly summary.

Table 4

Question 7 (Teachers' Monthly Summary)

1.7%	A.	Reacting negatively
26.1%	B.	Somewhat interested
35.5%	C.	Interested
26.1%	D.	Interested and motivated
9.1%	E.	Highly motivated and enthusiastic
1.4%		Did not comment

In strict accordance with the data, only 70.7% of the teachers reported their students were interested, interested and motivated or highly motivated and enthusiastic. However, by including the response somewhat interested, the percentage rises to 96.8%. Also significant is the fact that only 1.7% of the ECRT members reported their students were reacting negatively.

ESI feels that this objective has been accomplished.

Variable: Student self-image

Objective: To produce significant increase in student self-image.

ESI has experienced difficulty in securing any valid test instruments to measure this abstract concept. However, two instruments were provided to the project by ESI. The Visual Reference Survey was designed to be used by students in Grades 1 - 3. The Career Awareness Survey was designed for Grades 4 - 6. Both tests were designed for administration to control and treatment groups.

The VSR is designed to elicit responses which indicate students' awareness of self, personal perceptions of environment, work situations and participation in work and play activities. Sheets A - E of the test document deal with personal likes and dislikes. The optimum response is for each child to have feelings of like or dislike concerning each object shown on each page. Table 5 displays results of the visual reference survey administered to treatment and control groups. It is obvious in looking over the results that no statistically significant differences currently exist between students in the treatment group and those in the control group. It is difficult to draw the assumption that the Life-Centered Curriculum Project is not having an impact on student self-image. The VRS is a non-validated test document. ESI recommends that a more refined test document be used to measure student outcomes in Grades 1 - 3 during the next year of the project. It is impossible to comment upon the outcome of this objective for either primary or intermediate groups, because of the lack of sophistication of the test documents.

Table 5

Comparison of Responses
Treatment (LCC Classrooms, 1st, 2nd & 3rd) vs. Control Students
to
Visual Reference Survey

Treatment N = 73
Control N = 68

	T Group % Correct Responses	C Group % Correct Responses
*Sheet A	98.6	98.9
Sheet B	99.3	99.2
Sheet C	99.0	98.6
Sheet D	98.2	97.2
Sheet E	97.1	97.5
Sheet F	67.5	63.3

*Each sheet has ten response opportunities. Optimum scoring is ten responses per sheet per student.

Sheet G	98.5	94.1
Sheet H	100.0	98.5

Variable: Students relate school activities and personal attitudes to the world of work.

Objective: To produce a significant gain in degree of relationships.

The same test documents, the VRS and CAS, were used to attempt to gain data related to this objective.

Table 5 displays responses to sheets F, G and H by control and treatment students in Grades 2 - 3. Obviously, no statistically significant difference exists between the two groups.

Table 6 displays a comparison of the responses of treatment and control group students to the career awareness survey. Although significant change is not apparent, it is interesting to note that students in the treatment group are indicating more participation in and agreement with the activities contained in Life-Centered Curriculum Units. For example, in response to Question 7, concerning understanding and learning about people, students in the treatment group indicate that their most helpful experience was having group discussions about people's likes and dislikes. In response to Question 8, students in the treatment group indicate that they learned most about the world of work by taking field trips. Students in the control group indicate that they learned most about the world of work by memorizing job titles. Therefore, it is reasonable to assume that students in the treatment group are receiving more information about the world of work from non - traditional classroom sources than are those in the control group.

The lack of definitive student outcome data represents the only weak point in the Life-Centered Curriculum project for the second year. ESI shares the concern of the project staff in attempting to identify or to

Table 6

Comparison of Responses
Treatment (LCC Classrooms 4th, 5th & 6th) vs. Control Students
to
Career Awareness Survey

T Group % Correct Responses	C Group % Correct Responses	Questions
		5. Listed below are a number of activities which may have occurred in your classroom. Put a check mark by the five activities which you did most often.
.4	3.4	a. answering the questions in the Social Studies book
10.3	10.3	b. learning more about myself
17.1	9.9	c. learning more about other people
15.8	17.7	d. did projects with my classmates in groups
3.2	2.5	e. memorizing dates and names of important people
16.2	16.7	f. sharing projects and ideas with my classmates
18.0	16.3	g. looking at pictures, filmstrips and films
2.7	9.9	h. reading from my Social Studies book
15.8	2.9	i. listening to people who came to talk to my class
.4	10.3	j. learning the capitols of the states
		6. Look at the list below and pick out the one thing which helped you the most in your classroom in learning about places. Place a check mark by the one you pick.
13.9	17.5	a. taking a field trip
23.3	7.5	b. having a speaker come to the classroom
25.6	27.5	c. reading a book
37.2	47.5	d. making a project

Table 6 (continued)

T Group % Correct Responses	C Group % Correct Responses	Questions
		7. Look at the list below and pick out the one thing which helped you the most in your classroom in learning about people. Place a check by the one you pick.
18.6	17.1	a. talking about how people solve problems
2.3	19.5	b. copying facts out of a Social Studies book about a person's life
62.8	26.8	c. having group discussions about people's likes and dislikes
16.3	36.6	d. sharing our feelings
		8. Look at the list below and pick out the one thing which helped you the most in your classroom in learning about the world of work. (possibilities). Place a check mark by the one you pick.
28.6	1.0	a. having a person talk to us about his/her job
30.9	27.5	b. seeing tools or uniforms of different workers
7.1	32.5	c. memorizing job titles
33.3	30.0	d. taking field trips to different work places
		9. Listed below are a number of activities that happen in a classroom. Place a check by the 4 activities you would like to do the most in your classroom.
17.2	13.4	a. have speakers talk to your class about their work
22.2	19.5	b. work in groups on projects
22.7	23.2	c. taking field trips
3.9	4.9	d. reading Social Studies book
2.8	3.7	e. outlining Social Studies chapters
19.9	21.3	f. looking at pictures, tools and filmstrips about workers
1.7	3.0	g. memorizing job titles
9.7	10.9	h. learning the state capitols

develop more definitive test instruments to be utilized during full scale implementation of the program in the 1974 - 75 school year. Efforts will be made to state objectives in more precise terms so that valid measurements can be obtained. Also, in structuring the evaluation design, every effort will be made to assure that student outcome data is regularly gathered, analyzed and reviewed by appropriate administrative personnel throughout the final year of the program.

In terms of soft data, ESI refers readers of this report to Chapter III, which presents a lengthy discussion of observations made by evaluators during interviews with teachers and visits to LCC classrooms. In reading this narrative, it becomes apparent that students in LCC classrooms are interested and involved. However, no effort was made to measure this observation against classrooms not participating in LCC.

CHAPTER VI

Conclusions and Recommendations

The overall impression of this project by ESI evaluators during two years of professional association is that the project is well administered and effective, and that it has progressed despite various unsettling factors which would have been highly detrimental to a less well organized effort.

It is obvious that the majority of the members of the elementary curriculum revision team are enthusiastic and well - informed in sharing ideas and utilizing the LCC unit.

Members of the general faculty of the elementary school have been well informed of the goals and objectives of the project through the series of in - service workshops conducted by the LCC staff. The majority of elementary classroom teachers are displaying positive attitudes toward career education and the LCC project. This reaction is very important, because these teachers will be asked to accomplish district - wide implementation of the project during the 1974 - 75 school year.

The project staff is very well organized. In addition to accomplishing the objectives structured into the overall evaluation design, the staff has many other accomplishments for the 1973 - 74 school year. They have been very active in disseminating information concerning this project to various publics in Syracuse as well as to many visitors from within the State of New York and across the nation. These activities have been time consuming, but have been handled efficiently by staff members. The overall positive attitudes exhibited by ECRT members and the general faculty can be attributed to efforts of LCC staff members.

The soft data gathered by ESI evaluators during interviews and classroom observations indicate that students involved in LCC activities are interested, involved and motivated. The majority of teachers rank their students as interested to highly motivated when working with LCC units. Reliable data on student outcomes were not obtained because of lack of sophistication of test instruments. Therefore, ESI must rely upon observations and soft data to draw conclusions that students are receiving positive information from the LCC units.

ESI evaluators have the following recommendations concerning the final year of the project:

A. Careful attention should be paid to the availability of resources. Staff members must be alert to the necessity that resources be available in quantities to meet demands when the units are implemented throughout the school district.

B. It should be insured that teachers receive support and direction in the early stages of classroom implementation of LCC units. A degree of the success obtained to date can be attributed to the close working relationship between LCC staff members and classroom teachers. Although the number of classroom teachers will increase dramatically in the fall of 1974, methods must be established whereby LCC staff members continue to provide support and direction.

C. Third party evaluators and LCC staff members should make every effort to identify adequate testing instruments for student outcome data. This recommendation is crucial if valid data concerning the new curriculum units are to be developed

during the life of the project.

D. Efforts should be made to attain better coordination of data requirements and data results between LCC staff members and third party evaluators.

E. New evaluation design should be structured to include specific student outcome objectives.

F. Work should begin as soon as possible on the evaluation design for the third year of the project. This step is mandatory if realistic assessment of student outcomes is to be obtained.

G. The administrators of the Syracuse City School District should attempt to continue support of the Life-Centered Curriculum project through June, 1975. It will be impossible for the project to achieve overall goals if funding is terminated as planned on December 31, 1974.

ESI evaluators feel they would be remiss if special commendations to the staff of LCC were not included in this report. The staff has accomplished so very much in the past year. It is overwhelming to consider the amount of work and the high quality of work done by a very small staff under very adverse conditions. ESI wishes to extend to LCC staff members its sincere gratitude for their cooperation in all aspects of the evaluation. ESI also commends the administration of the Syracuse City School District for its continued support of this interesting and innovative career education project.

FINAL EVALUATION OF THE

LIFE-CENTERED CURRICULUM

(CAREER EDUCATION) PROJECT

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CONTENTS

CHAPTER I

History and Background

The Life-Centered Curriculum (LCC) project, established by the Syracuse City School District (SCSD) of Syracuse, New York, is funded under Part C of PL-576 for Research and Development in Vocational Education.

At the time of this report, the project has completed the majority of all planned activities.

In October, 1972, SCSD and Educational Services, Inc., (ESI) of Waco, Texas, entered into a memorandum of agreement whereby ESI agreed to provide independent, third party evaluation of LCC in accordance with federal funding requirements. This memorandum of agreement has been continued during the two and one-half years that the project has operated.

During this last year of the LCC project, ESI has provided the following services:

1. Worked with key project administrators and staff in developing the overall evaluation design for activities related to the final year of the project.
2. Developed and modified various test instruments to measure specific student outcomes from the viewpoint of students, classroom teachers, and parents.
3. Met with project staff members in August and February in Syracuse to discuss progress, problems,and evaluation requirements.

4. Maintained telephone and written communications with project staff members.

5. Conducted a series of in-depth interviews with classroom teachers in order to obtain "soft data" relevant to objectives of the last year of the project.

LCC, as conceived and funded, proposed to revise the elementary curriculum for grades K-6 of the district so as to encompass the broad objectives of career education. In the original request for funds, SCSD proposed "to review and revise the present curriculum, pro- eachers in-service training and implement a district-wide pilot 'life-centered' program. A 'life-centered' program is one in which all educational experiences, curriculum instruction, and counseling are geared to preparation for economic independence, personal fulfillment, and an appreciation of the dignity of work."

The first year of the project was devoted to the design and initial development of 28 LCC units. First year evaluation dealt primarily with attitudes of Elementary Curriculum Revision Team members and their perceptions of career education, the work processes by which research and resources were identified, and the quality of the units.

The second year of the project dealt with the pilot testing of the units by 72 teachers. ESI evaluators were concerned with determining the degree of utilization, teacher perceptions concerning the appropriateness of the units, and teacher observations of student reactions to the new units. In addition to gathering traditional data, ESI evaluators interviewed a number of teachers in depth in order to explore their perceptions.

The last phase of the project, which actually involved the time period from July 1 to December 31, 1974, was devoted to full-scale implementation of the 28 LCC units into all elementary classrooms in the district. As evaluators, ESI representatives narrowed fields of evaluative interest to student outcomes in an attempt to determine the impact of the new units on the self-awareness and self-concepts of students.

The evaluation design utilized for the final phase of the project is displayed in Chart I.

It should be noted that a slightly different evaluation approach was utilized for the last phase of the LCC project. Objectives were established by product (student outcomes) and process. ESI evaluators and LCC staff members felt this method would give the greatest amount of pertinent information related directly to student outcomes.

For reporting purposes, Chapter II of this report will deal with product objectives, Chapter III will deal with process objectives, and results of in-depth interviews will be presented in Chapter IV.

The conclusions gained both from the last phase and from two and one-half years of association with the project will be presented in Chapter V.

CHART I

1974-75 Evaluation Design

GOAL	PRODUCT OBJECTIVE	MEASUREMENT AND/OR OBSERVATION	DATA COLLECTION METHOD AND SCHEDULE
1. Self-awareness among elementary students.	(Student Outcomes) To determine the extent to which elementary students demonstrate an increase in self-awareness.	1. Student responses to "Understanding Myself" survey. ESI 217-20 Questions 1,2,3,4,8,9	1. Pre test prior to introduction of new curriculum. Students in classes whose teachers attended same workshop. Post test same group in May, 1975.
		2. Teacher responses to "Classroom Teacher Observation" form. ESI 217-21 Questions 1,2,3,4,8,9	2. Pre test teachers at workshop session. Post test same teachers in May, 1975.
		3. Parental responses to "Assessing My Child in School" survey. ESI 217-22 Questions 1,2,3,4,8,9	3. Forms sent to parents prior to introduction of new curriculum. Follow-up sent to parents in May, 1975.
		4. If feasible, ESI interviews in May, 1975. Contingent on funding.	4. ESI evaluators conduct one-to-one interviews with target group teachers, May, 1975.

CHART I (continued)

GOAL	PRODUCT OBJECTIVE	MEASUREMENT AND/OR OBSERVATION	DATA COLLECTION METHOD AND SCHEDULE
2. Awareness of and knowledge about work among elementary students.	(Student Outcomes) To determine the extent to which elementary students demonstrate an increase in awareness of and knowledge about school-work relationship.	1. Student responses to "Understanding Myself" survey. ESI 217-20 Questions 5,6,7,10	1. Pre test prior to introduction of new curriculum. Students in all classes whose teachers attended same workshop. Post test same group in May, 1975.
		2. Teacher responses to "Classroom Teacher Observations" form. ESI 217-21 Questions 5,6,7,10	2. Pre test teachers at workshop session. Post test same teachers in May, 1975.
		3. Parental responses to "Assessing My Child in School" survey. ESI 217-22 Questions 5,6,7,10	3. Forms sent to parents prior to introduction of new curriculum. Follow-up sent to parents in May, 1975.
		4. If feasible, ESI interviews in May, 1975.	4. ESI evaluators conduct one-to-one interviews with target group teachers, May, 1975.

CHART I (continued)

GOAL	PROCESS OBJECTIVE	MEASUREMENT AND/OR OBSERVATION	DATA COLLECTION METHOD AND SCHEDULE
1. Teacher training	To measure the extent to which all elementary teachers in Syracuse City School District received in-service related to LCC units.	1. Staff records of number of in-service workshops.	1. ESI inspects staff records in May, 1975.
		2. ESI interviews with teachers if feasible.	2. May, 1975.

CHART I (continued)

GOAL	PROCESS OBJECTIVE	MEASUREMENT AND/OR OBSERVATION	DATA COLLECTION METHOD AND SCHEDULE
1. Teacher participation	To determine the extent to which all elementary teachers utilized LCC units during 1974-75 school year.	1. Teacher responses to "Utilization of LCC Units" survey. ESI 217-23 (to be developed)	1. Surveys distributed to 100 randomly selected teachers in elementary grades in May, 1975.

CHART I (continued)

GOAL	PROCESS OBJECTIVE	MEASUREMENT AND/OR OBSERVATION	DATA COLLECTION METHOD AND SCHEDULE
1. Student interest	To determine the extent to which student interest in school has increased.	Attendance records for 1974-75 school year vs. attendance records for 1973-74 school year.	Collect attendance figures from randomly selected elementary schools for 1973-74 school year and 1974-75 school year. Should involve at least 4 schools.

CHART I (continued)

GOAL	PROCESS OBJECTIVE	MEASUREMENT AND/OR OBSERVATION	DATA COLLECTION METHOD AND SCHEDULE
1. Reliance on LCC staff	To demonstrate the extent to which LCC units were utilized in classrooms without assistance by specialists.	LCC stafi records of requests for assistance maintained by months.	Records maintained monthly until May, 1975.

CHAPTER II

Product (Student Outcome) Objectives

The end result of any attempt to effect educational change and innovation must deal with the impact such change and innovation has on students. This result should be measured by student reaction as well as the observations of students by teachers and parents. This philosophy was used to develop the evaluation design for the final phase of the LCC project. Methods and processes had been measured and analyzed for two years. It was now time to attempt to determine the worth of the new curriculum units as measured by student outcomes.

A problem which has plagued career education projects across the nation arose immediately. The lack of validated, acceptable test documents severely hampered scientific efforts to measure student outcomes. Although two validated tests exist for elementary students, these were not acceptable because (1) they sought to measure numerous areas not dealt with through the LCC units and (2) project administrators and staff objected to the basic test construction.

These decisions necessitated construction of test documents by ESI. Such documents were constructed, but no effort was made at validation. Complementary test documents were devised to be administered to teachers and parents to attempt to secure matching and/or contradictory information on student attitudes toward themselves.

Goal: Self-awareness among elementary students.

Objective: To determine the extent to which elementary students demonstrate an increase in self-awareness.

Measurement and/or observation: Student responses to questions 1, 2, 3, 4, 8, and 9 on "Understanding Myself" survey.

Data collection methodology called for the traditional pre-post test situation. However, a mysterious disappearance of survey documents and evaluation design in the mail service caused these plans to be abandoned. Classroom teachers from one school, Elmwood Elementary, had not participated in LCC in-service workshops at the time that a new set of survey documents was transmitted to project officials. These students and teachers were given traditional pre and post tests.

Since pre and post tests could not be obtained from a valid sample, control and treatment groups were established. Students, teachers, and parents at two parochial schools not participating in this project were selected as the control group. These two schools are St. Brigid's and St. Lucy's. Six elementary schools in the district were selected as treatment schools. High exposure classrooms (defined as those classrooms where LCC units had been utilized at least four hours each week on an average since October 15, 1975) were identified in each of the schools, and surveys were administered to treatment group students in early May, 1975.

Results of administration of "Understanding Myself" survey among control and treatment students are displayed in Table 1. Responses to the significant questions related to this objective show little statistical difference between the two groups. Generally, the treatment group ranks somewhat higher than the control group, but the degree of separation is not particularly significant.

Table 1

Comparison of Responses to "Understanding Myself" by Treatment and Control Students

Question	% Desired Responses Control (N=357)	% Desired Responses Treatment (N=208)
1. Are you excited about what you learn in school?	82%	80%
2. Do you ever try to learn more about school work on your own without the teacher telling you?	72%	73%
3. Does working on different projects help you understand about things better?	90%	94%
4. Does school help you learn about yourself?	73%	82%
5. Does school help you learn to work with others?	91%	92%
6. I think school will help me become what I want to be when I grow up.	82%	88%
7. I think the subjects I study in school will help me in successfully planning my future.	73%	89%
8. In school, I am learning my strong points.	85%	88%
9. In school, I am learning when I need help.	88%	91%

Table 1 (continued)

Question	% Desired Responses Control (N=357)	% Desired Responses Treatment (N=208)
10. I think learning to read well and do arithmetic without mistakes is important in all jobs.	90%	93%

Pre and post tests administered to students at Elmwood Elementary are displayed in Table 2. Post test responses to Question nine show a ten percent gain, indicating that after being exposed to LCC materials throughout a school year, students are beginning to understand when to seek help from teachers, parents, and friends. Other responses did not change in any dramatic degree from pre to post testing.

The second measurement of this objective was teacher responses to "Classroom Teacher Observation" form, Questions 1, 2, 3, 4, 8, and 9. Definition of control and treatment group teachers is as described for students. The results of administration of the "Classroom Teacher Observation" form to control and treatment group teachers is displayed in Table 3. Of the significant questions relating to measurement of this objective, more positive responses were obtained from treatment group teachers on Questions 1, 4, and 8. Identical responses were obtained to Questions 3 and 9. Only on Question 2 do control group teachers exhibit a more positive response than treatment gr > teachers. This question stated, "Most of my students often try to learn more about school work without my urging."

The third measurement of the objective involved parental responses to the "Assessing My Child in School" survey, Questions 1, 2, 3, 4, 8, and 9. The same control groups as described for students and teachers were maintained in ascertaining parent perceptions of children. Question 1 shows that control group parents scored higher than did treatment group parents. This was also true on Question 2. On Question 3, treatment group parents scored slightly higher. On Question 4, control group parents again scored higher. On Questions 8 and 9, treatment group parents scored higher.

Table 2

Comparison of Pre - Post Test Responses
From Treatment Students at Elmwood Elementary

Question	Pre Test - % Desired Responses	Post Test - % Desired Responses
1. Are you excited about what you learn in school?	89%	87%
2. Do you ever try to learn more about school work on your own without the teacher telling you?	66%	72%
3. Does working on different projects help you understand about things better?	83%	89%
4. Does school help you learn about yourself?	80%	84%
5. Does school help you learn to work with others?	94%	93%
6. I think school will help me become what I want to be when I grow up.	83%	87%
7. I think the subjects I study in school will help me in successfully planning my future.	80%	89%
8. In school, I am learning my strong points.	91%	91%
9. In school, I am learning when I need help.	79%	89%
10. I think learning to read well and do arithmetic without mistakes is important in all jobs.	91%	94%

Table 3

Comparison of Responses to "Classroom Teacher Observations" by Treatment and Control Teachers

Question	% Desired Responses Control	% Desired Responses Treatment
1. My students are excited about what they learn in school.	83%	100%
2. Most of my students often try to learn more about school work without my urging.	61%	50%
3. Working with different projects helps students understand things better.	100%	100%
4. I believe that school helps my students understand about themselves.	95%	100%
5. Does school help your students learn to work with others?	95%	100%
6. The majority of my students believe that school will help them become what they want to be when they grow up.	82%	88%
7. The majority of my students believe that the subjects they study in school will help them successfully plan their futures.	61%	75%
8. My students are learning about their strong points.	79%	100%
9. Students are learning when to ask for help.	100%	100%
10. The majority of my students think good reading and math skills are important to all jobs.	82%	100%

Table 4

Comparison of Responses to "Assessing My Child in School" by Treatment and Control Parents

Question	% Desired Responses Control	% Desired Responses Treatment
1. Do you think that your child is excited by what he/she learns in school?	93%	91%
2. Does your child ever try to learn more about school work in addition to regular assignments from the teacher?	87%	78%
3. Does working on different projects help your child understand things better in school?	95%	99%
4. Do you believe that school helps your child learn more about himself/herself?	97%	88%
5. Do you believe that school helps your child learn to work with others?	100%	98%
6. Does your child believe that school will help him/her become what he/she wants to be when he/she grows up?	88%	91%
7. My child seems to feel that school subjects will help him/her successfully plan for his/her future.	65%	83%
8. My child appears to feel that school is helping him/her learn about his/her strong points.	83%	84%
9. My child is learning when to seek help in school.	83%	90%

Table 4 (continued)

Question	% Desired Responses Control	% Desired Responses Treatment
10. My child understands that good reading and mathematics skills are important in all jobs.	83%	97%

The final measurement of this objective was based on field interviews which personnel of ESI conducted in Syracuse, New York, in May, 1975. Interestingly enough, these interviews cleared away many of the questions raised by data. Teachers and students interviewed felt that the introduction of the LCC units into the regular elementary curriculum of the Syracuse City School District had caused an increase in self-awareness among elementary students. This information was gleaned from in-depth interviews with both teachers and students. Material gathered in these interviews is displayed in Chapter IV of this report.

The second major goal of the LCC project was to create an awareness of and knowledge about work among elementary students. The product objective defined for this goal read: "To determine the extent to which elementary students demonstrate an increase in awareness of and knowledge about school-work relationships."

The first measurement of this goal dealt with student responses to the "Understanding Myself" survey, Questions 5, 6, 7, and 10. The treatment and control groups, as previously described in this chapter, were maintained. Reviewing data displayed in Table 1, it is noted that treatment group students scored slightly higher on all significant questions than did control group students.

The second measurement of the objective concerned teacher responses to the "Classroom Teacher Observation" form, Questions 5, 6, 7, and 10. Here again, treatment group teachers responded more positively than control group teachers in observations of students' ability to relate the school-work relationship.

The third measurement concerned parental responses to the "Assessing my Child in School" survey, Questions 5, 6, 7, and 10. With the exception of Question 5, treatment group parents responded more positively than did control group parents on the significant questions.

The final measurement of this objective again centered on ESI interviews conducted in May, 1975. Results of these interviews are displayed in Chapter IV of this report.

Overall, both data and interviews reflect a more definite dividing line between treatment and control groups. In other words, it was easier to determine an increase in awareness of and knowledge about school-work relationships than it was to measure the abstract theory of increasing self-awareness among students. However, it is reasonable to assume, based upon analysis of the data overlaid with soft data obtained from extensive interview, that both product objectives have been accomplished by the LCC project.

CHAPTER III

Process Objectives

Although the processes for the implementation of the Life-Centered Curriculum project have been explored in great depth in the preceding two evaluation reports submitted by ESI, it was felt that some measurement of process objectives should be undertaken for the final year of the program.

As teacher training was one of the major goals of the program, the following objective was established to reflect upon teacher training: To measure the extent to which all elementary teachers in Syracuse City School District received in-service related to LCC units.

Measurement was to be drawn through a review of staff records of the number of in-service workshops held and through field interviews with elementary teachers.

Utilizing the two measurements described, it was determined that all elementary teachers in the Syracuse City School District were in-serviced as of November, 1974. Prior to this time, all teachers had been given orientation courses to acquaint them with the fact that they would be handling LCC units for the 1974-75 school year.

The second goal relating to the process of the Life-Centered Curriculum project concerned teacher participation. The process objective established to measure this goal stated: "To determine the extent to which all elementary teachers utilize LCC units during the 1974-75 school year."

At the time the evaluation design was structured, plans were made to take a random sampling of teachers in May, 1975. However, it was

determined that this sampling was not necessary and that staff observations and ESI interviews could be relied upon to determine the degree of utilization. These factors revealed that the majority of teachers were using LCC units on an average of once a week in their regular classroom activities. Many teachers were using as many as 12 units during a six-weeks reporting period. These factors indicate that the majority of elementary teachers in the Syracuse City School District are participating in the program.

The third process goal was to develop student interest in school work through the introduction of the LCC units. The process objective established was to determine the extent to which student interest in school has increased. The measurement was to be a study of attendance records for the 1974-75 school year versus attendance records for the 1973-74 school year. Results of this study are displayed in Table 5.

Table 5

Comparison of Attendance Figures (1973-74 vs. 1974-75)

School	1973-74	1974-75
Elmwood	92.3	94.0
Porter	90.0	93.6
Nichols	90.5	95.5
Webster	92.6	94.7
Meachem	92.0	94.7
Hughes	93.8	93.4
Overall--6th reporting session	90.8	93.7

It will be noted that the sixth reporting period of the involved school years was selected and that attendance figures were drawn from the six elementary schools used as treatment schools in other data collections. It will be noted that with the exception of one school, Hughes Elementary, all schools show an increase in attendance for the 1974-75 school year during a reporting period when the LCC units were being utilized.

The final goal established for the program was to construct the Life-Centered Curriculum units so that reliance on the LCC staff would not be mandatory for the continued use of the new units. The process objective established was: To demonstrate the extent to which LCC units were utilized in classrooms without assistance by specialists.

Through a misunderstanding, staff records of requests for assistance were not maintained. This development in itself indicates that teacher reliance upon the professional staff of the special project has dramatically decreased. At the time when all elementary teachers in Syracuse City School District received in-service training on use of the new units, they were instructed to seek additional help from several sources within the regular stream of the school district. Obviously, they are seeking help through the regular channels, which indicates that any problems which occur in the future, after the LCC staff has been disbanded, can be handled through regular administrative channels of the school district. In examining these four process objectives, it is obvious that the procedures and processes utilized in the final implementation of the LCC units into all elementary classrooms of the entire school district have been successful.

CHAPTER IV

Interviews

Teachers at different grade levels in various elementary schools were chosen to participate in in-depth interviews with ESI evaluators. They were asked a series of questions designed to elicit information in the following areas:

1. Can you determine whether LCC has had an impact on your students in attitudes toward school?
2. Do you think your students are developing a social sense of themselves and others, and what part has LCC played in such development?
3. Do you think your students are able to relate what they are learning in school to the needs they will experience later in life?
4. What part does LCC play in the attitudes of students toward themselves, others, and the educational experience?

Teachers were encouraged to provide examples that might help to better illustrate the impact of LCC on students.

The most surprising finding to third party evaluators, who are experienced in researching teacher reactions, was a growing dissatisfaction with certain aspects of standard or traditional methods of teaching at the elementary level.

The question is whether LCC has contributed to more imaginative approaches, or whether such teacher attitudes represent independent actions.

A subjective interpretation is that many teachers had been developing differing attitudes toward standard content-oriented teaching. In some instances, these teachers had fashioned their own new approaches. Often these teachers took such steps hesitantly, for fear they were the only ones who felt the need for change.

In this context, LCC seems to have provided a catalyst for imaginative application of information. In the Syracuse schools, the introduction of the LCC units at about the same time as new and different reading and math programs seems to have provided a stimulus.

Teachers are excited, and they demonstrate their excitement. They are generally enthusiastic about the LCC units, about the progress made so far, and about promise for the future.

A first grade teacher said children that age are different now. "Now they come so unprepared for living," she said. She said many of her students have emotional, social, and maturation problems. Therefore, she thinks that much of the so-called academic preparation is "useless until the children are taught responsibility, to have joy in their work, and something about living."

She said school is different today, partly because the children are different. She said teachers of younger children "have many holes to fill in" because of problems in the homes.

A fifth grade teacher at the same school said: "Values now aren't developed at home, and we take on the task of doing this." He said students are not equipped to deal with problems in life.

He cited an example of how LCC is helping, an example he said

has become fairly common. Because of increased awareness, when one student has a problem, another may raise his hand and ask, "Can I help him?"

A third grade teacher at a parochial school said LCC helps to show a child "how his actions are affecting other people, and how other people are affecting him."

She related that when she was explaining LCC to a parent at a Parents Night at the school, the reaction was: "It's about time."

The fifth grade teacher said the most obvious proof that LCC is working is that most of his students realize that the units "deal with their lives." As an example, he said his class related grocery shopping and learning how to read labels to economics and nutritions.

The project orientation of the LCC units seems to be one of the keys to the success of the program and an example of how non-standard approaches are gaining in appeal to students, teachers, and parents.

A third-fourth grade teacher said when he explained the emphasis on life centered curricula to a mother at a conference, she told him she liked the approach. "It isn't just 'Open the book,'" the mother told the teacher, "it's doing other things."

In this particular class, the "other things" center on using LCC units to teach basic subject matter in new ways. Several field trips were taken in connection with LCC. One such trip was to the city hall, where the third and fourth graders got to sit in council members' chairs.

"Instead of just reading about it," the teacher said, "we lived it." The teacher said that before LCC, city government would have

been studied out of a book, with no relationship to Syracuse. However, the "Hometown Syracuse" unit is written specifically about Syracuse. "It's not the regular 'Here's the book, here's the page,'" the teacher said.

The same class worked on a year-long project involving the "Syracuse Long Ago" unit. The students created work projects to make money to take a trip to Rome, N. Y., to visit the Erie Canal Village. They sold cookbooks, iron-on patches,and art work. By early May, they had $240.15 for the trip, and the class went en mass to a bank to open a savings account.

In this way, the class was able to use the LCC "Rewards for Work" unit to relate the classroom activities to a real life situation. They learned about interest on their savings account, and experienced the self-gratification of their endeavor and the rewards of cooperation and planning on a long-range project.

"LCC is flexible," their teacher said. "There is an awful lot a teacher can do. It gets away from a rigid program. There is a lot of excitement, and it shows with the student."

Another teacher said of the units: "There are so many possibilities I don't see how you cannot teach." This particular teacher has a fourth, fifth and sixth grade,combination. In addition, she teaches social studies (i.e., LCC units) to a first, second, and third grade combination.

During the year, she has used 12 units. Because of such frequent use, she had experienced some difficulty in acquiring materials. She said she hopes that audio-visual and work-up materials will be

handled better in the future and that the LCC curriculum and textbooks will be better coordinated.

She said that, in using LCC materials to teach reading, she found the vocabulary to be "great." And she said that teaching social studies (which she said is the least favorite subject in elementary school) is enhanced by the material and project orientation of the LCC approach.

In order to get a broader view of student-teacher reaction to LCC, evaluators visited a sixth grade classroom. The teacher had been told the evaluators were coming, but the students had not been prepared in any way.

The teacher opened the discussion by reminding students of their visit to the Career Center seven months earlier. He asked what the students had liked most about the center, and they listed the cash register, calculator, and typewriter, and making pizza and cake.

When the teacher asked what kinds of possibilities of life work the students had covered, they named gas station attendant, airport worker, veterinarian (a girl said that), restaurant worker, fireman, policeman, beauty and cosmetics worker, radio and television worker, office worker, and hospital worker.

The question about whether the students enjoyed LCC was not necessary. They obviously did. The teacher informed the visitors that everyone in the class tried to be open and honest in the way they participate in discussions. At one point, he told the students that, when he was growing up, a person either went to college, or was a ... he searched for a word ... "yes, bum, that's what."

"Let's face it," he told the class. "Some of you kids are not going to college. But you can use your hands and make a darn good living." To the visitors he said: "The 'Yes I can' idea is important here (from LCC). Don't say 'I can't,' say 'I'll try.'"

He asked the class to identify some of the universals in the work situation. The students said: "The idea of discipline," "Using your hands creatively," and "Responsibility--can't be late."

The teacher posed a hypothetical problem. "Suppose your supervisor is miserable or is having a bad day. We can't always be up every day. What does that mean for you?" Three students gave answers. They were all similar to the remark of a boy in the front row: "You've still got to cooperate."

The teacher went back to responsibility, to being late on the job. He asked the students what would happen if their parents were habitually late, or if they, when they go to work, are habitually late. Again there were several answers. One boy said simply: "They fire you."

Ending that part of the discussion, the teacher said: "It's very important to these kids not to see the world through rose-colored glasses."

The teacher said he was trying more and more to emphasize co-operation and interdependence in the classroom, and that the LCC units were ideally suited to that purpose. "When I first started teaching," he said, "I worried about getting through everything. Now I don't." He was referring to standard subject matter, and he implied that often now he teaches more of the intangibles. "Students are often interested in the same things the teacher is," he said. They seemed to be.

CHAPTER V

Conclusions

On a year to year basis, and an overall basis, it is obvious to ESI evaluators that the Life-Centered Curriculum project of the Syracuse City School District has achieved all major goals. The 28 curriculum units were developed during the first year of the project, the second year was devoted to limited pilot testing, and the third year of the project saw revised units distributed and implemented on a district-wide basis.

It is also obvious that through the vehicle of the Life-Centered Curriculum units, career education has become an integral part of the curricular offering of Syracuse City School District. This was the overall goal as expressed in the initial funding proposal.

Furthermore, provisions have been made to insure that the work initiated under the LCC grant will be maintained and monitored within the administrative framework of the school district. Elementary supervisors and personnel from the special projects branch will work with classroom teachers to insure that LCC units are utilized.

Another telling factor in the overall success of this program is that at the present time, six other school districts in the State of New York are using the units developed by LCC.

It is unfortunate that so much difficulty has been experienced in attempting to attain valid data to reflect the changes in attitudes and perceptions of the elementary students for whom the entire program was designed. One reason for this difficulty is that all attempts to

measure student attitudes spanned one school year. It would be an interesting research project to undertake a five year study of student attitudes and perceptions using control and treatment groups. It is unfortunate that most career education projects are currently funded for a three year time period. Usually this schedule results in one year spent on curriculum development and the second year spent on pilot testing, with only the final year devoted to wide spread dissemination. Therefore, evaluators and researchers have only one year to try and detect subtle changes in attitude.

Also, the lack of sensible, validated test documents becomes more apparent as career education spreads to more and more school districts. Although various tests exist to determine student knowledge or lack of knowledge concerning specific jobs and job skills, no acceptable test is in existence to measure student attitudes toward themselves and their surroundings. There is a great need for the development and validation of such a document.

The success of the Life-Centered Curriculum project within the Syracuse City School District can be attributed to a number of factors. Of these, the most important is probably the total commitment of the administration of the school district. This commitment begins with the Board of Education, extends through the top level administration, and is evident among school personnel. This commitment has enabled this project to overcome many obstacles. It would be difficult, if not impossible, for another district to replicate the success of the Life-Centered Curriculum project without this total commitment.

The second factor would have to be the viability and flexibility exhibited by this project. This does not mean that deviations were made from the original plan. It does mean, however, that staff members and administrators were responsive to problems within the units themselves as identified by teachers. The staff was also responsive to social changes occurring both in Syracuse and across the nation, and made provisions to revise and refine curriculum units as needs indicated. There was never an attempt to "pour in concrete" the work of the writing team members. This flexibility and viability has kept teachers interested and enthusiastic because they have felt, and rightly so, that their opinions and experiences were vitally important to the project.

The third success factor has to be attributed to the extremely high professional caliber of the LCC staff. Although this staff was small, the quantity and quality of work accomplished was unusually high. This factor would be difficult for another district to replicate, because it is almost inconceivable that a small number of people could accomplish as much in three years as this staff has. Also, there have been staff realignments, unexpected outside pressures from the community, and some budget problems to plague the staff. However, they have overcome all of these obstacles.

ESI personnel would like to extend our personal appreciation to the staff members with whom we have worked during the life of this project. They are Virginia Lewis, Linda Kaufman, Carol Ardrockitis, Michael Johns, Emelia Albrigo, Margaret Naseman, and Don Stanistreet. Without the cooperation of the staff, the work of ESI would have been extremely difficult, if not impossible.

It is obvious that the goals and objectives of the Life-Centered Curriculum project have been accomplished and that career education is now an integral part of the total curriculum of the Syracuse City School District. The work of the project staff has been absorbed into the mainstream of the administration of the district and will be ongoing in the future.

FINAL EVALUATION REPORT

OF THE

YONKERS SCHOOL DISTRICT CAREER EDUCATION PROJECT

July 1, 1974 - June 30, 1975

Prepared By

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INTRODUCTION

A proposal for a career education project to be based in the Yonkers School District was developed in the school year 1972-73 and funded July 1, 1973 under the Vocational Education Act, Part C. The project was designed to establish a continuum of career education programs and services extending from Kindergarten to Grade 14 including adult and continuing education. The initial emphasis was on grades K-6.

One requirement of this grant for the development of the project was the selection of an outside evaluator to monitor the progress of the Yonkers School District Career Education Project throughout its operation. Policy Studies in Education (PSE) submitted a proposal for this work and was awarded the evaluation contract.

PSE has followed project activities closely during the two years of operation. We have made frequent site visits and have maintained close telephone contact. PSE staff have interviewed project staff at least monthly. We have also spoken with State Monitors and district administrators; have interviewed principals and teachers; have observed workshops, meetings, and other special events; and have examined the plans and materials created by project staff. We have also developed and administered questionnaires and student tests.

During the two years of project operation, PSE staff have had frequent formal and informal discussions regarding our evaluation of project efforts and any recommendations for changes. We have also submitted Quarterly and Interim Reports of our observations and findings regarding the project.

This document reports PSE's evaluation of the Yonkers School District Career Education Project over two years. The first section contains PSE's

Assessment of Project Operation during this time. Another section reports on Other Measures of the Project. A final section describes Lasting Effects Achieved by the Project.

ASSESSMENT OF PROJECT OPERATION

During the past two years of project operation, PSE has used a variety of methods to gain information about the project. The PSE staff have visited Yonkers at least once a month to discuss with the project staff both their activities and their plans. We have met with the project director to discuss the administration of the project. We have also spoken with State Monitors and district administrators regarding planning and conduct of the project. PSE staff have also observed workshops conducted by project staff and have spoken with principals and teachers regarding their career education activities. Finally, we have examined the plans and materials created by project staff. The Assessment of Project Operation contained in this section of the report is based on information gathered through these activities. Aspects of project operation covered in the following pages include Goals, Funding, Administration, Staffing, and Activities.

Goals

The overall goal of the Yonkers School District Career Education Project was to: (1) establish a continuum of career education programs and services extending from Kindergarten to Grade 14 including adult and continuing education; (2) establish career education committees consisting of administrators, counselors, teachers, parents, students, and representatives of business and industry; (3) plan and conduct in-service education in career education for teachers; (4) increase students' awareness and knowledge of diversified career education opportunities and provide them with exposure to as wide a variety of choices as possible; (5) assist students to develop an awareness and evaluation of their own abilities, interests, and aptitudes by providing a wide variety of experiences. These goals were important and appropriate ones, but were recognized as being very broad. The staff proposed, therefore, that they should

attempt initially to establish programs and services for grades K-6. They planned a series of stages, each with its own more specific objectives. They also determined, in consultation with the State Monitors, to limit initial efforts to four elementary schools chosen as pilot sites because they represented a cross section of the district's 34 elementary schools.

During the summer of 1973 the project director completed final plans for the project and selected his staff. Beginning in September, he and his staff investigated various career education models. After discussing their ideas and sharing information, they developed a model representative of the group's thinking. They also developed program objectives and a time-table for meeting each of their objectives.

Stage I

The objective of Stage I, beginning in October, was to interest teachers in the career education program objectives and to help them on an individual basis to try out career education activities as a part of their regular classroom routine. This has continued to be an objective of the project throughout the two years of its operation. Given the overall goals of the project, it is PSE's judgment that this was an excellent first step.

Stage II

One objective of Stage II, beginning in February 1974, was to introduce career education to interested school staff on a district-wide basis by designing and carrying out an eight-session in-service course. The course aimed to introduce school staff to the purpose and goals of career education and to ways of integrating career education instructional materials into the existing curriculum. This was a good choice as a second stage since it enabled the project staff to build upon existing enthusiasm among school staff.

An additional objective of Stage II was to establish Advisory Committees in each of the four pilot schools and for the district as a whole. While the early formation of such Committees can be useful in guiding a project as it evolves, the formation of such Committees can only be effective if their role is clearly defined.

Stage III

The objective of Stage III, beginning in April, was initially to design and carry out spring and summer curriculum development workshops to create career education curriculum which all elementary teachers in the district could use as the program expanded to the other elementary schools in the fall of 1974. This objective was modified in two ways. As described later under Funding, the situation in the district prevented the project from conducting after-school or summer workshops, and Stage III was therefore limited to a spring workshop carried out during school time. Also, the objective shifted from having all interested district teachers create curriculum for use by other teachers, to having teachers from the four pilot schools learn to infuse career education and reading objectives into an existing curriculum. Although some of these shifts were beyond the control of the project, it is the judgment of PSE that it is unfortunate that this shift in objectives occurred. It is a shame that after-school and summer workshops were not available for those who were interested. Also, given the short time allotted for the workshops, asking teachers to deal with two sets of objectives was confusing for school staff.

Another objective of Stage III was to plan the district-wide introduction of career education for September 1974.

Stage IV

The initial objective for Stage IV, beginning in September 1974, was to introduce career education to all thirty-four elementary schools in the Yonkers School District. Instead, at the suggestion of the State Monitors, the project continued to focus on the four pilot sites. The objective for this time period was, therefore, to maximize career education activities in the classrooms of these schools and to enable teachers to create career education infused materials based upon program objectives. While these objectives are worthy ones, it is our opinion that after one year of operation and the extensive experience gained by the project staff, it would have been wise to begin disseminating career education to at least some of the other elementary schools. This seems particularly appropriate given the large budget assigned to the project.

Stage V

The objective for Stage V, beginning in January 1975, remained uncertain for some time as funding was uncertain. When it became possible to continue the project, the remaining staff determined that the most effective way to reach the maximum number of additional elementary schools, and to have a lasting effect upon them, was to work through the principals of these schools, preparing them to provide training in career education for their own staffs. Given the smallness of the remaining staff, the shortness of the remaining time, and the uncertainty of future funding, it is PSE's assessment that this was an excellent objective for the last semester of project operations.

Summary

The overall goals for the project were appropriate and thoroughly developed. The short range objectives were also, in most cases, well-developed, and the staff's success in meeting them will be described in following sections. The objectives, on the whole, tended to maximize both the previous efforts

of the staff and the resources of the project. It was a strength of the project that the staff remained extremely flexible in setting the objectives and adapting them when outside factors or their own experience indicated a better way of pursuing their ultimate goal.

Funding

An understanding of the factors concerning project funding is necessary if one is to understand the activities planned and carried out by the project staff to achieve the goals described above. Factors concerning both the receipt of funds and the expenditure of funds have effected project descriptions, and both are described below.

Receipt of Funds

Initially the project received $252,000 in VEA Part C funding for the period from July 1, 1973 to June 30, 1974. Early in 1974 the project was given additional money to continue its work through December of 1974. Funding to continue the project after January 1, 1975 remained uncertain until the very last minute. In addition, the project had requested permission to roll over some of the unused funding earmarked for teacher compensation for in-service preparation. It was not until late December that the project staff learned that they would receive an additional $61,000 earmarked entirely for salary and fringe benefits and that they would receive permission to roll over remaining funds for use by the end of April.

Late funding and late decisions regarding funding have been a chronic problem in education. This project illustrates some of the affects of late funding. Because the project did not learn until late December that it would receive only part of the amount needed to cover the salary and fringe benefits of existing staff, it took the first few months of 1975 to arrange the transfer of those staff members who were no longer covered.

These extra months of salary coverage for several staff members ate heavily into funds which could have supported an additional staff member through the end of the year if the project director had been given sufficient time to arrange these transfers prior to January 1.

The late decisions on the roll over of remaining funds had another effect. The staff did not begin planning workshops to use these funds until January. Also, as the funds had to be used by the end of April rather than the end of the school year, the time available for their use was further curtailed. Both of these factors meant that the staff did not have the entire semester in which to use these funds.

Expenditure of Funds

A substantial proportion of the funds allotted to the project were earmarked for use as compensation for teachers who participated in in-service workshops. The staff initially planned a series of after-school and summer stipended workshops for interested teachers throughout the district. This was a good plan in several ways. Involving teachers after-school and during the summer is less disruptive than releasing them from classroom duties to attend in-service sessions during school hours. In addition, after-school and summer workshops can be conveniently made available to all who are interested, rather than those at a particular grade level or in a particular school. Finally, it has been PSE's experience in districts throughout the country that the use of stipends for teachers is one of the best incentives for recruiting teachers for in-service work.

Unfortunately, contract disputes in the district regarding the rate at which stipends would be paid resulted in cancellation of all

stipended workshops in the district. Because of this, the project staff were obliged to use this funding to pay substitute teachers to release regular teachers from classroom duties in order to attend workshops during school hours. Also, they were obliged to recruit teachers for after-school workshops offering district salary credit as compensation, even though the district has offered frequent stipended workshops in the past. This limitation on expenditure of funds had a significant effect on project planning throughout the duration of the project.

Summary

Each of the factors described above effected project planning. Each of them was also beyond control of the project staff. On the whole it is PSE's judgment that the project used its funds wisely and was effective in finding alternatives when funding-related decisions prohibited the carrying out of the initial plans. It is necessary to take account of these factors in reading the remainder of this report.

Administration

Throughout the project, the project director has shown good leadership qualities and flexibility. His own teaching background and his previous role as head of the teacher union in the district have given him the background for handling the many organizational and staff problems which arise in introducing any innovative program. His relationship to his district administrators and school personnel have been strong and effective. Also, his understanding of the limitations imposed by unsettled contract disputes enabled him to make wise decisions as to the course of events in his own program.

Administration of the program has, on the whole, been good. Many of the difficulties encountered in the course of the project and the resolution of the difficulties have been described in other parts of this report. The project director's decisions regarding budgeting, staffing, and programming appear in the appropriate sections. The project director has involved his staff in decision-making in appropriate ways throughout the project. He has also developed plans in such a way as to build upon suggestion from the State Monitors. The project director has also remained ready to discuss any aspect of project operation with PSE throughout the project, and, in our opinion, has used any input from us in ways that have strengthened his project.

Staffing

During its first year of operation, the project had seven staff members: a director, two curriculum synthesizers, two career development specialists, a guidance specialist, and a media specialist. These seven staff members worked together from early fall 1973 until spring of 1974. At that time, one of the curriculum development specialists left the project and was replaced by a new staff member. This staff member was transferred again early in the fall of 1974 at her own request, and was not replaced. Thus, the project staff included six members until January 1975. At this time a cut-back in funds required the project to decrease its staff to three, the director, a curriculum synthesizer, and a career development specialist. These three remained until June of 1975.

The assignment of these staff members and training for them is

described in this section. Project activities are described in the following section.

Assignments

Throughout the project, the project director has made good use of his staff by assigning them to roles which best utilized their individual competencies. The project staff includes individuals with both elementary and secondary school backgrounds. In addition, each staff member has a subject area specialty as well as additional competencies. Through careful attention to assignments, staff members have used their strength and have shared their talents with each other. In the initial assignment, staff members were each assigned certain grades in which to assist teachers in carrying out career education. Two staff members worked with teachers in grades K-3 and two others with teachers of grades 4-6 across the four pilot schools. The guidance specialist worked primarily in one sch . and the media specialist worked with the other five staff embers a hey needed him. Beginning in January 1974, a new pattern was esta lished. Each of the four "general" staff members was assigned to one of the four elementary schools where he or she worked with all of the teachers in that school. The media specialist and the guidance specialist shared their activities across the four schools as needed. This pattern continued to some extent through January 1975. Then, as the size of the staff decreased, the remaining staff members handled followup activities in all four schools and shifted the main focus of their effort to activities to reach beyond the four pilot schools. The initial division of labor was successful as staff had exposure to all four schools and to each other's particular strengths and talents.

Although that pattern was successful, the reassignment at the end of that semester resulted in an even more effective working arrangement. Each staff member could schedule his time at each location more effectivel and his availability could be more easily determined by the school staff. In addition, project staff was more accountable to a given principal and a set of teachers. There was a greater sense of identity with the faculty of one school and each staff member evolved procedures suitable for his assigned school. The only drawback was that each staff member needed to understand the curriculum and materials of six or seven grade levels rather than three or four. By working closely together, the staff exchanged sufficient ideas and materials that they overcame this potential difficulty.

As noted above, it is unfortunate that the project staff, having gained experience and enthusiasm, could not extend their activities beyond the four pilot schools somewhat earlier in the project's history, but, given that limitation, their assignment proved effective. Once given permission to move beyond the four pilot schools, the reassignment of the few remaining staff members was one of the chief factors responsible for the effective maximization of the impact of career education beyond the four schools.

Throughout the project, of course, project staff has carried out many additional activities other than their assignments to the four pilot schools. The project director has made good use of his staff in planning and carrying out several in-service training courses or workshops and in developing materials. In the initial in-service course, each staff member had major responsibility for at least one

session and prepared most of the oral and written materials used in that session. The staff have revised and built upon this initial plan and its accompanying materials and have developed a number of complementary in-service workshops.

The entire staff was enthusiastic and eager throughout the project. This resulted in great part from their assignment to appropriate tasks which both drew upon their special capabilities and maximized the effect of the project.

Training

PSE noted in its initial report that, though enthusiastic and well qualified, the project staff lacked specific training in career education with the exception of one staff member. We advised that the project staff themselves receive additional training in career education. Throughout the remainder of the project, both formal and informal training for the staff did occur. Early in the project the staff researched much of the literature available on career education and career development in order to develop a model for the project. They also visited a number of other school districts experienced in career education. Specialists were brought in to consult with the staff. The staff also attended statewide and regional career education meetings to obtain and share expertise. In addition, the staff's preparation of the in-service training course and its accompanying materials was a valuable experience. Each of these activities acted to sustain the momentum and drive of the staff during the first year of the project. During the second year, the project staff was involved in further training to build upon their past work in career

education and to expand their knowledge of the topic. Individual consultants offered training sessions to the staff on the topics of: The Role of the Advisory Council, Career Education Bases and Trends, Bloom's Taxonomy, Creating Behavioral Objectives, and Decision-Making. The knowledge gained on each of these topics was put to use in the course of this year's project activities, and thus, the training topics seem to have been well selected.

Summary

Staffing has had a decided effect on the success of the Yonkers School District Career Education Project. A well qualified staff was selected initially. They were then assigned in such a way as to maximize their strengths and the support they offered each other. Their capabilities were further expanded through training. And finally, the staff worked well together. The many activities they carried out successfully are described in the following section.

Activities

Throughout the course of the Yonkers School District Career Education Project, the project director and his staff have carried out a variety of activities designed to accomplish the goals of the project. Major activities have included developing a program, working in the pilot schools, conducting in-service discussions, developing materials, and involving the community. Each of these is described further below.

Developing a Program

From the very outset of the project, the project director involved his entire staff in developing the program. This was an excellant plan

as it involved the considerable talents and the variety of special knowledge the staff could bring to the project. It also increased the staff's enthusiasm and served to increase their own knowledge of career education.

The project staff studied theories of career development and career education, and sought information on career education practices in many other sites across the country. They also visited a number of nearby functioning career education programs, held discussions with the staff of these programs, and obtained and reviewed both commercially-produced career education materials and those produced by other career education projects. Based upon the information they gathered in this way, the project staff worked together to develop a model for the program.

After developing a model which staff felt would meet the overall goals of the project, they outlined the initial stages in accomplishing these goals, and developed objectives and a timetable for each of these initial stages. The staff then planned the activities for each of the initial stages and outlined the role each staff member would play in organizing and conducting these activities.

The work done during the early period of this project continued to guide the staff throughout the project, although of course the project staff continued to refine its original objectives and to adapt plans for activities as needed. For example, the staff developed an initial definition of career education to guide its work, but was careful not to dictate how career education should be carried out by the school staff, preferring rather that school staff choose the delivery approaches most suited to their own situations. This was a valid approach, however after some time the project staff realized that teachers required clear, well-defined

ideas of expected results in order to be able to identify and select techniques which would lead to the expected learning. The project's initial goals and objectives were too abstract and global to provide this guidance, therefore the staff developed desired student learning outcomes for grades K-5.

These objectives were comprehensive and fit well together, offering a clearer idea of project expectations both of teachers and of students.

It is the assessment of PSE that the project has done an effective job of developing a program and planning the steps necessary to carry it out. The success of so many of the activities described below is evidence of the strength of the original planning stages of these efforts.

Working in the Pilot Schools

Once the pilot schools were selected, a great part of the effort of this project was geared toward developing career education in these schools by offering any and every type of support to the school staff. The project staff spent much time in these schools meeting with teachers, obtaining resources to accompany teacher's on-going units, suggesting and arranging field trips and speakers, proposing ways that career education could be infused into existing school activities, assisting principals in school-wide career education activities, and offering many other types of support to teachers. These efforts continued through the first 18 months of project operation and included some more limited follow-up after the project's efforts were expanded to include the other elementary schools. Various aspects of these activities are described below.

Initial Effort. After project plans were completed for initial

stages of the project, the project director visited each of the principals of the four pilot schools to inform them of the objectives of the program and to set a date when the career education staff could explain the program to all teachers in each building. By early November, the project staff had made presentations in each school, reaching 100% of the teachers, and had invited teachers to participate in planning career education activities for their students. The four building principals then informed the project staff which teachers were interested in career education and arranged meetings between project staff and teachers. Within a week after this school orientation meeting, the project staff had begun working in the schools assessing existing career education activities and materials, meeting with interested teachers, and providing resource materials requested by the teachers.

"General Staff." Once these initial efforts were completed, the staff devoted much time to pilot school activities. As we described above under Staffing, the two curriulum development specialists and the two career development specialists, whom we have referred to here as "general staff", were assigned first to work at particular grade levels and then to work in particular schools. The activities of these staff members are described in this section.

From November, 1973, until June, 1974, each of these staff members spent about half-time in the school, working in classrooms with teachers, meeting with teachers during breaks and free time to plan activities, meeting with principals, etc. In addition to direct work in the schools, the staff members spent time at headquarters making arrangements for trips, speakers, and other resources for teacher use. They also accompanied

classes on trips and arranged for specially needed materials. The project staff reported that in most cases, teachers conceived of a unit or group of lessons and then asked for help in infusing career education in those units or lessons and in arranging for trips or materials. Staff members also served as coordinators of the efforts among different teachers in a particular school. In some cases the project staff actually taught lessons in classrooms, but more often then assisted a teacher.

Beginning in the fall of 1974, the project staff continued these activities but spent somewhat less of their time in the schools. During this period they attempted to provide less one-to-one personal assistance to teachers, but instead attempted to maximize their impact by planning more group activities ranging from workshops for teachers and administrators to meeting with PTA groups. These activities are described at greater length below.

Finally, beginning in January of 1975, project staff activities in the pilot schools were limited only to follow-up on existing activities as the staff, now limited to three people, turned their attention to other activities more likely to reach the non-pilot elementary schools. These activities, too, are described at length below.

A sample of activities initiated by the project staff or initiated by teachers with the support of project staff are as follows:

1. A kindergarten class worked on community jobs while a fourth grade class explored sound concepts. Both classes were visited by telephone company installation workers who were able to offer further information and experience in both of these areas.

2. In a first grade class, the Duso Kit materials were used. These materials, which include puppets, stories, and audio-tapes, were introduced to the students by the teacher,

with the help of a project staff member. Then the project staff member, the teacher who used the material, and the guidance specialist discussed the guidance implications of these materials to formulate recommendations for other teachers.

3. A second grade class established an employment office for classroom jobs. Students filled out applications, evaluated qualifications for each job, and conducted other activities connected with a typical employment office.

4. In an elementary school physical education unit on "Respect for Ourselves", two high school boys who are graduates of that elementary school were invited to speak to the students on their role as high school athletes and the decisions they had to make in regard to this role, as well as on sports careers in general.

5. A fifth grade class, in connection with a unit on ecology, constructed gardening aprons, learning how to operate sewing machines in the process.

6. Another fifth grade class, in a unit on business and economics, created a class newspaper involving skills ranging from reporting to typing.

7. In one of the four pilot schools, a productive relationship has been established with the police department. The department has sent speakers, provided printed materials, and conducted tours of various police facilities for student visitors.

8. Another school was involved in a large fashion show. Each class was exposed to all the occupations in the fashion industry ranging from clothing construction to marketing of garments.

9. A sixth grade class studied a science unit entitled "Tools of Home, School, and Industry." A project staff member was able to establish a good relationship with a nearby vocational and technical school and students from this school visited the classroom to speak to the elementary students about safety and the use of tools. They were able to leave some of the tools for students to use on their own after the presentation.

10. A project staff member planned and conducted a 45 minute assembly program in each of the pilot schools during Career Guidance Week. All students from grades K-3 attended. The theme of the assembly was Careers in Health. Games and several audio-visual resources were used to hold the children's

attention. One high point was the availability of the many tools used in hospitals. For example, students enjoyed using a stethoscope to listen to a friend's heartbeat. Teachers were given follow-up suggestions and several teachers sent student work to the staff after the assembly. The staff judged this to be as valuable as a way of showing teachers the worth of the program, as it was as a learning experience for the students.

Media Specialist. The media specialist also carried out a variety of activities in working with the pilot schools. He assisted and supported the work of the "general staff" in several ways.

One of the important ways in which the media specialist supported pilot school teachers was in the area of instructional materials. He periodically reviewed commercially produced audio-visual materials in career education. In the course of the project he examined hundreds of products for possible use. He found about one quarter of the products examined were of sufficient quality to warrant recommendation. A directory describing these materials was printed and distributed to teachers and was updated at intervals throughout the project.

Based on this review of products a Media Lending Library was established at the career education project's headquarters. The project purchased about 60 media products for circulation throughout the district. As new additions were acquired they were announced in the project's newsletter. Project staff were also available to advise teachers about appropriate materials. During most weeks over half of the items in the library were in use.

A second important way in which the media specialist expanded pilot school activities was that, on request, he would go into classrooms to give students and teachers instruction on various forms of media and their

use in career education. Often he would accompany students on field trips to document these events through film, tape, etc. One object was to provide each school with some student-produced media such as slide shows, 8 mm films and videotapes.

Some of the specific activities of the media specialist are as follows:

1. In one school the media specialist made a videotape illustrating the use of one commercially-produced career education unit. This tape was used in evaluating the effectiveness of the unit.

2. In another school the media specialist worked with an art teacher in planning a project in which students traveled to places of work to photograph "careers in action". Students took pictures offering visual illustrations of jobs, uniforms, geography, and other appropriate community scenes. These photographs are filed at the school for use by all students. They may be used as bulletin board materials and in various lessons.

3. In yet another school, the media specialist worked with elementary classes in the production of videotapes. This effort, which continued for about one day a week over a two month period, involved the creation of four videotapes. Each videotape was made on the format of a quiz show called the Job Jigsaw Game. Fourth and fifth grade students explored the job roles involved in television production and carried out the activities these roles required in order to produce these four shows.

Guidance Specialist. The guidance specialist has also offered a variety of services to enhance the on-going work of the "general staff". Many of her additional efforts are also described below under Involving the Community. Some of her pilot school activities include:

1. In several schools the guidance specialist has introduced guidance-related instructional materials to the faculty. She has also observed and supervised the use of these materials and has participated in evaluating them afterwards.

2. The guidance specialist has also, upon request, contacted community agencies or groups seeking resources for career education instruction in certain areas.

3. The guidance specialist has maintained and made available to teachers a career file containing current information on specific jobs.

4. The guidance specialist has also served on a district-wide guidance committee and has been able to keep pilot school teachers informed about guidance services in the district as well as reporting to guidance counselors on the committee on the progress in the pilot schools.

Principals. All four of the pilot school principals were enthusiastic and cooperative. Some scheduled a regular weekly meeting with the project staff member assigned to that school while others were available for consultation as requested. Several of the principals have purchased additional career education materials for their schools as a result of effective use of these materials in career education activities. Others have stated that one of the chief objectives they have for their own building is to establish career education activity in all grades.

Each principal has influenced the way in which the project staff meets and interacts with interested teachers. In general, the principal gave the staff member a list of teacher's names and available times and left it up to the staff member to find a convenient time to discuss career education with the teacher and to make future appointments for specific activities. Early in the project this posed something of a problem. The project staff could meet with teachers either before or after school, during a lunch break, or during a preparation period. Sometimes the project staff also worked with a teacher in her classroom. These times are all relatively short and the teachers had many other obligations to fulfill during these time slots. The project staff tended

to be "on call" and to respond to the needs of the teachers accordingly. Principals did what they could in providing classroom coverage by aides to free teachers to meet with the project staff for longer time periods, and the problem diminished somewhat as activities got underway and teachers were able to operate with less time from project staff members. Despite the small periods of time available for teachers and project staff to work together, the generally positive attitude maintained by principals has encouraged both the teachers and the project staff to make the most of these times.

Teachers. In all four of the pilot schools all of the regular classroom teachers became actively involved to some degree in career education, although some were more involved than others. In schools with classroom aides, the aides also became involved in career education. In several of the schools, the librarian, assistant librarian, and the physical education and art teachers also carried out career education activities. Reading teachers from several of the schools participated in in-service sessions and began to introduce career education content into some reading activities, although their involvement never reached the level at one time expected due to presure upon them to fulfill other priorities. The participation of most of these school staff members has been enthusiastic and innovative, and in many cases school staff have carried a lesson or unit far beyond initial plans, simply because project staff were able to make appropriate materials available and to inform the teacher about suitable community resources.

In addition to the specific activities listed earlier which were carried out with the help of project staff, teachers planned and executed

many, many activities on their own, once they became confident that they understood how to infuse career education into the curriculum. These activities are far to numerous to list.

Summary. The project staff exhibited a great deal of resourcefulness and enthusiasm in the performance of their responsibilities. They spent a great deal of time working on ideas and preparing materials and were able to offer teachers valuable assistance in the identification and development of career education lesson activities.

Using the principal as a partner in the career education program was effective and legitimate. It proved an extremely effective strategy in the pilot schools which resulted in the planning of the in-service sessions for principals of the other elementary schools as described later in this report.

The involvement of teachers in the pilot schools has been thoroughly accomplished. Teachers are enthusiastic and most have become confident about carrying on career education activities even without project staff support.

Although it is unfortunate that the project staff were prevented until so late in the project from going beyond the pilot schools, it is the opinion of PSE that in these four schools they did an extremely effective job of maximizing their impact. The initial one-to-one assistance to teachers proved a good way to start, particularly with the encouragement offered by building principals. The shift in the second year of the project to increase the use of group presentations and projects involving several teachers strenghtened the project even further. In all, the project staff's work in the pilot schools was a success.

Conducting In-Service Sessions

During the two years of this project, the staff has designed and prepared materials for a variety of career education in-service sessions ranging from a basic orientation to actual curriculum development efforts. Each of these in-service activities is described below.

Career Education Orientation for Pilot School Faculty. In the fall of 1973, the project staff planned an orientation to career education for pilot school teachers whom they hoped to involve in career education activities. The project staff went as a group to each of the four pilot schools and addressed the entire school staff, describing career education and its objectives, explaining how career education could be infused into the regular class curriculum, and outlining the services they were prepared to offer teachers in this area. The effectiveness of these orientation sessions were easily measured in the quick response and the number of teachers who requested assistance from the project staff.

District-Wide In-Service Course for K-12 Teachers. The project staff designed an 8-session in-service course offered to all teachers in the Yonkers school district. As pointed out earlier, due to arbitration discussions being carried out in the district, the incentive available to recruit teachers for this course was that of district credit. Although payment for non-school-time training is traditionally more effective in drawing teachers to workshops, this was impossible due to the situation in the district. Nevertheless, based on information provided to each school and on awareness of the work carried out already in the four pilot schools, about 40 teachers signed up for the course. About half of these were elementary teachers and the remainder from junior and senior high

schools.

The sessions were conducted in February and March. Each of the Yonkers project staff was responsible for one or more sessions. They assumed responsibility for moderating a specific session, providing the necessary materials, and working with guest speakers when they were involved.

PSE critiqued plans for this course in advance. We also attended a sampling of the workshops. PSE's impression of the in-service sessions was quite favorable, regarding both planning and conduct. The design and sequence of sessions and topics, the recruitment of career education staff experienced in the movement, and the quality of materials available to the participating teachers was most acceptable. The course was comprehensive in that it covered such topics as the infusion of career education into the existing curriculum, descriptions of on-going programs across the country, career education occupational clusters and their role in instruction, the use of media in career education, stereotyping in school and in work, the role of the community in a career education program, and others. The project recruited experienced personnel from projects in other parts of the nation to speak at its sessions. Teachers who had actually practiced career education came to speak to the Yonkers teachers and spoke freely of the experiences they encountered in carrying out career education in their own classrooms. The final event was a field trip for teachers who had requested a visit to another project. One group of seven teachers went to see the Mahopeck Career Education Project. Another group of 11 teachers spent half a day at the Minneola Career Education Project and half a day at the Nassau BOCES

facilities for career education. Teachers were very enthusiastic about these experiences, particularly the chance to observe the extensive facilities available at the BOCES.

This course was very important as the materials and information prepared for it served as the basis for most of the staff's later work. Aside from some suggestions about the setting for the sessions and the logistics of carrying them out, PSE's only concern was that the amount of information was almost too much for the time allotted to it--although much credit is due to the project staff for the comprehensiveness of the materials.

Teachers interviewed by PSE staff reported that the 8-session course was very useful and informative and served as a good preparation to begin career education activities. They had virtually no recommendations for change.

PSE also conducted a pretest and posttest of teachers involved in the course. A report on the impact of the course on teacher knowledge of and attitudes toward career education is presented in a later section of this report, Measuring the Impact of the In-Service Workshops.

Curriculum Development Workshop. In the spring of 1974, the project staff held a 2-day curriculum development workshop in career education and reading. The workshop involved about 50 elementary school teachers from the four pilot schools who had volunteered to participate. After orientation in larger groups, participants met in seven small groups. Each group was composed of a project staff member, a member of the central office staff, a reading teacher, and about four elementary teachers (one group of grades Pre K-K, one of grades 1-2, one of grades

3-4, etc.). The primary objective of the workshop was to assess a process for infusing career education and reading objectives into existing curriculum, that is, into subject areas aside from reading. The reason for infusing career education and related reading objectives into the curriculum arose from the fact that reading was the district's number one instructional problem. Each participant was taught how to develop a collection of learning activities called a COLA. In doing so each selected one reading objective and one career education objective to develop a minimum of four COLAs in at least two different content areas.

The 2-day session was held during school time since the use of substitutes to gain teacher's released time was the only alternative available due to the district's rejection of stipended workshops.

The project staff spent much time preparing for this workshop. They developed the idea of COLAs--that is a collection of learning activities which, in the context of the this workshop, meant learning activities which carried out the intent of specified career education and reading instructional objectives. Once this curriculum development concept had been adopted by the staff, it was decided it would be best to involve the district reading staff in the design and conduct of the workshop. Thus, two curriculum development staff members and the project director met with the reading staff several times prior to the conduct of the workshop. In addition to these activities, the project staff developed COLAs which could serve as examples of the product they would expect from workshop participants. Finally, during the workshop, each staff member was directly involved in one of the participant groups. Later, the staff spent much time reviewing, editing, and preparing for production of the

COLAs which had been produced during the workshop.

Staff reactions to the workshop were mixed. Most felt that the teachers themselves found the workshop instruction both interesting and of potential value. They believed that in many ways this particular process could be effective with teacher groups only if the objectives were limited and more time was allowed. The process of trying to incorporate both career education and reading objectives into the existing curriculum in a 2-day period was a task too difficult for most teachers to accomplish. As the primary purpose for conducting the workshop had been to assess the process, a major conclusion on the part of the project staff was that they would prefer to concentrate on the specification of career education objectives, activities, and resources only, for the development of curriculum materials which could be used in the classroom. Although there may be innumerable advantages to incorporating reading into this effort, it seems too large an undertaking for the time allotted.

As described in an earlier section, the project staff had originally planned to carry out a summer curriculum development workshop as a follow-up on this spring effort. As stipended workshops had been cancelled, it was not possible to carry out further curriculum development workshops.

Career Education Orientation for Principals. During the summer of 1974, the project director held a one-day meeting for all elementary school principals. In this meeting he explained the objectives of career education to the non-pilot school principals and described the progress made thus far in the pilot schools. He drew upon the experiences of the four pilot-school principals and the many ways in which they had been helpful to the project to illustrate the ways in which the project staff

might assist non-pilot school faculty members to begin career education. This meeting was initially scheduled as the first step in the process of expanding the career education project to the remaining elementary schools. As the State Monitors had recommended that the project staff continue to work in the four pilot schools for another semester, this meeting time was used to explain to prinicpals what they could do to begin career education without the active presence of the project staff. The effectiveness of this workshop can be measured both in the interest expressed by non-pilot school principals, and by the continuing and increased cooperation from the pilot school principals. PSE expressed concern that the control schools would be receiving this treatment, but the project director decided that the advantages of spreading career education outweighed the risk of contaminating the control group subjects.

Career Education Orientation for Non-Pilot School Faculty. The Yonkers school district includes 29 elementary schools in addition to the four pilot elementary schools. After it was determined that project staff should continue to limit their efforts to the four pilot schools, the staff planned an orientation to career education for non-pilot schools designed to inform them about ways in which they could carry out career education activities without the help of the project staff. Taking turns, the project staff presented this orientation at faculty meetings at each of the non-pilot schools. Teachers and administrators were introduced to the basic concepts of career education, were informed that this project was going on in the pilot schools, and were given a package of 15 sample lesson plans to illustrate how career education can be infused into regular subject matter. The project staff received positive feedback

on these sessions from both teachers and principals. Although the staff were not available to work in any of these schools, they did receive requests for information from interested faculty. This indicates that this orientation for faculty was as effective as the summer orientation had been for principals. PSE once again expressed concern regarding contamination of control group subjects, but a similar decision was made.

District-Wide In-Service Workshops for Elementary Teachers. Because teachers found the in-service course held in the fall of 1973 so valuable, and because so much information was available, the project staff decided to expand and refine the in-service materials to be presented in 16 two-hour, after-school sessions. These were to be scheduled during the fall in-service period. Unfortunately, due to unrest about teacher contract issues, response was low to in-service activities of any type. In spite of previous demand for this workshop so few people registered for the fall session that the staff were unable to offer the course. Although this course was never held, it is described here because the staff put considerable effort into improving the related materials and these have become a valuable product of this project. The revised course included an overview of career education, information on infusion, use of media, values and decision-making, stereotyping, community involvement, and classroom applications for all of the concepts covered. Ample and appropriate materials were prepared and each sessions was thoroughly related to the teacher's daily classroom experience. Although the staff planned other ways to use many of these materials, it is unfortunate that this course was never available.

In Service Workshops for Pilot School Teachers. The project staff planned to involve every teacher in the pilot schools in two days of workshop activity in career education. Because all of these teachers had some knowledge of career education, it was possible to start at a more advanced point than at any previous workshop. The overall objective of the workshop was to have teachers understand the need for behavioral objectives and to be able to write behavioral objectives and structure lessons around them. The workshop design included four half-day sessions for each teacher. The first session was designed to offer teachers an experience in which they would feel a need for behavioral objectives. Discussion of this would lead to the objectives of the workshop series. The second session focused on enabling teachers to write objectives. As described in another section of this report, the media specialist, assisted by the other project staff members, created a filmstrip for use in this session. The third session focused on the infusion approach to career education making frequent use of each teacher's own experience in the classroom. This session also included ways in which the career education objectives of the program and the reading objectives of the Yonkers School District could be infused in on-going activities. In the final session, discussion focused in this area again and teachers were to develop lesson plans and suggested evaluation procedures based on the objectives. At the final session, teachers were also to evaluate the workshop itself.

Plans for the workshop were well developed. Activities followed a logical sequence and took care to allow teachers to become comfortable

with the idea and use of objectives before being asked to begin creating such objectives.

Unfortunately, due to scheduling difficulties and interruptions resulting from unsettled contract negotiations, these workshops were delayed repeatedly and finally rescheduled for spring of 1975. More unfortunately, by the spring, only a few staff members remained and it was felt more crucial to devote their energies to efforts which would reach the non-pilot schools than to focus so heavily on the four pilot schools. This of course required a different type of workshop, as teachers in the non-pilot schools had not had much previous exposure to career education. We describe these plans here as the staff put considerable work into them and it is PSE's opinion that these plans would have resulted in a strong set of workshops.

Media Workshops for Pilot School Teachers. The media specialist on the project staff planned and conducted a workshop on the classroom production of non-photographic and simple photographic film strip, slide, and slide-tape presentations in each of the pilot schools. The workshop focused on the career education methods for introducing students to media production, gave teachers a chance to experiement with the mechanics of creating media products, and discussed classroom applications of the material covered. The workshop was originally scheduled to occupy an entire day but was later tailored to a half-day format. After the workshop each school received a package of materials used in the workshop so that teachers would be encouraged to pursue classroom activities using the new information they had acquired. After each workshop, participants indicated on a feedback sheet what they felt about the selection of

topics, applicability to classroom activities, organization of workshop activities, presentation of the workshop, and usefulness of printed handouts, were all in the good-to-excellant range.

Workshops for Elementary School Principals. At the beginning of 1975, the project director realized that he needed to find a technique for reaching staff in many of the non-pilot elementary schools and needed to do this with his now limited staff. He was also asked to coordinate his efforts with those responsible for elementary education, reading, and staff development in the district. The project director worked with people from these three departments to create the following plan which was approved by the Assistant Superintendent for Instruction.

The overall strategy to maximize career education in all elementary schools in the district was to involve a number of principals in leadership training designed to teach them how to present a workshop. The group agreed that it would strengthen this plan to use experienced outside trainers The National Training Laboratory was contacted and agreed to provide such training. One of the trainers met with the group to establish goals, objectives, and parameters of the workshop. It was determine that "how to lead a workshop" would be the content of the training. As the first workshop each principal would be holding for his own school staff would be in career education, this subject was chosen as the example in teaching principals the skills of planning and conducting workshops. It was decided that more specifically within the area of career education, the workshops would focus on goal setting, communication skills, and decision-making, as these are all useful skills in many teaching areas. Once these essentials were established it was determined that the specifics of the

workshop would be negotiated by the project director and the outside trainer because career education was the theme. It was further determined that the career education project staff would work with the principals on all preplanning, attend the workshop itself, and assist principals as they implemented the skills they had learned.

Sixteen elementary principals were chosen to participate. The four pilot school principals were included as they had much to offer from their past experiences. The staff then invited the 14 principals who had least experience in that role. All but two accepted, giving a total of 16 workshop participants. Prior to the workshop these principals met with the project staff for a half-day of logistical and career education orientation. The group then went to a conference center for the workshop which lasted from a Friday at 10:30 a.m. to Sunday at 4:00 p.m. Following this intensive weekend workshop, the principals divided into pairs and each worked with one of the career education staff to plan workshops for their own school staff. After these individual meetings the group met as a whole to review what they had planned. The workshops were held during the course of the next two weeks, a hectic schedule but necessary as the roll over of funds was only effective through the end of April. Each faculty member in the schools of these principals was then given a day of released time with substitutes provided from career education money in order to attend the workshop. The teams of principals used different approaches. Some worked together to train all the faculty of one principal's school on one day, and all the faculty from the other principal's school on the second day. Others had all the faculty from one school come on two mornings, and all the faculty from the other

school come on two afternoons. In yet other cases, the principals mixed staff from the two schools to give a broader exposure and involved half the faculty from each school in each workshop. At any rate, the typical workshop included 10-12 people.

Based on observation of several of the workshops, an examination of the materials created by principals, and the feedback sheets filled in by teacher participants, it is PSE's evaluation that this plan was effective in a number of ways. By training principals who then trained staff, the project staff geometrically increased the number of people who are oriented to career education. Also as the project staff will not be available next year to offer one-to-one support to individual teachers, it was a good strategy to involve principals who are always available in the building as well as to involve all of the faculty from a school at the same time so that they could turn to each other for assistance in the future. The plan used to accomplish this strategy also seemed effective. Involving the least experienced principals on a volunteer basis in an intensive weekend-long workshop and then asking them to work in teams offered considreable strength to this effort. Having the staff on call to help with planning and conduct of the workshops themselves further increased the confidence of the principals and the liklihood that they would continue efforts in these directions. One principal already involved in career education was so enthusiastic about the plan that she used building money to release teachers for additional time in order to continue the workshops. Several others bought materials or refreshments from their own money for use at the workshops. In all, these workshops seemed to be a success on any terms, but a particularly good success as a

first step for schools not previously involved in career education.

Summary. During the two years of the project the staff have planned, prepared materials for, and conducted a wide variety of in-service sessions. Most of these have been extremely valuable both in the judgement of participants and in the judgement of PSE staff as observers. The only workshop which was less than effective was the attempt to infuse both career education and reading objectives into existing curriculum. As the purpose of this workshop was to test this very method, the workshop had enormous value in demonstrating that teachers would need more than a few days to learn to handle this process effectively. It is unfortunate that the staff were unable to hold some of the workshops at all, as plans and materials for them appeared extremely valuable. It is also unfortunate that many of the efforts they were able to carry through were delayed numerous times and occurred so late in the project. We realize that most of these delays were beyond the control of the staff, but still express regret that teachers did not have the materials and knowledge available to them sooner, while they still had the support of the project staff to draw upon in using new ideas. It does seem, however, that teachers are enthusiastic and will continue to use these ideas throughout the future with or without outside help. It is the judgement of PSE that the efforts of the staff in the area of in-service preparation have been enormous given the number of staff members involved; they created plans for 9 different in-service sessions or courses and conducted 7 of these, often conducting the same workshop a number of times to reach all pilot schools or all elementary schools. These efforts have also been effective as witnessed by individual evaluations and by the general enthusiasm of

teachers in the district. This is further documented later in a section on Measuring the Impact of the In-Service Workshops.

Developing Instructional Materials

In developing the program, offering support to teachers in the pilot schools, and preparing for in-service sessions the project staff have provided a variety of materials. In addition, they have created other materials to disseminate career education concepts and ideas to staff throughout the district. Although the creation of materials has not been a primary emphasis of this project, the staff have created a number of attractive and useful documents and deserve full credit for their efforts. Many of these are described below.

Annotated Bibliography of Career Education on Media Products. One service the project staff has offered first to pilot school teachers and later to all elementary teachers in the district has been the continuing review of commercial and non-commercial career education materials developed outside the district. The media specialist has spent extensive time reviewing various audio-visual products and the staff have worked together to select the collection of materials they have made available to teachers in the district. As a result of these efforts they have compiled a bibliography of career education instructional materials which they have reviewed and could recommend for use at different grade levels in different teaching situations. This document was updated as new products were acquired and even after the media specialist was transferred out of the project staff other staff members continued this work. The document thus remained current through June of

1975 and was especially useful to teachers at this time as they were selecting materials to order for use next year.

Sample Infused Curriculum. The project staff worked hard to perfect a useful format for sample lesson plans infusing career education into other elementary subject areas. They revised this format several times and eventually arrived at a technique which seemed to offer ease both for the teacher creating a lesson and for the teacher using a lesson. The staff completed editing on over 150 sample lesson plans altogether. Unfortunately, due to cutbacks in project funds this entire collection was never printed for distribution. The most effective use of this sizeable resource, as recommended early in the project by PSE, would probably have been the distribution of packages of 10 to 15 lesson plans on a regular and frequent basis. Even if the materials had been printed and distributed late in the second year of the project, their distribution would not have been as affective as it would have been if teachers had had access to smaller amounts of information on a more frequent basis. Based on this line of thinking, the project staff did begin distribution of the Lesson of the Week as described below.

Lesson of the Week. This project was designed to offer periodic stimulation to teachers to try new career education activities. Each week the project staff compiled a sample career education lesson at each of two grade levels. Thus, about every three weeks the teacher could expect to receive a new sample lesson at his or her grade level. Each lesson addressed one curriculum concept and one career education concept. But, each was structured about some one performance objective. Each lesson contains resources, activities, evaluation procedures, and suggestions.

The curriculum and career education concepts are broad aims for student accomplishment. It follows logically that these concepts can be broken down into a number of performance objectives. As each lesson addresses only one objective, teachers have a clear sense of the aims of the lesson. This is a considerable improvement over the original format for such lessons. PSE thought this was a much more effective usage of the suggested lesson plans than the previously described compilation of such plans. One suggestion to increase the effectiveness of this approach if it is to be used in the future by this or any other project, is that each new lesson of the week should include a short memo explaining to the teachers that the lesson is one of a series and that they can expect to receive more in the future. This type of memo would maximize future use of the lessons as they would know when to expect a new one and could build this into their planning.

Career Education Newletters. Early in the project the staff began a monthly career education newletter. They have continued to publish this newsletter each month during the school year. The newsletter is attractive and contains a variety of information ranging from new materials available and new ideas in the area of career education through brief reports on activities taking place in the district. The staff have done a good job in relating career education information, both national and local, to the reader. For example one issue listed and described career education activities and units of instruction carried out by pilot school teachers. The issue offered good examples of the units they were working on, field trips they had made, and the types of visitors who had come to their classes to talk about the work they were doing. The variety of

instructional techniques illustrated in this one issue was an excellant way of alerting Yonkers' staff to highlights in the career education program thus far. In another issue, a nationwide study is cited which helped to emphasize both the project staff's national interest in career education and the effective use of the literature. The announcement of work on the part of students in Yonkers in television production, taking roles such as scriptwriting, camera direction, and so on, under the guidance of the media specialist was a good way of exhibiting the range of talents available to assist teachers. Again, interesting career education lessons and activities were highlighted.

The newsletter has been quite successful, probably because of the notion that teachers make greater use of information that is received in smaller quantities and at intervals, than they do of large quantities of materials received in one lump at a later date. A collection of these newsletters also offers a good view of the scope of the project for anyone outside the district or for the community.

Yonkers Career Education Project In-Service Handbook. The material contained in this manual was initially prepared for the fall, 1973, career education in-service course which received such positive teacher response. PSE's one concern about that course was that it contained almost too much information for the time allotted. The project staff therefore worked together to refine and extend the material contained in this manual, planning to use it in an in-service course taking twice the time of the initial course. Unfortunately, this course was never offered for the reasons described above. The staff did create, however, a collection of material which would serve as a useful reference source long after a teacher had

completed the in-service course, As did the plan for the course, the manual includes printed materials on an overview of career education, information about infusion, use of media, values and decision-making, stereotyping, and community involvement. This book is an excellant document for use by Yonkers teachers and also would have much to offer other projects outside the district. It clearly represents the enormous amount of time, pride, and effort which the project staff as a team expended upon it.

Filmstrip: How to Write Career Education and Reading Infused Behavioral Objectives Based Upon Learning Outcomes. This filmstrip was created as part of the material to be used in the planned pilot school workshops described above which unfortunately were never held. This filmstrip would have fitted that need very well. It would also, however, serve as an instructional tool in other contexts. It would serve as a good quick review for teachers who have been using the project's learning outcomes to develop behavioral objectives for use in their classrooms. It is unfortunate that this filmstrip was never used in its intended presentation, but we have mentioned it here as it is a useful product.

Monographs on Career Education. The career education project staff created five monographs on different aspects of career education, some of the staff devoting their own time to the effort. The monographs are entitled:

The How and Why of Career Education
An Infusion Strategy for Career Education
Career Approach to Media Development
Career Education Implications for Special Education
Career Expressions of Women

These monographs represent considerable work on the part of the staff. They describe and expand upon many of the basic concepts of career education and could be useful to a variety of audiences. As was true with several previously described products, these monographs would be useful to those interested in the field of career education, even outside of the Yonkers school district.

Summary. The Yonkers project staff, working individually or working as a team, have produced many useful career education materials. Two drawbacks seem to hold true for several of the products. Some were designed for specific presentations which were never made and thus the materials were never distributed to those who could have used them. In several other cases, the materials were available too late. It is understandable that the project staff needs time to complete these materials, but it is unfortunate that further delays were created by various factors of the situation in the district. This is not meant as a criticism of the quality of the materials as most are both attractive and useful. Perhaps this difficulty might be resolved in the future in this and other projects by distributing materials in smaller sections as each section is completed, rather than waiting to complete an entire book or collection before making the information available to teachers.

Involving the Community

The Yonkers project has addressed itself to community and parent involvement since it began. The project surveyed attitudes of the community, formed advisory councils, and worked with existing groups such as the PTA. Some of these activities are described below.

Career Education Attitude Surveys. When the project began the staff recognized the importance of understanding community priorities as they developed the Yonkers career education model. Therefore, the staff administered an attitude survey instrument to four respondent groups in Yonkers: students, school staff, parents, and business and industry representatives. The surveys were initiated in the fall and PSE staff analyzed the data collected and presented findings to the staff for use in planning. Findings of this administration of the attitude survey were very favorable. These are reported at length in the following section on Surveying Attitudes Toward Career Education. The staff used the delphi process in an attempt to reach convergence in the groups' basic attitudes toward career education. They administered the survey instruments again to each group. Data from subsequent administrations were analyzed by the project and appears in their report. Essentially, all groups remained positive toward career education.

Advisory Committee. In the initial plan each of the pilot schools was to have an advisory committee and a city-wide advisory committee was to be established to serve the entire project. During the first year these committees proved not as effective as the project would have liked. The school committees did result in increased parent involvement in the program. For example, a parent member of one committee volunteered to work in the school on serving projects during the following year. In another school one of the parent members was also PTA president. She arranged to compile a parent resource file, listing parents who were willing to work in the classroom, show students their places of business, serve as career education speakers, or provide other resources for the

program. On the whole, however, the school based committees did not seem able to offer advice and guidance to the project as originally hoped. Committee members seemed to feel that the goals of the program were almost too global for committee members to deal with and that committee members did not always understand what their role was to be. The project staff determined that in the second year of operation it might be more beneficial to work with the PTA or other on-going groups for project endorsement and guidance rather than with specially designated committees.

The city-wide advisory committee proved somewhat more effective, whether due to membership or to a better understanding of their role. It was determined to continue this effort and in the second year of project operation to continue to develop this group.

City-Wide Advisory Committee. In the second year of project operation several new members were selected for the advisory council and the role of members was further specified. As new members were selected from influential community groups, rapport between the project and the community proved to be closer. The project staff rather than working to schedule frequent meetings of the entire advisory council tended to work closely with the individual members many of whom had a great desire to help the program. For example, one of the members was involved both in the Yonkers School Board and a prominent businessmen's group. Through his contacts he familiarized the School Board with the activities of the program and he offered the project many suggestions as to local businessmen who might serve as resources for classroom teachers.

Parent Teachers Association. The project staff decided to work with the on-going Parent Teachers Association groups in the four pilot schools

to obtain project endorsement and guidance rather than to create entirely new groups for this purpose. As a beginning step in this direction, a project staff member designed a workshop presentation to orient parents to career education, and to make each of them understand why career education was important to his or her own child. They used materials such as a pamphlet on career education for parents created by the guidance specialist. Meetings attracted 15-20 parents each. Parents were enthusiastic about the program and offered to help classroom teachers in many ways connected with the program. This use of an on-going group proved a more worthwhile expenditure of effort than attempts to assemble an entirely new group and to orient members to their role in career education.

Summary. From the outset of the project the staff has attended closely to the priorities of the community and the resources offered by the community. A variety of methods were used to involve the community and to ellicit their support. Early efforts were not as effective as initially hoped as those involved were not clear about what was expected of them. Once their role was better formulated and more specific requests could be made the response of the community was generally quite favorable. The project staff showed considerable flexibility in finding new ways to involve the community and in revising plans until an effective one was found.

Summary of Activities

During the two years the project staff has carried out many activities in developing a program, working in the pilot schools, conducting in-service sessions, developing instructional materials, and involving the

community. Many of these have been described above. Our assessment of these activities is based on PSE's frequent visits to the project, meetings with the staff, observation of workshops and other special events, and examiniation of materials and documents. On the whole it is the judgement of PSE that the staff has worked long and hard and has collaborated well together to develop a good program for the Yonkers district. We wish that this program could have been extended to more schools sooner, but in any event feel that the staff has done an excellant job in those areas where they have worked. We would recommend that career education be continued in the Yonkers school district and that the knowledge of the now experienced staff and the many materials created and collected by them continue to be available to support classroom teachers and building principals as they continue to build a comprehensive career education program in Yonkers.

OTHER MEASURES OF THE PROJECT

The previous section has offered PSE's assessment of career education project staff activities. This assessment was based on our frequent contacts with the staff and our visit to the project as well as our attendance at workshops and other events and our examination of the materials and other documents created by the project staff. In addition, PSE believed that other measures of the project would be useful. During the last two years we have pursued several of these measures. In the first instance, the project staff administered a survey of attitudes toward career education to several populations in the district. PSE analyzed the data collected in this survey and reported findings to assist the project staff in planning. In the second of these, PSE staff created an instrument to measure teacher knowledge of and attitudes toward career education. This instrument was administered in a pre and posttest to participants in the first major in-service course conducted by project staff. The third of these was a mail survey of all teachers in the four pilot schools. Teachers were asked about their exposure to career education, the services available to them, and the extent to which they are using career education in their classrooms. Finally, in the second year project operation, PSE sought to measure the impact of the program on pupil performance. Pupils in the pilot schools and control groups from non-program schools were pretested in the fall using instruments based upon the career education program's objectives. The same pupils were tested again at the end of the school year and a comparison made. The procedures and findings of each of these four measures are described in the following pages.

Surveying Attitudes Toward Career Education

Introduction

The Yonkers School District first received federal funding in July, 1973, to develop its own career education program. The project, proposed for a period of several years, was to begin in the elementary schools and culminate at the post high school level. The attitudes and opinions of the Yonkers community--students, school staff, parents, and business and industry representatives--were the core around which the project's career education curriculum would be molded. Therefore, in October, 1973, the project staff surveyed approximately 900 individuals to solicit their attitudes and opinions regarding career education goals and objectives for a local program.

The survey instrument used to gather these attitudes and opinions was prepared by the project staff. It was field-tested with faculty and students from Yonkers Prep and modifications were made based on the results. The instrument was distributed to the principals of the four pilot project schools who, in turn, requested their entire staff (100%) to respond. Fifth grade students (100%) in the four schools and their parents (100%) were also surveyed. Business and industry representatives from five key community groups were sampled and included in the survey. In total, 66 percent of the 900 requested survey instruments were returned. Students and staff, as contrasted to parents and business and industry representatives, achieved higher return rates than the average cited above.

The following pages summarize and interpret the findings of the career education attitude survey of October, 1973.* The data are presented by

*The project staff later readministered this survey. Findings of subsequent administrations appears in project reports.

individual respondent groups as well as for the sample as a whole.

Findings

Students, staff, parents, and representatives of local business and industry in Yonkers all have extremely positive attitudes toward career education. They clearly feel that career education is important and evidently think that the school curriculum would be strengthened if it were made available. They also agree that it can materially benefit a person's future, in that it will improve his chances for employment. Finally, it is not seen as a flash in the pan that will make a brief impression and then disappear.

Sample Summary. Of a total of 601 students, staff members, parents, and local businessmen responding on 35 statements, more agreed with those seven than with any others:

	Statement	Percent Agreeing
23.	Work habits such as punctuality and reliability should be stressed in the school program.	89
4.	School experiences should help students to understand that their interests can be a basis for career planning.	87
22.	While learning about career opportunities, students should see people performing their jobs.	87
9.	Field trips and work experiences will be more beneficial if the teacher incorporates them into the curriculum.	86
5.	Actual work experience can have great educational value for all students.	85
10.	Curriculum should make students aware of the physical and intellectual skills needed for various jobs.	84
12.	Schools would do a better job if they taught students the necessary skills for coping with adult life.	84
29.	There are many more career opportunities than most people are aware of.	84

Out of the same 35 statements, fewer of the 601 individuals sampled agreed with these six than with any others:

Statement	Percent Agreeing
18. Teaching about career opportunities should be the responsibility of parents alone.	4
20. Providing students with career information should be the responsibility of the guidance department only.	7
32. Career information is not important for students whose parents already know what they want their children to be.	8
30. Teaching children how to use tools and machines in the schools is a waste of taxpayers' money.	10
28. Schools should protect children from the realities of life.	12
31. Teaching students about the world of work can be done in a one semester high school course.	14

Clearly the total sample believes strongly that the schools should place much greater emphasis upon the relationship between school work and students' eventual entry into the work force, as well as the physical and intellectual skills they will need to develop in order to ensure the greatest likelihood of success. Moving out into the community under school auspices to see people performing different kinds of work will be most helpful, it is felt, if this process is woven into the regular curriculm. Here we see a favorable attitude toward the notion of infusing community involvement into school activities. It is evident to the entire group that one thing that hampers many students is that they simply have not been made aware of a great many career fields that might be open to them.

Responsibility for career education is something which the group obviously does not see as one restricted to the home or to school guidance counsellors. It is also evident that career education is seen as one of the proper duties of the public schools and that it cannot be confined within the

limits of a one-semester course. Nor are the schools looked upon as institutions which should shelter children from the realities and responsibilities of life. Interestingly, a majority seem to feel that the schools encourage students to think for themselves. Even those children whose parents have decided what their child's probable course in life might be should be given every opportunity to avail themselves of career education experiences in the schools.

A majority do not think that women must be either family or career oriented, but more than 40 percent think that most people are unhappy with their present employment. Sex discrimination within the total sample appears to find little favor. In general, then, the majority of the total sample may be said to be strongly behind the concept of career education.

Students. Of a total of 200 students responding to the 35 statements more agreed with the following 11 statements than with any others:

Statement	Percent Agreeing
12. Schools would do a better job if they taught students the necessary skills for coping with adult life.	96
23. Work habits such as punctuality and reliability should be stressed in the school program.	84
3. Our schools encourage a student to think for himself/herself.	83
29. There are many more career opportunities than most people are aware of.	81
27. Schools have not done enough to promote a student's sense of responsibility.	78
22. While learning about career opportunities, students should see people performing their jobs.	77
9. Field trips and work experience will be more beneficial if the teacher incorporates them into the curriculum.	75

	Statement	Percent Agreeing
16.	The top priority of schools should be to educate children so that they can make decisions intelligently.	75
4.	School experiences should help students to understand that their interests can be a basis for career planning.	73
5.	Actual work experience can have great educational value for all students.	73
34.	Students should have a career goal by the time they leave high school.	73

On the other hand, out of the same 35 statements, fewer of the 200 students sampled agreed with these seven than any others:

	Statement	Percent Agreeing
18.	Teaching about career opportunities should be the responsibility of parents alone.	9
20.	Providing students with career information should be the responsibility of the guidance department only.	9
32.	Career information is not important for students whose parents already know what they want their children to be.	17
25.	School programs providing information about job opportunities are not necessary for college bound students.	22
30.	Teaching children how to use tools and machines in the schools is a waste of taxpayer's money.	22
28.	Schools should protect children from the realities of life.	23
26.	Career education is another name for vocational education.	25

It is interesting to note that the single most positive response from the students came when they were asked if the schools would be more effective if they prepared their students for the responsiblities of coping with adult life. This clearly indicates that infusion of career concepts is the most important attitude for the students sampled, and this is further confirmed by

the students' desire for reinforcement of proper work habits and the incorporation of work-related experiences into their curriculum.

Paradoxically, the students concluded that their school experiences tended to encourage them to think for themselves, while at the same time they felt strongly that the schools should do more to help them handle their decision-making in an intelligent and responsible fashion. Community commitment to career education is highly important to the students; they want to observe the adult community at work and learn more of the great variety of job opportunities open to them. They also want experience in holding down a job before leaving school and want to be oriented toward a career goal of some kind before leaving high school. Only a third feel prepared now to enter the job market when they graduate. Another one-third feel that they are not and one-third are not sure. One-third of the students considered that a one-semester course in career education would be sufficient. One-third disagreed, and one-third were uncertain. Clearly students should have an opportunity to learn more about the long range benefits of continuing career education.

While in agreement with the total sample concerning the need for school and parental involvement in helping them to develop their ideas about careers, the students are understandably a bit more anxious to be protected from life's realities than their teachers, parents, and local business leaders feel they should be. About one-quarter equate career education with vocational education.

The students are uncertain as to whether women must choose between careers and motherhood, and do not really know if most people are happy with their jobs. Though the total sample feels by a slight majority that students should be introduced to career possibilities in the primary grades, the students are much less certain.

Summing up, it can be said that the students clearly want the schools to help them prepare for the job market, and that fully three-quarters of them endorse the career education concept and the idea that they should have some career goal in mind when they complete high school. They are not, however, of one mind about the amount of time that should be committed to the career education process. At the same time, only a minority feel prepared to tackle the employment market on leaving high school. The school staffs will obviously need, therefore, to help students correlate career education with their chances of future job success.

Staff. Of a total of 80 staff members responding to the 35 statements more agreed with the ten which follow than with any other:

	Statement	Percent Agreeing
4.	School experiences should help students to understand that their interests can be a basis for career planning.	98
22.	While learning about career opportunities, students should see people performing their jobs.	96
9.	Field trips and work experiences will be more beneficial if the teacher incorporates them into the curriculum.	95
5.	Actual work experience can have great educational value for all students.	94
11.	A field trip can be as worthwhile as an afternoon spent in class.	93
14.	School curriculum should make students aware of the many different careers that are available.	91
23.	Work habits such as punctuality and reliability should be stressed in the school program.	91
29.	There are many career opportunities that most people are unaware of.	90
8.	The success of new programs in a school is greatly influenced by the principal's commitment to them.	89

Statement	Percent Agreeing
10. Curriculum should make students aware of the physical and intellectual skills needed for various jobs.	89

At the other end of the scale, fewer of the staff members sampled agreed with these nine statements than with any others:

Statement	Percent Agreeing
18. Teaching about career opportunities should be the responsibility of parents alone.	0
31. Teaching students about the world of work can be done in a one semester high school course.	2
15. Women must choose between having a career or raising a family.	4
20. Providing students with career information should be the responsibility of the guidance department only.	4
32. Career information is not important for students whose parents already know what they want their children to be.	4
17. Students learn enough about jobs in vocational education courses.	6
28. Schools should protect children from the realities of life.	6
30. Teaching children how to use tools and machines in the schools is a waste of the taxpayer's money.	10
1. Schools are doing enough to help students plan their future careers.	11

The staff members decisively agreed that school experience should help the individual student understand that the things he/she is interested in can serve as a useful tool in career planning. It is interesting to note that business leaders (97%) and parents (92%) are only slightly less emphatic on this point, while students (73%) seem somewhat less convinced of the truth of this.

The teachers are also quite clearly convinced that observing people at work, holding down a job, and incorporating these experiences into the curriculum can be of strong benefit to their students. Obviously the curriculum is seen as a critical tool in helping students become aware of various career opportunities together with the skills these require, and they feel attention should be given to the development of strong work habits.

Only 51%, however, consider that the schools are encouraging students to think for themselves, not a particularly strong endorsement of the current program. Nor do they fully approve of the present course offerings. Forty percent feel that the curriculum stresses factual detail instead of practical skills, with 35 percent agreeing and a quarter of the group undecided. A clear majority, however (89%) are convinced that any new program must have the strong support of the school principal if it is to enjoy any success. These statistics would suggest that the staff is in at least partial agreement with the students concerning the efficacy of the present curriculum.

At least one-quarter of the staff consider vocational education synonymous with career education, and this appears to coincide very well with the student viewpoint. Inasmuch as 40 percent of the businessmen sampled came to the same conclusion, however, the attitudes of both staff and students may to some extent be said to have been influenced by the surrounding community. Clearly the public's concept of career education will need reinforcement at the same time that the idea is being presented to staff and students.

The teachers appear far more certain than any other group that women can combine work with parenthood. They are fully prepared to have the schools

assume a leading role in career education and do not feel that this should be regarded as a one shot operation. They are fully prepared to share career guidance functions with the student personnel staff and do not think that vocational education courses provide the answer to the need for career education.

While they want their charges to have a reasonably clear picture of the challenges posed by the working world, a few (10%) consider that the use of tools and machines have no place in the curriculum and a similar minority (11%) feel that the schools are doing all that is necessary to prepare students for their career choices. Interestingly, the staff rejected sex discrimination in career education (80%) far more decisively than did the students (57%). Businessmen (75%) and parents (71%) were only slightly less certain about this question. Staff members, then, are fully behind the career education concept and would be prepared to implement it with enthusiasm, particularly if their administrators are committed to its success.

Parents. Out of the 35 statements in the questionnaire, the 230 parents sampled agreed with the following nine more than any of the others:

Statement	Percent Agreeing
4. School experiences should help students to understand that their interests can be a basis for career planning.	92
10. Curriculum should make students aware of the physical and intellectual skills needed for various jobs.	92
14. School curriculum should make students aware of the many different careers that are available.	92

9.	Field trips and work experiences will be more beneficial if the teacher incorporates them into the curriculum.	91
22.	While learning about career opportunities, students should see people performing their jobs.	91
5.	Actual work experience can have great educational value for all students.	90
23.	Work habits such as punctuality and reliability should be stressed in the school program.	90
19.	One of the goals of career education should be to prepare students to become economically capable of standing on their own two feet.	89
11.	A field trip can be as worthwhile as an afternoon spent in class.	87

The conclusion that parents favor career education in the schools is reinforced by examining the statements they disagreed with. Fewer parents agreed with the following seven statements than with any others:

	Statement	Percent Agreeing
18.	Teaching about career opportunities should be the responsibility of parents alone.	3
30.	Teaching children how to use tools and machines in the schools is a waste of taxpayers' money.	3
32.	Career information is not important for students whose parents already know what they want their children to be.	4
31.	Teaching students about the world of work can be done in a one semester high school course.	5
20.	Providing students with career information should be the responsibility of the guidance department only.	9
28.	Schools should protect children from the realities of life.	9
17.	Students learn enough about jobs in vocational education courses.	10

Rejecting these statements is, of course, another way of expressing a positive attitude toward career education. The parents sampled are clearly of the opinion that the schools must play a sizeable role in helping their children determine what their aptitudes and interests are, that the schools should help them to equate these with the possible range of career choices of which they may be unaware, and that the schools should teach them about the various skills they will need in the process of making their ultimate choices. Field trips and actual work experiences are excellent means of implementing these concepts, they feel, and they are agreeable by a wide margin to having all of these made part of the regular curriculum. They strongly feel that the development of good work habits should have high priority in the schools, and want their sons and daughters to be able to take care of their own financial needs at the close of their high school careers. Certainly they do not think their children are ready to enter the job market upon graduating from high school as matters now stand.

The parents obviously want the schools to assist them with the career education process for their children, and feel that career information and career education should have great emphasis placed upon them. Only a bare majority seem to think that the present programs encourage students to think for themselves. About one-tenth seem to think that career education can be handled by the school guidance department or in a one semester high school course and want their children exposed to the working world somewhat more slowly. One-third tend to confuse career education with vocational education courses, though only ten percent think this will take care of the problem of career determination. In general, however, the parents are clearly supportive of the concept of career education as a part of the school curriculum and endorse the means of implementing it which have been

suggested. Only one-fifth feel that the schools are handling the matter adequately at this time. Only half of the parents in the sample consider that most persons are happy with their work. In general, therefore, the parents look upon career education with great favor and could be expected to give it their strong support.

Business and Industry. Of a total of 91 business and industrial personnel responding, more agreed with these 11 statements than with any others:

	Statement	Percent Agreeing
14.	School curriculum should make students aware of the many different careers that are available.	98
4.	School experiences should help students to understand that their interests can be a basis for career planning.	97
10.	Curriculum should make students aware of the physical and intellectual skills needed for various jobs.	97
23.	Work habits such as punctuality and reliability should be stressed in the school program.	97
5.	Actual work experience can have great educational value for all students.	95
19.	One of the goals of career education should be to prepare students to become economically capable of standing on their own two feet.	93
16.	The top priority of schools should be to educate children so that they can make decisions intelligently.	92
11.	A field trip can be as worthwhile as an afternoon spent in class.	91
9.	Field trips and work experiences will be more beneficial if the teacher incorporates them into the curriculum.	91

22.	While learning about career opportunities, students should see people performing their jobs.	90
29.	There are many more career opportunities than most people are aware of.	89

Of the business and industrial personnel responding, fewer agreed with these nine than with any others:

	Statement	Percent Agreeing
18.	Teaching about career opportunities should be the responsibility of parents alone.	0
28.	Schools should protect children from the realities of life.	1
32.	Career information is not important for students whose parents already know what they want their children to be.	1
30.	Teaching children how to use tools and machines in the schools is a waste of taxpayers' money.	2
31.	Teaching students about the world of work can be done in a one semester high school course.	2
20.	Providing students with career information should be the responsibility of the guidance department only.	4
17.	Students learn enough about jobs in vocational education courses.	7
15.	Women must choose between having a career or raising a family.	13
1.	Schools are doing enough to help students plan their future careers.	14

The business and industrial community comes out emphatically in favor of placing career seeking information within the school curriculum and clearly feels that properly structured school experiences can be of great help to the student trying to find his way. Actual work experience is also strongly endorsed and the idea that high school youngsters should learn how to be

economically independent is considered crucial. Field trips and work experiences, when incorporated into the curriculum, are looked upon as strongly supportive of these goals. Businessmen want students to see members of the work force on the job and consider that this would help students during the career selection process. They are also convinced that career information has not been disseminated sufficiently.

Businessmen and school staff are almost unanimous in their view that parents should not assume total responsibility for career education, nor should information on the subject be considered unimportant for those children whose parents already hold definite opinions concerning their child's possible career. The business community also holds that the schools should not protect students from the realities of job hunting and retention. Nor can career education be considered anything other than a continuing process, to be carried on by school staff with the support and cooperation of parents.

Businessmen are a bit less certain about vocational education courses, seven percent considering these adequate for teaching students about career education. A larger minority, 13 percent of the group, are certain that women must choose between their career aspirations and raising a family, but they are not nearly so concerned about this as are the students (40%) or parents (18%). One-seventh of the sample felt the schools were adequately handling the career education problem.

Summing up, it can be said that all four groups sampled agree in general with the primary thrust of career education and the means proposed to implement it, though the degree of acceptance of different aspects of the program varies.

Conclusion

All four groups sampled seem to be in substantial agreement that there are a greater number of career opportunities available than most people would imagine. While all favor the idea that school experiences help students correlate their interests with career planning, there is a statistically important range of opinion between school staff who are most convinced of this (98%) and students who seem least (73%) impressed with this statement. A greater gap appears when it comes to having schools teach the skills that will best prepare students for adult living. Ninety-eight percent of the staff feel that this is valid, while only 71 percent of the students accept this as a proper role for the schools. Finally, while 97 percent of the businessmen sampled want the school curriculum to make clear to students the various kinds of physical and mental skills required for different jobs, only 66 percent of the students are convinced that they want this done. This would suggest that it is the students who most need to be informed about the validity of the various facets of career education since at the same time 96 percent of them also clearly want the schools to help prepare them for adult life.

It is also obvious that the students must have the differences between career and vocational education made more explicit, since 72 percent of them either consider the two one and the same or do not know the difference. Sixty percent of parents are in the same position, as against 53 percent of the businessmen and 47 percent of the staff. This makes it clear that a broad based campaign aimed at educating the 61 percent of the total sample who are unclear as to the goals of the program is a matter of the highest priority, since a majority of the total sample approve of the goals being sought and approve of the idea of giving career education a strong place in the total curriculum.

The most statistically important range of opinion on the questions with which all groups were in substantial agreement appeared when they were asked whether information concerning the working world could be confined within the scope of a one semester course. While only tiny minorities (2-5%) of school staff, parents, and businessmen agreed with this view, over one-third of the students accepted it, with one-third undecided and only one third in disagreement. This would tend to reinforce the conclusion that students feel career education may be as susceptible to compartmentalization as most academic subjects are, and that the specifics of career education are not sufficiently clear in their minds.

Measuring the Impact of the In-Service Workshops

The Yonkers Career Education Program staff held a series of 8 workshops to orient in-service teachers to career education. Each session was held after school and lasted about two hours. The sessions covered basic career education concepts and were designed to prepare teachers to carry out career education lessons in their own classrooms.

At the first and last sessions of the workshop, participants were asked to complete a survey regarding their knowledge of and attitudes toward caree education. A comparison of the participant's responses at the final worksho offers a measure of the impact of the workshops. This section deals with th findings of that survey. It includes a description of the characteristics o individuals who make up the sample, a discussion of their attitudes toward career education, and a discussion of their knowledge of career education.. The survey instrument appears as Exhibit A at the end of this section.

The Sample

The survey questionnaire was designed to obtain information about the characteristics of the workshop participants. It included questions about t psoition of each individual, the grade level and subjects taught, the number of years in the field of education, and the person's previous exposure to th career education program. A description of these characteristics follows.

Number of Respondents. Forty-three participants completed the survey questionnaire at the first workshop session on February 19, 1974. This group will be referred to as the pretest group. Thirty-four participants completed the questionnaire at the end of the last workshop session which was held on April 16, 1974. This group will be referred to as th posttest group. This decrease in the number of respondents is to be

first session of an in-service course in order to determine whether or not to enroll. In addition, a teacher who enrolls in a course is sometimes unable to complete it These factors probably explain the decrease in number.

Although this decrease in the number of respondents was to be expected, it would still be possible for the change to affect the findings of this comparison. For example, if those who completed the pretest survey but did not return to complete the posttest survey were those people who were not interested in career education, then posttest results favorable to career education might be due to the absence of these disinterested participants, rather than to the impact of the workshop. To guard against this possibility, several steps were taken. First, the pretest group and the posttest group were compared to see if the two groups had similar characteristics. Then, those participants in the pretest group whose responses could not be matched to a response in the posttest group were analyzed separately to determine how their responses compared to the responses of the remainder of the pretest group. The results of these comparisons are described below.

A Comparison of the Characteristics of the Pretest Group and the Posttest Group. The pretest and posttest groups were found to be very similar in terms of positions held, grade level and subjects taught, and number of years in education. The pre and posttest groups appeared different only in terms of their previous exposure to the Career Education Project.

There were two differences in the area of previous exposure to the Career Education Program. First, six people from the pretest group stated that they had worked with the project staff before the workshops began. Only two people from the posttest group made this statement. This may indicate that

four of the participants who were already working with the Career Education staff attended the first workshop session, but did not continue with the workshops, possibly because they felt they were already receiving the information they needed in their day-to-day work with the project staff. If this is the case, the absence of these respondents in the posttest group would tend to make the posttest responses less favorable to career education than they might otherwise have been.

Another difference between the pretest group and the posttest group also occurred in the area of previous exposure to career education. Eleven participants in the pretest group stated that they had conducted career education activities in the classroom before attending the workshop. In the posttest group, only four individuals stated that they had conducted career education activities in the classroom before the workshops began. This may be due to the factors described above; that is, that those individuals who were already working with the career education staff chose not to complete the workshop, and therefore did not appear in the posttest group. Another possible explanation for this change is that participants who initially stated that they had conducted career education activities may have determined after attending the workshops that the activities to which they had referred did not qualify as career education activities.

Although the pretest and postest groups were comparable in most ways, because of these exceptions, one final check was made. The pretest responses which could not be matched to any posttest response were isolated and analysed separately. This group is referred to as the dropout group, as they presumably did not complete the workshops. This dropout group was compared to the pretest group as a whole to see if they differed from those who remained in the

workshops. On all but three items measuring attitudes toward career education, the dropout group was found to have a position which was the same as or more favorable than the pretest group as a whole. On all but three items measuring knowledge of career education, the dropout group was also found to have knowledge which was the same as or greater than the knowledge of the pretest group as a whole. Thus, in both attitude and knowledge, the dropout group was superior to the pretest group as a whole. Therefore, their absence from the posttest would tend to make those responses appear to be less favorable and less knowledgeable in regard to career education than the pretest group responses, in the absence of any impact created by the workshop.

As the characteristics of the pretest group and the posttest group are comparable, with these two exceptions, we will describe in detail here only the posttest group, as their characteristics are representative of both groups, with only minor changes.

Position of Respondents. Thirty-two of the respondents in the posttest group were teachers, one was a reading specialist, and one was a nurse-teacher.

Grade Level Taught by the Respondents. Obviously, many of the respondents were teaching more than one grade level at any given time. Some, in fact, might be working with all grade levels. Thirty-nine percent of the respondents reported that they spent at least a part of their time teaching children in kindergarten through third grade. Sixty-nine percent reported that they taught fourth through sixth grades. Sixty-three percent reported that taught seventh through ninth grades. Sixty percent of the respondents reported that they taught tenth through twelfth grades.

Subject Areas Taught by Respondents. Twelve of the respondents reported that they taught elementary self-contained classrooms. Five reported that they taught special education. Five reported that they taught science, four that they taught mathematics, and four more reported that they taught language arts/reading/English. Three taught social studies, two taught physical education, and one taught in each of the areas of music, art, business education, and foreign languages.

Years Respondents Worked in the Field of Education. Six percent of the respondents reported that they have worked in the field of education for two years or less. Thirty-six percent reported that they have worked in education for three to five years. Twenty-one percent reported that they have worked in education six to ten years, eighteen have worked eleven to fifteen years, and eighteen have worked sixteen or more years in the field of education.

Previous Exposure to the Career Education Project. Prior to learning of this workshop, fifteen percent of the respondents had not been aware that the project existed. Forty-two percent reported that they were aware of the project, sixty-three percent had received newsletters about the project, and three percent had attended meetings about the project. As discussed above, in the posttest group, two people had worked with the project staff and four people had conducted career education activities in the classroom. Differences on these two items between the pre and posttest groups have already been discussed.

On the whole then, the sample might be described as consisting almost entirely of teachers. These teachers are distributed across grade level and across subject area. They also vary in terms of number of years worked in the field of education, although only a small number

have worked two years or less. Most had been aware of the Career Education Project before they learned of the workshop, but few had actually worked with the project staff or conducted career education activities. The attitudes and knowledge of these respondents both before and after the workshops are described below.

Attitudes Toward Career Education

In order to measure attitudes toward career education, respondents were asked to read statements and to indicate whether they strongly agreed, agreed, had no opinion, disagreed, or strongly disagreed. Table 1 displays pre and posttest responses to statements for which agreement indicates a position favorable to career education. Table 2 displays pre and posttest responses to statements for which disagreement indicates a position favorable to career education. One other item was included to measure attitude. Responses are discussed below.

Agreement With Statements Favorable to Career Education. An examination of Table 1 indicates that a substantial percentage of the respondents were in agreement with statements favorable to career education prior to the workshops, with the exception of the statement that elementary school would be better if centered around the world of work. Only 37 percent of the respondents agreed with this statement prior to the workshop. Posttest results for each statement in Table 1 indicate an increase in agreement after the workshops. This is true for all statements, including the statement regarding elementary school and the world of work. This indicates that the impact of the workshops was to create more positive attitudes toward career education. This increase occurred despite respondents' already favorable attitudes toward career education. The most substantial increase revealed in Table 1 is a 26 percent greater agreement with the

Table 1

Pre and Posttest Responses to
Statements Favorable to Career Education

Statement	Percent who agree or strongly agree: Pretest	Posttest	Percent increase(+) or decrease(-)
Students should hold several kinds of jobs before leaving high school.	74	87	+13
If schools were career-oriented, they would be useful to more students.	85	93	+ 8
Elementary school would be better if centered around the world of work.	37	51	+14
High school students should receive credit for work experience.	85	96	+11
Career education should be available to all students from kindergarten through grade 12.	83	99	+16
If you are a classroom teacher, do you agree that courses in your subject area(s) or grade would be more meaningful and relevant if focused around career objectives?	67	93	+26

Table 2

Pre and Posttest Responses to
Statements Unfavorable to Career Education

Statement	Percent who disagree or strongly disagree: Pretest	Posttest	Percent increase(+) or decrease(-)
Information about job possibilities would detract from courses such as art and music.	76	99	+23
There are areas in the school program more important than career education that need our time, money, and effort.	67	72	+ 5
Career education helps students achieve the same goals as vocational education.	44	93	+49
Students going on to college should not make their career plans while in high school.	78	60	-18
The way mathematics can be used in jobs can be taught in a few days in every mathematics course.	72	63	- 9

statement, "If you are a classroom teacher, do you agree that courses in your subject area(s) or grade would be more meaningful and relevant if focused around career objectives?" This is an important measure of teacher attitudes, as it indicates not only a favorable position toward career education in the abstract, but also a favorable position in regard to the teachers' own work.

Disagreement with Statements Unfavorable to Career Education

An examination of Table 2 indicates that in the pretest responses there was substantial disagreement with statements unfavorable to career education. In other words, attitudes toward career education were favorable at that time. For three of the five statements, an even greater number of respondents disagreed with the statements in the posttest. One very significant change in attitude is revealed by responses to the statement, "Career education helps students achieve the same goals as vocational education." Only 44 percent of the respondents disagreed with this statement at the time of the pretest. In other words, 56 percent of the respondents either believed that career education and vocational education did help students achieve the same goals, or had no opinion. After the workshops, 93 percent of the respondents disagreed with this statement. In other words, 49 percent of the respondents showed a change in attitude and no longer agreed that career education and vocational education help students achieve the same goals.

On two of the statements unfavorable to career education, there was less disagreement in the posttest group. The first of these statements was, "Students going to college should not make their career plans while in high school." Although 78 percent of the respondents in the pretest disagreed with this statement, only 60 percent of the respondents disagreed on the posttest. Although career education is designed to help students make career plans, it does emphasize a long period of career

awareness and career exploration prior to specific career preparation, and it is possible that workshop participants believed that college-bound students would not benefit from career education if they made plans too early. This may explain this shift in attitude.

The other statement is, "The way mathematics can be used in jobs can be taught in a few days in every mathematics course." Seventy-two percent of the pretest group disagreed with this statement. In the post-test group, 63 percent disagreed. One possible reason for the shift in disagreement on this statement might be a lack of clarity in what constitutes disagreement. For example, one who disagrees with this statement may believe that "the way mathematics can be used in jobs" cannot be taught in a mathematics course at all. On the other hand, one who disagrees with this statement may believe that "the way mathematics can be used in jobs" can be taught only in a full career education program infused in a mathematics course. The lack of clarity in this item makes it difficult to interpret responses.

Contribution of the Community

One final item indicated participants' attitudes. Participants were asked, "How much could the community contribute to teaching career education concepts in your classroom?" On the pretest, 21 percent indicated that they believed the community could contribute a moderate amount, 16 percent indicated more than a moderate amount, and 55 percent indicated a great deal. In the posttest, 15 percent indicated that they believed the community could contribute a moderate amount, 18 percent indicated more than a moderate amount, and 63 percent indicated a great deal. In short, then, the posttest group believed that the community could contribute more to teaching career education concepts in the classroom than did the pretest group.

Overall Attitudes Toward Career Education

In summary, the posttest group revealed attitudes which were considerably more favorable to career education than those of the pretest group. On 10 out of 12 items, attitudes had become more favorable. On some of these items, the shift was quite large. Overall, then, the workshops had a considerable positive impact on the attitudes of participants toward career education.

Knowledge of Career Education

Nine items on the questionnaire were designed to measure participants' knowledge of career education concepts and vocabulary. These items ranged from information about the career education program, through career education vocabulary, to ideas for classroom use. The findings in these areas are presented below.

Career Education Concepts. Some of the items in the survey measured respondent's knowledge of whom the Career Education Program was intended for, how it should be taught, and the phases which it includes. When given a variety of options, 67 percent of the pretest group indicated that career education is intended for all students; the correct answer. In the posttest group, 72 percent of the respondents stated that career education is intended for all students.

Participants were asked whether career education should be taught through curriculum units constituting a new subject area, material infused into certain key subjects, material infused into the entire classroom curriculum, or material presented in classrooms as well as individually by a specialist, such as a guidance counselor. In the pretest, 44 percent of the respondents indicated that they believed that career education should be taught through material infused into the entire classroom cur-

riculum. Forty-one percent indicated that they believed career education should be taught by a specialist. After the workshop, 81 percent believed that career education should be taught through material infused into the emtire classroom curriculum, while only 6 percent expected that career education should be taught by a specialist. This indicates a substantial increase in understanding of the Career Education Program as a result of the workshops.

There are three phases of the Career Education Program: Career Exploration, Career Awareness, and Career Preparation. Respondents were asked to associate these three phases with the appropriate grade levels. This information seemed to be unfamiliar to participants. No one was able to correctly complete this item in the pretest, and only three people were able to answer it correctly in the posttest.

Knowledge of Career Education Vocabulary. The questionnaire was designed to measure participants' familiarity with career education vocabulary, such as job clusters, elements, and infusion. Responses are discussed below.

Respondents were asked to name at least five job clusters and list two occupations for each. In the pretest, 58 percent of the respondents were unable to give any answer, while only 21 percent were able to name at least five job clusters and two occupations. At the time of the posttest, only 9 percent could offer no answer at all to this question, and 75 percent were able to complete the question correctly.

Participants were asked to name the elements or major objectives of career education. In the pretest, 55 percent of the respondents were unable to give any answer at all, while only 12 percent were able to name

at least four objectives of career education and 12 were able to name three or more. After the workshop, only 3 percent of the respondents were unable to offer any answer at all, while 48 percent were able to name four or more objectives and 39 percent were able to name three or more.

Participants were asked, "What does D.O.T. stand for?" The correct answer was the Dictionary of Occupational Titles, which had been used in the workshop. In the pretest, only two of the participants were able to answer this question. In the posttest, eleven were able to correctly answer the question.

Respondents were asked to define the term infusion. In the pretest, 56 percent offered no answer, 37 percent offered a definition such as "to incorporate," "to put into," or another dictionary definition. Seven percent offered such a definition but included the notion of incorporating a subject into an existing curriculum. After the workshop, only 20 percent were unable to offer any answer, 20 percent stated a dictionary definition, and 60 percent stated a definition including the concept of incorporating a subject into an existing curriculum, as the Career Education Program does. This indicates an increased understanding of the idea of infusion in terms of career education.

Each of the above items regarding career education vocabulary revealed change from the pretest to the posttest responses. Although on some items the majority of the respondents appeared still unfamiliar with terms at the end of the workshop, there was some increase in knowledge in each case, and in some cases this increase was quite large.

Career Education Ideas for Classroom Use. One of the objects of the career education workshops was to prepare teachers to carry out career education lessons in their own classrooms. Several items were

designed to measure teachers' ideas in this area.

One item was, "Role playing is one technique you could use in the classroom to provide instruction in career education. Name three others." In the pretest, only 37 percent of the respondents were able to name three additional techniques they could use in the classroom to provide instruction in career education. After the workshop, 81 percent were able to name three techniques.

Participants were asked to list five ways the community can contribute to a career education program in the schools. Before the workshops, only 30 percent could name five ways the community can contribute, and 21 percent could name four ways. After the workshops, 60 percent could name five ways the community could contribute and 21 percent could name four ways.

Both of these items indicate that workshop participants gained considerable knowledge in the area of ideas for classroom use in teaching career education.

Overall Knowledge of Career Education. In each of the items measuring participants knowledge of career education, the posttest showed an increase over the pretest. Some of the posttest scores are still relatively low, however. This may indicate that these items relate to information which was not heavily emphasized in the workshops. In any event, there was an increase in knowledge about career education in every instance, and in some cases these increases were quite large.

Overall Impact of the Workshops

The overall impact of the workshops appears to be quite positive. As discussed above, on all but two items, respondents showed more favorable attitudes toward career education as a result of the workshops. In the

area of knowledge of career education, the respondents showed an increased understanding of career education in each item. As discussed in the description of the sample, these results are even more positive in light of the fact that the group which dropped out of the workshops was superior to the pretest group as a whole and might have caused the posttest to be even more positive had they remained in the workshops.

EXHIBIT A

QUESTIONNAIRE USED IN

MEASURING THE IMPACT OF THE IN-SERVICE WORKSHOPS

POLICY STUDIES IN EDUCATION

12 VANDERBILT AVENUE • NEW YORK, N.Y. 10017 • 212 • 684 • 6940

CAREER EDUCATION SURVEY

Please help us by answering the questions below. Do not sign your name.

To assist us in matching questionnaires later, please write the last four digits of your home phone number in this space: ___ ___ ___ ___

PART I Directions:

Please read each question carefully, then circle your answer to each question.

1. How many years have you worked in the field of education?

Less than 1 year	11-15 years
1-2 years	16-20 years
3-5 years	More than 20 years
6-10 years	

2. What is your position?

Administrator

Teacher

Guidance Counselor

Reading Specialist

Other (please specify) _____

3. If you are a classroom teacher, circle all the grades you are currently teaching. (If you teach ungraded classes, circle the grades corresponding to the ages of your students.)

K 1 2 3 4 5 6 7 8 9 10 11 12

4. If you are a classroom teacher, circle all the subjects you are currently teaching.

Elementary Self-Contained Classroom	Industrial Arts
Art	Language Arts/Reading/English
Business Education	Mathematics
Distributive Education	Music
Driver Education	Physical Education
Foreign Languages	Science
Health Education	Social Studies
Home Economics	Special Education

Other (please specify) _____

5. Which of the following describes your involvement in the Yonkers Career Education Project before you learned about this workshop? (circle one or more)

a. I was not aware that the project existed.

b. I was aware of the project.

c. I received newsletters about the project.

d. I attended meetings about the project.

e. I worked with the project staff.

f. I conducted career education activities in the classroom.

6. There are three phases of the career education program: Career Exploration, Career Awareness, and Career Preparation. Please circle below the grade level(s) related to each phase.

	Circle One or More Grade Levels												
Career Exploration	K	1	2	3	4	5	6	7	8	9	10	11	12
Career Awareness	K	1	2	3	4	5	6	7	8	9	10	11	12
Career Preparation	K	1	2	3	4	5	6	7	8	9	10	11	12

7. Define infusion. _____

_____

8. Name at least five job clusters and list two occupations for each.

Job Clusters	Corresponding Occupations
_____	_____, _____
_____	_____, _____
_____	_____, _____
_____	_____, _____
_____	_____, _____

9. What does D.O.T. stand for?

_____

10. Career education should be taught through: (circle one)

a. curriculum units constituting a new subject area.

b. material infused into certain key subjects.

c. material infused into the entire classroom curriculum.

d. material presented in classrooms as well as individually by a specialist, such as a guidance counselor.

11. List five ways the community can contribute to a career education program in the schools.

a. _____

b. _____

c. _____

d. _____

e. _____

12 There are several elements or major objectives in career education. One of these is Ecomomic Awareness. Name as many of the others as you can.

_____ _____

_____ _____

_____ _____

_____

13. Career education is intended for: (circle one or more)

a. minority group students.

b. high achieving students.

c. students who are able to work well with their hands.

d. college-bound students.

e. students who must seek employment immediately after high school.

f. potential dropouts.

14. Role playing is one technique you could use in the classroom to provide instruction in career education. Name three others.

a. _____

b. _____

c. _____

15. How much could the community contribute to teaching career education concepts in your classroom (circle one)?

None	A Little	A Moderate Amount	More Than A Moderate Amount	A Great Deal

PART II Directions:

Please read each statement carefully. There are no right or wrong answers. Just check the box which best describes how you feel about each statement.

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
16. Students going on to college should not make their career plans while in high school.					
17. Students should hold several kinds of jobs before leaving high school.					
18. The way mathematics can be used in jobs can be taught in a few days in every mathematics course.					
19. If schools were career-oriented, they would be useful to more students.					
20. Information about job possibilities would detract from courses such as art and music.					
21. There are areas in the school program more important than career education that need our time, money, and effort.					
22. Elementary school would be better if centered around the world of work.					
23. High school students should receive credit for work experience.					
24. Career education should be available to all students from kindergarten through grade 12.					
25. Career education helps students achieve the same goals as vocational education.					
26. If you are a classroom teacher, do you agree that courses in your subject area(s) or grade would be more meaningful and relevant if focused around career objectives?					

Assessing Teacher Exposure to and Use of Career Education in the Yonkers Career Education Program Schools

Many of the activities carried out by the Yonkers Career Education Project staff to offer teachers and other school staff exposure to career education, or to offer them the training, support, and resources needed to use career education in the classroom. In order to give full credit to the project staff for its efforts, and to collect information which might be useful to the staff in planning, PSE conducted a mail survey. The plan for this survey and the findings of the survey are described on the following pages.

Survey Plan

A mail survey of teachers, guidance counselors, and librarians in the career education pilot schools was designed to measure exposure to and use of career education. This section reports on the instruments, data sources, data collection procedures, and data of this survey.

Instruments. The PSE staff monitored the efforts of the career education project staff as they carried out activities in the schools. PSE created a questionnaire based on these activities and on the goals of the project. This 23 question instrument was designed to gather background, process, and outcome information. The background section included information such as grades and subjects taught. The process section included information such as the amount of training and resources the project staff have made available to the teachers, guidance counselors, and librarians. The outcome section included information on the amount of time each teacher spends on career education, the number of trips and visitors each teacher uses, and the attitudes staff report regarding the career education curriculum. This instrument appears as Exhibit B at the end of this section.

Data Sources. The data sources in this survey were the teachers, guidance counselors, and librarians in all four of the career education pilot schools in Yonkers.

Data Collection Procedures. PSE mailed a sufficient number of questionnaires to each of the four pilot schools. Principals were requested to distribute one questionnaire to each teacher, guidance counselor, and librarian. Teachers were asked to take 15 minutes to complete the questionnaire and to return it in the stamped self-addressed envelope provided by PSE. The initial return date on the questionnaire was January 10. This gave teachers about a week after their return from Christmas vacation

to fill out the questionnaires. Questionnaires were not distributed earlier as PSE wished to gather information on the entire first half of the year including all of December.

Unfortunately, due to mailing problems, two of the schools did not receive the distribution packages on time. The last of the questionnaires were not distributed until February. This coincided with another school vacation, and may have caused a lower response rate.

Data. The data gathered in this survey were the responses of teachers, guidance counselors, and librarians to the questionnaire described above. Although PSE did not interpret these data until teachers in all schools had had an opportunity to complete the questionnaires, we did forward a preliminary tabulation of the data to the project staff as soon as it was available, in order to assist them in planning.

Response Rate. The staffs of the four career education pilot schools included 49 elementary classroom teachers. These school staffs also included some pre-kindergarten, kindergarten, special education, reading, art, music, physical education, and health teachers as well as librarians, counselors, and principals. Twenty-six of the 49 classroom teachers in the four schools returned questionnaires. This represented a 53 percent response rate for this group.

It seems likely that the non-response was due in large part to the fact that questionnaires were distributed in two schools on the eve of a school vacation and therefore many teachers did not take time to complete them. It is possible that this 53 percent contained some bias as those most involved with career education might have been more likely to respond. However, if much of the non-response was due to timing, this bias would

not have occured. It is probable that respondents were repr ative of the four school staffs.

Questionnaires were also received from one kindergarten teacher, one special education teacher, one reading teacher, one physical education/ health education teacher, and one principal. It was difficult to determine what rate of response this set of five questionnaires represented. Principals were asked to distribute questionnaires to all special teachers, counselors, and librarians but, as these people are employed in the schools on a part-time basis, or work in more than one school, it was difficult to determine how many individuals actually received questionnaires. It is also likely that some of the staff members who did receive questionnaires felt that they were not intended to answer because they work only part-time in that school. At any rate, it is likely that the five questionnaires received represented a lower response rate for this group than for classroom teachers. This did not detract from the usefulness of the findings too seriously, however, because classroom teachers were the most significant target group of the career education project staff's effort.

Unfortunately, probably due to initial mailing difficulties in the distribution of the questionnaire, the response rate was not even for each of the four schools. Three responses were received from school 19, 15 from school 26, 9 from school 27, and 4 from school 32. Because of the unevenness of coverage across the four schools, no attempt was made to analyze the responses by school. As the responses were analyzed as a group, this unevenness of coverage should not cause any difficulty, as the career education project staff have spread their efforts evenly across the four schools. Therefore, the responses received from the group as

a whole should be an accurate indicator of the efforts of the project staff. Teacher awareness of and use of career education as of January and February, 1975, are reported below.

Findings

The findings of this survey are organized according to background, processes, and outcomes. A brief summary appears at the end.

Background. As described above, a total of 31 school staff returned questionnaires. This represented three staff from school 19, 15 from school 26, 9 from school 27, and 4 from school 32. Twenty-six of the respondents teach in elementary classrooms. Most of these are in self-contained classrooms. Others are team teachers for multi-age groupings. All teach a range of elementary subjects to their students. Respondents cover a range of grade levels: Seven teach first grade students, eight teach second grade, seven teach third grade, seven teach fourth grade, five teach fifth grade, and four teach sixth grade students. Those who teach students at more than one grade level appear in the totals for each grade level taught. Respondents also included one kindergarten teacher, one special education teacher, one reading teacher, one physical education/health education teacher, and one principal.

Thirteen of the respondents reported that they began using career education before September, 1973. This is before the career education project began. As one of the projects' initial approaches to teachers was to emphasize that many aspects of the existing curriculum were indeed a part of career education, it is not surprising that so many respondents report that they used career education prior to the project's inception.

Processes. The project staff have used many processes to foster the increased use of career education. These are described at length

in the preceding section entitled, Assessment of Project Operations, and in previous Quarterly Reports. These activities have included training, providing materials, and providing other support services such as assistance in making arrangements for speakers or trips, help in developing materials, etc. Although the amount and type of support provided by the staff have been described in detail previously, this questionnaire attempted to measure actual staff use of such services or, at least, awareness of their availability.

One major focus of project staff activity was in the area of providing training for school staff. Twenty-three of the respondents reported that they have participated in career education training since September 1, 1973. This indicates that the career education training sessions involved 74 percent of the respondents. This is a large proportion, considering that many of the training sessions were available on a voluntary basis. Apparently the project staff have created sufficient interest in career education that many school staff will participate even when they are not required to.

The information covered in training sessions was extensive and diverse. All 23 respondents who indicated that they had participated in training reported that the use of media in career education was one of the topics covered. This number reflects in fact that the project has a media specialis who has done extensive work both in acquiring media products and in developin ways for teachers to create media products with their students. Nineteen of the respondents indicated that they had received information on instructional objectives of career education. As an understanding of the career education objectives is central to much work in this area, it is important that almost two-thirds of the respondents did receive information in this area. The next

most frequently covered area of information was instructional materials available in career education. Sixteen of the respondents indicated that they had received information about these materials in career education training sessions. Thirteen respondents reported that they had received an orientation to career education and twelve that they had received information on curriculum development in career education. Smaller numbers reported that they had received information on a variety of other topics; nine had received information on teaching methods, eight on their role in career education, five on career guidance activities, four on how to select instructional materials, three on the world of work, and three on the role of other school staff in career education. Undoubtedly, the training provided by the project staff covered a broad range of useful information.

Respondents were asked about their role in the career education program. Twenty-two reported that they believe their role is to take students on trips to job sites, and 20 reported that they are to use community speakers in classroom instruction. Nineteen reported that they believe they are to review and select from existing career education materials and to teach career education lessons they have created. Fifteen indicated that they believe they are to teach existing lessons and 15 that they are to carry out career guidance activities. Some respondents also saw their role as including other elements. Ten reported that part of their role is participating in planning career education for their school or other schools in the district. Three reported additional, more broad roles such as infusing career education in any appropriate teaching activities. Only one respondent reported that he or she was uncertain what his or her role was. As all of these activities contribute to career education, and all are in some way supportive of the

goals of the project, the range and number of activities the school staff see as included as in their roles reflect favorably on the project staff's efforts to encourage school staff to infuse career education into classroom activities in many ways. Clearly, all but one respondent has an understanding of an appropriate role he or she can play in career education.

Respondents were then asked what helped them in understanding their roles in career education. Eighteen respondents reported that individual meetings with project staff had helped them in this regard. This undoubtedly reflects the many hours of project staff time working directly with individual school staff members to plan or carry out career education activities. This type of support was particularly stressed in the first year of the project. Thirteen respondents reported that group training sessions had helped them to understand their roles. These sessions, including both in-service training and school workshops, represented a major thrust of project staff efforts in each year. Apparently project staff activities, both individual meetings and group sessions, did enable school staff to understand their role in the career education program. In addition, six respondents reported that books help them to understand their role, five that the school principal had helped, and four that other teachers had helped. Two other respondents cited other sources such as personal knowledge and discussions.

Respondents were asked about their familiarity with career education's instructional objectives for the students they teach. Nineteen respondents reported that they were somewhat familiar with these objectives and six reported that they were very familiar. Two stated that they were somewhat unfamiliar, two very unfamiliar and two had no opinion on the subject. It may be that the 23 school staff members who reported what they were somewhat or very familiar with the objectives are the same 23 who participated in training.

At any rate, this sizable proportion of respondents do feel that they have at least some familiarity with the objectives, undoubtedly due in great part to the efforts of the project staff.

Respondents were also asked how well these objectives fit with the curriculum taught. Eleven respondents reported no opinion on the subject. Ten reported that they felt the objectives fit well, and seven reported that they fit very well. Only one reported that the objectives fit poorly and no one reported that they fit very poorly. In other words, at least 17 of the respondents feel that career education objectives can be met without disrupting existing curriculum. Although many respondents had no opinion, only one felt that the objectives fit poorly. On the whole, school staff are neutral or positive about the objectives of the program in regard to existing curriculum.

Respondents were asked about the availability of career education materials and resources. Twenty-nine reported that newsletters were available to them, 20 that audio-visual products were available, 15 that individual career education lessons were available, and 10 that lists of objectives, curriculum guides, catalogs of community trips, and student materials, books, and games were available to them. Nine reported that bibliographies of career education materials were available, eight that student assembly programs were available, and five that catalogs of community speakers were available. Apparently school staff have an awareness that many types of materials and resources are available. The low number reporting the fact that catalogs of community speakers are available may result from the fact that school staff have looked to project staff to make arrangements for speakers rather than to provide such a catalog.

School staff were asked where materials were available to them. Twenty-eight reported that materials were available upon request from the career education project staff or other central source. Eleven reported that materials were available in the building library, and five reported that they had materials available in their classrooms. The project staff have apparently been successful in making school staff aware that many resources are available at the career education office. As the project staff have frequently offered to assist school staff by providing materials, and will deliver these to teachers upon request, most school staff apparently look to this source. The fact that some materials are also kept in building libraries or in individual classrooms, and that teachers are aware of this fact, even further increases the likelihood of career education materials being used.

Respondents were questioned about their awareness of support services which are available to them from someone else to assist in career education. Nineteen reported that they were aware that help was available in planning career education activities and in locating and obtaining career education instructional materials. Eighteen also reported that they were aware that assistance was available to teachers in developing career education materials. Fifteen reported that help was available to make arrangements for career education trips, 13 to make arrangements for career education speakers, 12 to assist in teaching career education materials, and 12 that help was available in actually teaching career education in the classroom. Eight reported that they were aware that someone was available to accompany their classes on career education trips. Two reported that they were uncertain what help was available and no one reported that they believed that no help

at all was available. It is clear that all respondents realized that many different types of assistance are available. The fact that some school staff are aware of certain kinds of help and other school staff are aware of other different kinds of help may be due to the fact that, as the project has grown, the project staff has been obliged to be more selective in the types of help they can offer. For example, the project emphasis has shifted from making arrangements for career education trips and accompanying the class on such trips to exploring locations for trips and providing teachers with this information, allowing them to make their own arrangements. The array of services reported by school staff also reflect the extent to which the project staff was able to be flexible in meeting the specific needs of individual teachers.

To further measure the school staff members' awareness of the availability of support services, they were asked to estimate how many hours per month a career education project staff member was available in their building or able to come to the building if requested to assist them. Fifteen reported that they were uncertain. Five reported that they believed that someone was available 9-15 hours, four reported 5-8 hours, three reported 2-4 hours, two reported one hour or less, and one reported that no one was available. In addition, one person reported that he or she believed that someone was available over 50 hours a week. Apparently, school staff found it difficult to estimate how many hours per month a person was available. Of the 15 who indicate that they are uncertain, it is possible that they have not set an upper limit on the availability of assistance because their requests have been met. However, this in turn may be true because their requests have been minimal. In any case, 15 staff members indicated that they were aware that the project staff were available to assist for some given time period.

Fifteen more, although uncertain of the amount of time available, did indicate that they knew that some help was available.

Outcomes. The project staff, using the processes discussed in the previous section, have attempted to achieve several kinds of outcomes. Outcomes in the form of student learning are dealt with in the following section. Outcomes regarding teacher use of and attitude toward career education are the domain of this section.

The first indicator of staff impact on teacher use of career education is that teachers have indeed begun using career education. As described above under Background, 13 of the respondents have indicated that they had used career education activities of some type before the project's inception in September, 1973. In response to that same question, 10 school staff members indicated that they began using career education activities or lessons with students during the 1973-74 school year, or, during the first year of the project. An additional four respondents indicated that they began using career education activities or lessons with students during this school year. Three respondents indicated that they do not use career education activities or lesson. One of these was a principal who of course does not work directly with students. Responses to this question indicate that 27 of the respondents are currently using career education activities or lessons in their classrooms. Although 13 of these report that they were using some career education activities before the project's inception, the efforts of this project have at least doubled the number involved.

A second indicator regarding teacher use of career education was approached through a question on the number of hours of career education activities per week that the respondent carried out with students. Twenty-five respondents

indicated that they carried out career education activities for less than three hours per week. This number included two respondents who had indicated in the previous question that they made no formal use of career education activities. Apparently career education does get some mention in their classrooms. Four respondents indicated that they spend three to five hours per week on career education activities. No one reported more than five hours. These amounts seem fairly low. School staff have indicated that they participated in training, have some understanding of their role in career education, have some familiarity with career education objectives, are aware of the availability of materials and support services, and do carry out career education activities. It might be expected in the second year of a project, that at least some teachers spend more than five hours per week carrying out career education activities with students. It is likely, however, that the more successfully teachers infuse career education activities into the existing curriculum, the less likely they are to report large number of hours devoted to career education activities. They may report only the hours spent on special activities such as trips or speakers. On the other hand, if teachers have chosen some one subject such as social studies in which to infuse career education, and make no special attempts to cover it in other subjects, three to five hours per week at the elementary level represent a fairly lengthy lesson each day. As other factors such as project staff observations seem to indicate a greater amount of time spent on career education, it is probable that additional questions are necessary to fully understand this topic.

As additional information on the ways in which teachers are communicating career education concepts, respondents were asked how many visitors had come to the classroom to talk about their jobs and the kind of work they do.

Eleven reported that they had made no use of visitors. Five respondents had used one visitor, four had used two visitors, three had used three visitors, one had used four visitors, one had used five visitors, three had used six visitors, and one had used seven visitors. In other words, 18 respondents were making some use of community visitors in the classroom. Respondents were also asked if this number had increased due to involvement with career education. Nineteen reported that the number had not increased. This number obviously includes some people who had made use of visitors in the classroom prior to the career education project, perhaps some of those who reported that they have been carrying out career education activities for years. Nine respondents indicated that they had increased their use of visitors in the classroom as a result of career education. In other words, as a result of the career education project, about a third of the respondents have made greater use of community visitors. This question does not touch on the ways in which these visitors were used. For example, even those who report no increase in the number of visitors to the classroom may be placing greater emphasis on the career education aspects of a particular visit.

Respondents were also asked how many times their classes had made trips to observe work being performed. Seven people reported that they had made no trips. Five reported that they had made one trip, three reported that they had made two trips, eight reported that they made three trips, four reported that they had made four trips, and two reported that they had made five trips. In other words, 22 respondents had taken classes on some trips out into the community. Respondents were also asked whether this number had increased as a result of career education. Twenty-three respondents reported that the number of trips had not increased. Six

reported that they had taken classes on an increased number of trips. Field trips have always been a part of the elementary school curriculum. Career education has increased that number somewhat. Once again, however, no information was collected on the way in which these trips are presented to students, or in the follow-up activities used with them. Although some increase in number of trips has occurred it is likely that a greater impact of the career education project has been that more of the trips are career education related and that more emphasis is place upon the various jobs observed.

The final area of outcomes which the career education project has attempted to effect, is the area of teacher attitudes toward career education. Several past evaluation efforts have surveyed attitudes toward career education generally. In this questionnaire, relating more specifically to classroom practice, school staff were asked whether they agreed that courses in their own grade or subject areas would be more meaningful and relevant if focused around career objectives. Fifteen respondents expressed no opinion on this question, seven disagreed, 10 agreed, and one strongly agreed. In other words, 11 respondents believe that courses in their own grade or subject areas would be more meaningful and relevant if focused around career objectives. On the whole then, in terms of their own teaching area, 24 respondents are positive or neutral toward career education. This is important because previous attitude surveys have indicated that even those school staff favorable toward career education in general, tend to be somewhat less enthusiastic when asked about its application to their own immediate subject or grade area. And it is only when teachers are prepared to apply their favorable attitudes that career education will occur.

Summary

Most of the respondents to this questionnaire were elementary classroom teachers, either from self-contained classrooms or from teams serving multi-age groupings. They cover a variety of grade levels and teach a range of elementary subjects to their students. Five other school staff members including special teachers and a principal are among the respondents. A large proportion of the respondents report that they have participated in training and have received information on a broad range of useful topics. All but one report an understanding of an appropriate role he or she can play in career education. Most report that they gained this understanding through individual conferences with project staff members or through group training sessions. A large proportion of respondents report at least some familiarity with the objectives of the career education program. Most are either positive or neutral about the extent to which the program objectives fit with the existing curriculum. Most of the staff report that a variety of materials are available to them and that they understand where to obtain these materials. A large proportion report that they are aware that a variety of support services are available to them from the career education project staff. The staff has apparently been flexible in meeting the specific needs of individual teachers. Respondents found it more difficult to estimate how many hours per week the project staff were available if requested. All but one did indicate, however, that they were aware that help was available.

Responses indicate that all but three individuals are currently using career education activities or lessons in their classrooms. One of the

three who does not is a school principal who of course does not work directly with students. The others indicate that although career education information is mentioned, no formal use is made of the subject. All of those carrying out career education activities indicate that they devote five or less hours per week to this subject. This report seems lower than project staff observations or the reports of principals in the past. This may be true because teachers infuse career education in all lessons but report only the hours devoted to special activities such as field trips or speakers. Or, teachers, may infuse career education only in one subject such as social studies and they report only the hours spent on those lessons each week. Further exploration of this question would be necessary to fully understand the topic.

Respondents were asked about their use of classroom visitors and trips to job sites. They report that fairly extensive use is made of these techniques, although they have traditionally used trips and speakers in the past and this does not represent a large increase. Further attention will also be paid in future reports to the use made of these trips and speakers.

Finally, respondents were asked whether they agreed that courses in their own grade or subject areas would be more meaningful and relevant if focused around career objectives. Eleven agreed, 15 were neutral, and seven disagreed. This represents a somewhat favorable attitude toward using career education in their own classrooms, but project staff may wish to spend further time in this area.

On the whole, school staff have been aware of the many services and resources available in career education and have made fairly extensive

use of them. Further exploration is necessary to adequately report on the amount of time each teacher spends on career education in the classroom. Clearly the project staff have been quite effective in reaching teachers in the pilot schools.

EXHIBIT B

MAIL SURVEY QUESTIONNAIRE USED IN

ASSESSING TEACHER EXPOSURE TO AND USE OF CAREER EDUCATION

POLICY STUDIES IN EDUCATION

52 VANDERBILT AVENUE • NEW YORK, N.Y. 10017 • 212 • 684 • 6940

TO: All Teachers, Guidance Counselors, and Librarians in the Yonkers Career Education Pilot Schools

FROM: Carol B. Aslanian & Laurel J. Spak
Policy Studies in Education

RE: Questionnaire about the Career Education Program In Your School

DATE: December 19, 1974

We are working with the Yonkers Career Education Project Staff as they plan activities for the remainder of the year. Your answers about career education in your school will help the Project to serve you and your students better throughout the year.

We ask that you take fifteen minutes or so to complete the attached questionnaire. When you have completed the questionnaire, return it to Policy Studies in Education in the stamped addressed envelope which we have attached.

We know this is a busy time of year, but we would appreciate the return of the questionnaire as soon as possible. Please, not later than Friday, January 10, 1975. If you have any questions, please contact Ms. Spak at (212) 684-6940.

Thank you for your cooperation.

POLICY STUDIES IN EDUCATION
52 VANDERBILT AVENUE • NEW YORK, N.Y. 10017

QUESTIONNAIRE ON CAREER EDUCATION IN YONKERS

1. What is your name? (please print)

   _____ _____

2. In which school do you teach? (circle one)

   19 26 27 32

3. Circle all the grades you are currently teaching. (If you teach ungraded classes, circle the grades corresponding to the ages of your students.)

   Pre-K K 1 2 3 4 5 6

4. Circle all the subjects you are currently teaching. If you teach in an elementary self-contained classroom, do not circle any other subjects unless you serve as a specialist in a particular area. If you are a librarian or guidance counselor, circle the appropriate answer.

   Elementary Self-Contained Classroom
   Art
   Guidance Counselor
   Language Arts/Reading
   Librarian
   Mathematics
   Music
   Physical Education
   Science
   Social Studies
   Special Education
   Other (please specify) _____

5. When did you begin using career education activities or lessons with students. (check one)

   _____ I do not use career education activities or lessons with students
   _____ I began using career education since September 1, 1974
   _____ I began using career education between September 1973 and September 1974
   _____ I began using career education before September 1973

6. About how many hours per week do you carry out career education activities with students? (check one)

_____ none
_____ less than 3 hours
_____ 3 - 5 hours
_____ 6 - 10 hours
_____ 11 - 20 hours
_____ more than 20 hours

7. Since September 1, 1973 how many people visited your classroom to talk about their jobs and the kind of work they do? For example, a businessman, mechanic, dietician, or lawyer. (check one)

_____ I am not a classroom teacher
_____ None
_____ 1
_____ 2
_____ 3
_____ 4
_____ 5
_____ 6
_____ 7

8. Has this number increased due to your involvement with career education? (For example, if you taught in previous years, did you use fewer speakers then than you do since you began using career education?) (check one)

_____ yes
_____ no

9. Since September 1, 1973, how many trips did your class(es) make to observe work being performed? For example, places where goods were sold, products were made, and services were provided, such as a department store, a manufacturing plant, or a bank.

_____ I am not a classroom teacher
_____ None
_____ 1
_____ 2
_____ 3
_____ 4
_____ 5
_____ 6
_____ 7
_____ More than 7

10. Has this number increased due to your involvement with career education? (check one)

_____ yes
_____ no

11. Were students in your class tested during the fall of 1974 as part of the evaluation of the career education program? (check one)

_____ yes
_____ no

12. Have you participated in in-service or other training in career education since September 1, 1973? (check one)

_____ yes
_____ no

13. If you participated in any career education training sessions, what information was included? (check as many as apply)

_____ did not participate
_____ orientation to career education
_____ information about the world of work
_____ instructional objectives of the career education program in your school system
_____ instructional materials available in career education
_____ curriculum development in career education
_____ how to select instructional materials in career education
_____ teaching methods in career education
_____ use of media in career education
_____ career guidance activities
_____ your role in career education
_____ role of other school staff in career education
_____ other (please specify) _____

14. As you understand it, which of these are part of your role in the career education program? (check as many as apply)

_____ uncertain what my role is
_____ have no role
_____ teach existing career education units or lessons or materials
_____ teach other career education lessons you have created yourself
_____ use community speakers in classroom instruction
_____ take students on trips to job sites
_____ carry out career guidance activities
_____ develop career education instructional materials
_____ review and select from existing career education materials
_____ participate in planning career education for your school or other schools in your system
_____ assist teachers in your school or school system in career education
_____ other (please specify) _____

15. What was the most important in helping you understand your role? (check one)

_____ no help was available
_____ group training sessions
_____ individual meetings with career education project staff
_____ your school principal
_____ other teachers in your school or school system
_____ books and other printed materials
_____ other (please specify) _____

16. How familiar are you with the career education program's instructional objectives for the students you teach? (check one)

_____ very familiar
_____ somewhat familiar
_____ no opinion
_____ somewhat unfamiliar
_____ very unfamiliar

17. How well do the career education instructional objectives fit with the curriculum you teach? (check one)

_____ very well
_____ well
_____ no opinion
_____ poorly
_____ very poorly

18. What kinds of career education materials and resources are available to you? (check one)

_____ none
_____ list of instructional objectives
_____ curriculum guides
_____ individual career education lessons
_____ audio-visual products
_____ bibliographies of career education materials
_____ catalogs of community speakers
_____ catalogs of community trips
_____ student materials, books, and games
_____ newsletters about career education throughout the school system
_____ student assembly programs in career education
_____ other (please specify)

19. Where are career education instructional materials available in your school system? (check as many as apply)

_____ uncertain
_____ none are available
_____ available upon request from the career education project staff or other central source
_____ available in your building library
_____ placed permanently in your classroom

20. Which of the following support services have been available from someone else to assist you in career education? (check as many as apply)

_____ uncertain
_____ none
_____ make arrangements for career education speakers
_____ make arrangements for career education trips
_____ assist in planning career education activities
_____ locate and obtain career education instructional materials
_____ teach career education in your classroom
_____ assist in teaching career education materials
_____ help teachers develop career education materials
_____ accompany your class on career education trips
_____ other (please specify) _____

21. On the average, during the last year or so, how many hours per month was a career education project staff member available to assist you (either available in your building, or able to come to your building if requested)? (check one)

_____ uncertain
_____ no one available to you
_____ 1 or less
_____ 2 - 4
_____ 5 - 8
_____ 9 - 15
_____ 16 - 25
_____ 26 - 50
_____ over 50

22. Do you agree that courses in your grade or subject area(s) would be more meaningful and relevant if focused around career objectives?

_____ strongly agree
_____ agree
_____ no opinion
_____ disagree
_____ strongly disagree

23. What additional comments can you offer regarding career education?

_____

_____

_____

_____

_____

_____

Measuring Program Impact on Pupil Performance

The ultimate goal of any innovative educational program is to effect the performance of its primary target, the student. During its first year of operation, 1973-1974, the Yonkers School District Career Education Project focused its activities on orienting and preparing teachers to accept and employ career education techniques and materials. These activities are described earlier in the report. Earlier sections also describe favorable community attitudes toward career education, the increased knowledge and more positive attitude demonstrated by teachers who were involved in in-service sessions, and awareness and use of career education by teachers in the pilot schools.

In its second year of operation, the Yonkers staff expected that students would begin to benefit from these changes in teacher attitude and knowledge and from the many materials available in the district. Therefore, PSE designed a plan to measure the program's impact on pupil performance. A pre-post experimental/control group evaluation design was chosen to accomplish this objective. The procedures used, the findings, and the conclusions are described below.

Procedures

The procedures used in sample selection, instrument development, administration, and data analysis are described in this section of the report.

Sample Selection. As described earlier in this report, the efforts of the project staff were directed toward four pilot elementary schools in the district. Within these school buildings the staff concentrated

its efforts on all teachers equally (grades K-5 or K-6 depending upon the make-up of the building). As this was the case, it was determined that a measure of pupil performance for students in grades 1, 3, and 5 would represent a fair measure of the program. Thus, students in grades 1, 3, and 5 in the pilot schools were eligible as experimental group subjects in this study.

PSE then sought control group subjects. We used the following method to select four schools, one matched to each of the experimental schools. We obtained student achievement, size, and ethnic data for all 34 elementary schools in the Yonkers School District. The indicators obtained were:

1. Median percentile scores on the Metropolitan Achievement Tests for Reading and Mathematics for Grade 3 by School for the years 1971, 1972, and 1973.
2. Total student enrollment for 1973.
3. Percent white, also for 1973.

Using these data, we selected four schools which presented the best match to the four pilot schools. See Table 3 for data on these schools. Both experimental and control schools were assigned codes to preserve confidentiality. A, B, C, and D are experimental schools. AA, BB, CC, and DD are the matching control schools. An examination of Table 3 reveals that, in addition to being the best match available in the district, each of the four schools chosen is indeed comparable to one of the four pilot schools. Students in grades 1, 3, and 5 in these four schools were eligible as control group subjects in this study.

For reasons of economy and convenience, total classrooms of students were selected for the sample rather than individuals. In this way, there

Table 3

Student Achievement Size and Ethnic Data
for Matched Experimental and Control Schools

			Exper. School A*	Control School AA*	Exper. School B*	Control School BB*	Exper. School C*	Control School CC*	Exper. School D*	Control School DD*
Median Percentile Scores on the Metropolitan Achievement Tests for Reading and Mathematics for Grade Three by School		Year								
	Reading	1971	18	14	65	76	61	58	58	64
		1972	25	25	66	68	55	60	65	64
		1973	14	9	73	68	63	66	68	64
	Mathematics	1971	19	18	72	72	63	58	53	62
		1972	21	25	69	69	61	59	64	63
		1973	11	17	77	64	46	56	73	62
Total Student Enrollment		1973	274	310	457	369	341	506	347	396
Percent White		1973	18	17	84	96	86	98	96	98

*Both Experimental and Control Schools were assigned codes to preserve confidentiality.

was no need to take children out of the classroom or to inconvenience the teacher by separating individuals within her classroom. The project staff had begun to develop a good relationship with teachers in the pilot schools and we did not want to strain this relationship. In addition, teachers in the control schools were kind enough to cooperate and we wished to interfere as little as possible with their teaching schedules.

PSE had originally proposed to select a 25 percent sample of pilot school students at the three grade levels. We later decided to aim for a larger number of students for purposes of analysis. We decided to select four experimental and four control classrooms in grades 5 and 3. Because first grade classes tend to be smaller, we decided to select five experimental and five control first grade classrooms.

Lists were compiled of the names of teachers of all classrooms in grades 1, 3, and 5 in experimental schools and in grades 1, 3, and 5 in control schools. Experimental schools contained nine first grades, nine third grades, and eight fifth grades. Control schools contained ten first grades, nine third grades, and nine fifth grades. From these lists, PSE randomly selected the required number of classrooms. Students in these classrooms became the experimental and control subjects for this study.

Instrument Development. The Yonkers project staff developed desired student learning outcomes in career education for grades K-5 in both cognitive and affective domains of learning. They supplied PSE with a list of these outcomes and PSE created test items based upon them; that is, items constructed to measure the degree to which students have learned what was intended. Other PSE staff and consultants reviewed

the items and confirmed their relationship to the student outcomes and their appropriateness for the proposed grade level. The project staff also reviewed these items. They indicated that they felt most items were appropriate although they felt some would be too difficult for students at those grade levels.

PSE staff then pilot tested these instruments. We selected a school comparable in ability to the Yonkers citywide average, as a fair testing ground for the items. Much useful data was gathered to improve specific items. The most significant overall finding, however, was that the instruments were too easy for the intended grade levels.

PSE staff realized that it would be possible to make these items more difficult by raising vocabulary level, and so forth. We determined, however, that to increase the difficulty in a meaningful way, we needed a further specification of the student learning outcomes. Three project staff members spent several days consulting with PSE item developers to offer us further explication of the specific student learnings they felt should be achieved by pilot school students within each of the desired student learning outcomes they had developed. The result was that each testing instrument was made more challenging in a meaningful way; that is, questions were more difficult because they required a greater knowledge of career education, rather than because of an increased vocabulary level or "trick" questions.

A second pilot test was then conducted and the instruments were found to be sufficiently difficult to allow room to reveal student learning between the pre and posttests. The final instruments were then printed. These instruments appear in Exhibits C, D, and E at the end

of this section.

PSE staff also developed a Teacher Questionnaire for use in this study. The questionnaire asked teachers to identify each student by name and to provide demographic data for each student. The questionnaire also included ten items about the respondent's teaching experience and his or her use of career education, if any. This information was requested to provide a context for the findings of the study. A copy of the instrument appears as Exhibit F at the end of this section.

Administration. The PSE staff administered all tests. Each took about 30-40 minutes to administer. The directions, and all questions and answers were read out loud at all grade levels to minimize differences due to reading ability.

All arrangements with teachers were made in advance. In order that teachers would not have knowledge of test content prior to the posttest, they were not permitted to remain in the classroom when the pretest was administered. At the time of the administration of the posttest, teachers were asked to complete the Teacher Questionnaire.

Data Analysis. As a first step in analyzing the data, PSE staff matched pre and posttests for each student, using the student name which appeared on the test. We eliminated responses from students who had not completed both a pre and posttest. Therefore, all data analysis was conducted on repeated measures of the same individuals.

Next, PSE staff compared the experimental and control groups at each grade level on the variables of age, sex, and race. This information was available on the Teacher Questionnaire by student's name, and once again, data was used only from those individuals who had completed

both a pre and posttest, As the pre and posttest groups were identical, the characteristics of age, sex, and race remained constant. The age of the experimental and control groups was compared by establishing a mean age in months for students in each group and applying a t test for the difference between two means. The experimental and control groups were compared on sex by establishing the percent female in each group and applying a t test for the difference between two proportions. The experimental and control groups were compared on race by establishing the percent white students in each group and applying a t test for the difference between two proportions.

On the responses to the cognitive portion of the test, PSE compared the experimental to the control group scores for the pretest and also compared the experimental to the control group scores for the posttest. The first step was to compare an overall cognitive score. PSE did this by applying a t test for the difference between two proportions to compare the mean correct responses for the average item. This was done in the following way. The total number of correct responses for all items for an entire group was divided by the number of respondents in that group to establish the mean number of correct responses for an average item. This value for the experimental group was then compared to the value found for the control group to compare overall cognitive ability displayed on the pretest. The same operation was then carried out for the posttest.

No overall comparison was made of scores on the affective portion of the test, as there are no correct or incorrect answers to these items and it is not possible to establish an overall score on the affective

portion of the test. Instead, PSE did an item-by-item analysis using a t test for the difference between two proportions. We compared the percent of the experimental group agreeing with a particular statement in the pretest to the percent of that group agreeing in the posttest, and did the same for the control group. This was repeated for those disagreeing.

Finally, PSE examined responses from the teachers of the experimental and control group students. We looked at their answers regarding their own teaching experience and their use of career education in order to establish a context for the findings.

Findings

The findings of the study are discussed below by grade level. For each grade level the response rate and findings on student characteristics and cognitive and affective information are reported. Classroom teacher reports on teaching experience and use of career education are also discussed for each grade level.

Grade One. In the administration of the student test to first graders, 92 experimental group students and 70 control group students completed both a pre and posttest. Findings reported below are from these two groups.

The experimental and control groups were compared on the basis of student characteristics of age, sex, and race. Findings appear in Table 4. The two groups were not significantly different in age or in sex, but the experimental group contained significantly more white students. As discussed under Sample Selection, the groups were selected from schools representing the best match available in the district, but apparently still contained some difference in racial composition.

Table 4

Grade 1
Characteristics

	Exper. Group	Control Group	t Value*
AGE: Mean age in months	78.6	79.8	N.S.
SEX: Percent female	51%	51%	N.S.
RACE: Percent white	86%	61%	3.67

Table 5

Grade 1
Overall Score on Cognitive Items

	Exper. Group	Control Group	t Value*
PRETEST: Mean correct responses for average item	62%	58%	N.S.
POSTTEST: Mean correct responses for average item	72%	62%	N.S.

*Any value over 1.96 is significant at the .05 level of confidence.
N.S. = Not Significant.

PSE staff then examined the cognitive items on the test. We looked first at pretest findings. The level of difficulty of the pretest seemed appropriate. Among program students for example, the mean score was 62 percent correct, with items ranging from 2 percent correct on the most difficult to 89 percent correct on the least difficult. We then did an overall analysis of the cognitive portion of the test. For the pretest we compared the experimental and control groups based upon the mean number of correct responses for an average item. Findings appear in Table 5. We found no significant difference between the experimental and control groups at the time of the pretest. This would tend to indicate that the samples selected were comparable in cognitive knowledge of career education at the time of the pretest, despite the significant difference in racial composition of the two groups.

We then compared the two groups on the mean number of correct responses for an average item in the posttest. Once again, there was no significant difference between the groups. This would indicate that at the time of the posttest, experimental and control groups both had equal cognitive knowledge of career education.

PSE then analyzed each of the individual affective items to detect any changes in attitude on the part of either the experimental or control groups. In each case we used a t test for proportions to compare the percent of the experimental group agreeing with a particular statement in the pretest to the percent of that group agreeing in the posttest, and did the same for the control group. This was repeated for those disagreeing.

The experimental group revealed a significant change in attitude on five of the affective items. These are displayed in Table 6.

Table 6

Grade 1
Experimental Group Responses to Affective Items

Statement	% Yes Pretest	% Yes Posttest	t Value*
Do you think you will like working when you grow up?	71	94	4.04
Do you like to look at books about the work people do?	73	87	2.37
• Are you too young to think about what you want to do when you grow up?	19	35	-2.42
• Can you only really like people who are the same as you?	33	13	-3.21
• Is getting a job and working at it the only way to learn about the job?	46	65	2.57

*Any value over 1.96 is significant at the .05 level of confidence. A positive value indicates that the number of students responding "yes" to the statement was larger in the posttest than in the pretest. A negative value indicates that the number was smaller in the posttest.

•A significant difference in attitude occurred on this item for both the control and experimental group.

Where a change was apparent in the percent "yes", we have not reported on the percent "no". On the whole, their shifts in attitude are favorable. At the time of the posttest, more students thought they would like working when they grew up and more like to look at books about the work people do. On the other hand, fewer first graders thought that they were too young to think about what they wanted to do when they grew up or that they could only really like people who were the same as themsleves. These are all attitudes fostered by career education.

By the end of the year, more first graders did say that they believed that the only way to learn about a job was to get the job and work at it. This change in attitude may have occurred due to the emphasis career education places upon observing people at real jobs, speaking to workers about their jobs, and trying out real tools.

The control group students in the first grade showed a change in attitude on five items also. These findings appear in Table 7.

At the end of the year, significantly fewer students felt that teachers told them a lot about jobs in school. This seems to indicate that in the first few weeks of first grade, a majority of students felt that teachers were telling them a lot about jobs in school, but that by the end of the school year, many of them no longer believed this to be true. By the time of the posttest, fewer first grade control group students believed that their families could teach them everything they needed to know about jobs, that they were too young to think about what they wanted to do when they grew up, and that they could only really like people who are the same as themselves. All of these changes in attitude would be considered favorable to career education. Unlike the experi-

Table 7

Grade 1
Control Group Responses to Affective Items

Statement	% Yes Pretest	% Yes Posttest	t Value*
Do your teachers tell you a lot about jobs in school?	71	50	-2.53
Can your family teach you everything you need to know about jobs?	67	49	-2.14
•Are you too young to think a about what you want to do when you grow up?	50	24	-3.17
•Can you only really like people who are the same as you?	66	37	-3.41
•Is getting a job and working at it the only way to learn about the job?	86	73	-2.03

*Any value over 1.96 is significant at the .05 level of confidence. A positive value indicates that the number of students responding "yes" to the statement was larger in the posttest than in the pretest. A negative value indicates that the number was smaller in the posttest.

•A significant difference in attitude occurred on this item for both the control and experimental group.

mental group students, fewer of the control group students believed that getting a job and working at it was the only way to learn about the job. This may indicate that control group students had received less emphasis on observing people at their work and using real tools.

In all then, first grade control group students revealed shifts in attitude which were favorable toward career education, but, at the time of the posttest, fewer students believed that teachers told them a lot about jobs.

Finally, PSE staff examined the teacher responses regarding teacher experience and use of career education. All five teachers of experimental group students and all five teachers of control group students completed the Teacher Questionnaire. Experimental and control group teachers reported comparable years of teaching experience and comparable levels of education. All teachers in both groups were white.

Teachers were asked about how many hours per week they carried out career education activities with students. Their responses to this question may do much to explain the lack of significant differences between groups on the cognitive portion of the test as well as the attitude changes favorable toward career education displayed by the control group students. Three out of four experimental group teachers reported that they carried out career education activities less than three hours per week; one that he carried out career education activities for 11-20; and one did not respond. Among control group teachers, four out of five report that they carry out career education activities for less than three hours per week with their students. Only one teacher reported no career education activities at all. In other words, four out of five

control group teachers spent as much time on career education activities as three out of the four experimental group teachers responding to this question. Only one experimental group teacher spends more hours on career education.

A comparison of teacher responses on other items tends to reveal similar career education interests and efforts on the part of control group teachers as well as experimental group teachers. Only two experimental group teachers participated in in-service training of some type and they reported a total of ten areas in which they received training. On the other hand, one of the control group teachers also received some training in career education although this was primarily in the area of orientation. Only four out of five experimental teachers used career education materials this year, although these indicated that they used ten different types of materials. However, all of the control group teachers reported using some types of materials and resources this year and listed seven different types of materials used. It is apparent that the project staff efforts have reached beyond the four pilot schools and in some cases have apparently reached control group teachers. Although project staff were available to provide support services for teachers, and teachers did indeed report using five different types of services, all but one control group teacher also reported receiving some support services.

While all experimental teachers reported making 2-4 class trips and all but one had but 2-7 speakers, all but one control group teacher reported taking 1-4 trips. Only one made use of any speakers.

Finally, while two experimental teachers reported that they began

using career education before September, 1973, and two began during the '73-'74 school year (one did not respond), three out of four control group teachers report that they began using career education activities before 1973, and one began in September, 1974.

Given these reports by teachers, it is not surprising that there is no significant difference between experimental and control group students. The project staff have, if anything, done too thorough a job of reaching teachers in the district. It is apparent that even though they were unable to be present to work in the non-pilot schools until the very end of the project, their efforts were felt throughout the district and many teachers in non-pilot schools, including our control group teachers, responded to their efforts. In addition, it seems likely, given the date that career education activities began, that many teachers, whether experimental or control, initially began career education activities on their own. Their enthusiasm for the subject has, no doubt, communicated itself to their students.

Grade Three. In the administration of the student tests to third graders, 73 experimental group students and 93 control group students completed both a pre and posttest. Findings reported below are from these two groups.

The experimental and the control groups were compared on the basis of student characteristics of age, sex, and race. Findings appear in Table 8. The two groups were not significantly different on any of these characteristics.

PSE staff then examined the cognitive items on the test. We first looked at pretest findings. The level of difficulty of the pretest seemed

Table 8

Grade 3
Characteristics

	Exper. Group	Control Group	t Value*
AGE: Mean age in months	103.3	102.5	N.S.
SEX: Percent Female	45%	56%	N.S.
RACE: Percent White	66%	74%	N.S.

Table 9

Grade 3
Overall Score on Cognitive Items

	Exper. Group	Control Group	t Value*
PRETEST: Mean correct responses for average item	50%	51%	N.S.
POSTTEST: Mean correct responses for average item	57%	60%	N.S.

*Any value over 1.96 is significant at the .05 level of confidence.
N.S. = Not Significant.

appropriate. Among program students, for example, the mean score was 50 percent correct, with items ranging from 10 percent correct on the most difficult to 75 percent correct on the least difficult. We then did an overall analysis of the cognitive portion of the test. For the pretest we compared the experimental and control groups based upon the mean number of correct responses for an average item. Findings appear in Table 9. We found no significant difference between the experimental and control groups at the time of the pretests. This indicates that the sample selected was comparable in cognitive knowledge of career education at the time of the pretest.

We then compared the two groups on the mean number of correct responses for an average item in the posttest. Once again, there was no significant difference between the groups. This would indicate that at the time of the posttest, the experimental and control groups both had equal cognitive knowledge of career education.

PSE then analyzed each of the individual affective items to detect any changes in attitude on the part of either group. In each case we used a t test for proportions to compare the percent of the experimental group agreeing with a particular statement in the pretest to the percent of that group agreeing in the posttest and did the same for the control group. This was repeated for those disagreeing.

The experimental group showed a change in attitude on only two items. These appear in Table 10. In each of these cases, there was no significant change in the percent of the group responding "yes", but in each case a significantly greater number disagreed with the statement at the time of the posttest. In other words, at the time of the posttest, more students

Table 10

Grade 3
Experimental Group Responses to Affective Items

Statement	Exper. Group	Control Group	t Value**
•Important things can only be learned in school.	36	60	2.93
People who are going to college don't have to think about jobs until they get to college.	25	48	2.91

**Any value over 1.96 is significant at the .05 level of confidence. A positive value indicates that the number of students responding "no" to the statement was larger in the posttest than in the pretest. A negative value indicates that the number was smaller in the posttest.

•A significant difference in attitude occurred on this item for both the control and experimental groups.

disagreed that important things can only be learned in school and that college-bound people don't have to think about jobs until they get to college. Both of these would be changes in attitude favorable to career education.

The control group showed significant changes in attitude on 7 items. These appear in Table 11. Significantly fewer students said "yes" on 6 of the items at the time of the posttest. Fewer students agreed that they were too young to think about what they wanted to do when they grew up, that important things could only be learned in school, that once you have a job you don't have to make anymore career decisions, and that jobs at high pay are more important than jobs at low pay. Each of these four changes in attitude would be considered favorable to career education. At the time of the posttest fewer control group students agreed, also, that what their friends think is bad is sometimes different from what their parents think is bad and that they could do some school subjects better than their classmates. On these two items, career education would tend to encourage students to understand differences both between friends and parents and between classmates. On one final items fewer control group students responded "no" at the time of the posttest. Apparently, regarding whether or not teachers tell students a lot about jobs, more control group students said their teachers did not at the beginning of the year than at the end. Their experiences during the year seemed to have led many students to feel that teachers tell them a lot about jobs or have led them to be uncertain.

In all then, third grade experimental group students showed attitude changes on only two items, and in each of these the changes occurred in

Table 11

Grade 3
Control Group Responses to Affective Items

Statement	% Yes Pretest	% Yes Posttest	t Value*
I am too young to think about what I want to do when I grow up.	44	26	-2.57
•Important things can only be learned in school.	32	14	-2.90
Once you have a job you don't have to make any more career decisions.	30	13	-2.79
Jobs with high pay are more important than jobs with low pay.	50	26	-3.33
What my friends think is bad is sometimes different from what my parent think is bad.	68	51	-2.33
I can do some school subjects better than my classmates	68	32	-4.86

Statement	% No Pretest	% No Posttest	t Value**
Teachers tell us a lot about jobs.	67	40	-3.65

*Any value over 1.96 is significant at the .05 level of confidence. A positive value indicates that the number of students responding "yes" to the statement was larger in the posttest than in the pretest. A negative value indicates that the number was smaller in the posttest.

**Any value over 1.96 is significant at the .05 level of confidence. A positive value indicates that the number of students responding "no" to the statement was larger in the posttest than in the pretest. A negative value indicates that the number was smaller in the posttest.

•A significant difference in attitude occurred on this item for both the control and experimental groups.

the number of students disagreeing with the item. Among control group students, more shift in attitude occurred, most of these in a direction favorable to career education.

Finally, PSE staff examined the teacher responses regarding teacher experience and use of career education. All four teachers of experimental group students and all four teachers of control group students completed the Teacher Questionnaire. Experimental and control group teachers reported comparable years of teaching experience and comparable levels of education. All teachers in both groups were white.

Teachers were asked about how many hours per week they carried out career education activities with students. The responses to this question, as was the case with first graders, may do much to explain the lack of significant differences between the groups on the cognitive portion of the test as well as the attitude changes favorable toward career education displayed by the control group students. Three out of four experimental teachers reported that they carried out career education activities less than three hours per week and one was unable to commit himself to a set number, stating that the number of hours varied every week. Among control group teachers, three out of four also reported that they carried out career education activities for less than three hours per week with their students. Only one teacher reported no career education activities at all. In other words, three out of four control group teachers spend as much time on career education activities as three out of four experimental group teachers responding to this question. Only one experimental group teacher may or may not spend more hours on career education.

As was true at the first grade level, a comparison of teacher responses on other items tends to reveal similar career education interests and efforts on the part of control group teachers as well as experimental group teachers. Although three out of four experimental group teachers have participated in in-service or other training in career education and have received training in seven different areas, while control group teachers have received no training, experimental teachers report only using seven different types of career education materials and resources while three out of four control group teachers have reported using a total of eight different kinds of career education materials and resources. As was true at the first grade level, it seems that project staff efforts have reached beyond the four pilot schools to control group teachers. Only one of the experimental teachers used support services provided by the project staff; two out of four control group teachers have also received support services.

Only one experimental teacher reported using any classroom speakers for career education and only one reported making any class trips for career education. Among control group teachers on the other hand, three out of four have had classroom speakers who spoke about their jobs and all four have taken class trips to observe work being performed.

Finally, while two experimental teachers reported that they began using career education activities or lessons with students before September, 1973, and two began between September, 1973, and September, 1974, the three out of four control group teachers who used career education began before September, 1973.

Given these reports by teachers, it is not surprising that there is

no significant difference between experimental and control group students. It seems likely, given the date that career education activities began, that both experimental and control group teachers initially began career education activities on their own. It also seems likely that project staff efforts were felt throughout the district even though the staff were unable to work in non-pilot schools themselves until late in the project.

Grade Five. In the administration of the student tests to fifth graders, 82 experimental group students and 98 control group students completed both a pre and posttest. Findings reported below are from these two groups.

The experimental and control groups were compared on the basis of student characteristics of age, sex, and race. Findings appear in Table 12. The two groups were not significantly different in age or in sex, but the control group contained significantly more white students. This is the opposite of the first grade in which the experimental group contained significantly more white students. As discussed under Sample Selection, the groups were selected from schools representing the best match available in the district, but apparently still contained some differences in racial composition.

PSE staff then examined the cognitive items on the test. We looked first at pretest findings. The level of difficulty of the pretest seemed appropriate. Among program students, for example, the mean score was 50% correct, with items ranging from 21% correct on the most difficult to 83% correct on the least difficult. We then did an overall analysis of the cognitive portion of the test. For the pretest we compared the

Table 12

Grade 5
Characteristics

	Exper. Group	Control Group	t Value*
AGE: Mean age in months	127.8	126.8	N.S.
SEX: Percent female	45%	53%	N.S.
RACE: Percent white	81%	98%	3.82*

Table 13

Grade 5
Overall Score on Cognitive Items

	Exper. Group	Control Group	t Value*
PRETEST: Mean correct responses for average item	50%	52%	N.S.
POSTTEST: Mean correct responses for average item	54%	64%	N.S.

*Any value over 1.96 is significant at the .05 level of confidence. A positive value indicates that the number of students responding "yes" to the statement was larger in the posttest than in the pretest. A negative value indicates that the number was smaller in the posttest.

N.S. = Not Significant

experimental and control groups based upon the mean number of correct responses for an average item. Findings appear in Table 13. We found no significant difference between the experimental and control groups at the time of the pretest. This would tend to indicate that the samples selected were comparable in cognitive knowledge of career education at the time of the pretest, despite the significant difference in racial composition of the two groups.

We then compared the two groups on the mean number of correct responses for an average item in the posttest. Once again, there was no significant difference between the groups. This would indicate that at the time of the posttest, the experimental and control groups both had equal cognitive knowledge of career education.

PSE then analyzed each of the individual affective items to detect any changes in attitude on the part of either group. In each case we used a t test for proportions to compare the percent of the experimental group agreeing with a particular statement in the pretest to the percent of that group agreeing in the posttest, and did the same for the control group. This was repeated for those disagreeing.

The experimental group revealed a significant change in attitude on 14 of the affective items. These are displayed in Table 14. Where a change was apparent in the percent "yes", we have not reported on the percent "no". It is difficult to understand these shifts in attitude. One is very clearly favorable to the program. At the time of the posttest, significantly more students agreed that students should be taught about jobs in school. Most of the results, however, were unfavorable to career education. Some of these were very confusing. For example,

Table 14

Grade 5
Experimental Group Responses to Affective Items

Statement	% Yes Pretest	% Yes Posttest	t Value*
Students should be taught about jobs in school.	52	70	2.37
I have thought about the kind of job I might have after I leave school.	85	50	-4.86
Teachers tell us a lot about jobs.	55	31	-2.60
I like to read about the work people do.	61	43	-2.34
What my friends think is bad is sometimes different from what my parents think is bad.	79	43	-4.74
I can do some school subjects better than my classmates.	85	40	-6.00
I think I will like working when I grow up.	73	37	-5.19
I am too young to think about what I want to do when I grow up.	34	15	-2.69

*Any value over 1.96 is significant at the .05 level of confidence. A positive value indicates that the number of students responding "yes" to the statement was larger in the posttest than in the pretest. A negative value indicates that the number was smaller in the posttest.

Table 14

Grade 5
Continued

Statement	% Yes Pretest	% Yes Posttest	t Value*
•Once you have a job you don't have to make any more career decisions.	17	49	4.38
I can only really like people who are the same as I am.	31	59	3.64
Important things can only be learned in school.	22	45	3.15
Jobs with high pay are more important than jobs with low pay.	34	57	2.99

Statement	% No Pretest	% No Posttest	t Value**
•People who are going to college don't have to think about jobs until they get to college.	34	50	2.11
The only way to learn about a job is to get the job and see what it is like.	28	44	2.16

*Any value over 1.96 is significant at the .05 level of confidence. A positive value indicates that the number of students responding "yes" to the statement was larger in the posttest than in the pretest. A negative value indicates that the number was smaller in the posttest.

**Any value over 1.96 is significant at the .05 level of confidence A positive value indicates that the number of students responding "no" to the statement was larger in the posttest than in the pretest. A negative value indicates that the number was smaller in the posttest.

•A significant difference in attitude occurred on this item for both the control and experimental groups.

at the time of the posttest fewer students said that they had given thought to the kind of job they might have after leaving school. It is difficult to understand how students who reported at the beginning of the year that they had thought about the kind of job they might have after leaving school could, by the end of the year, report that they had never thought about this topic. At the time of the posttest fewer students also agreed that teachers told them a lot about jobs, that they liked to read about the work people do, that what their friends think is bad is sometimes different from what their parents think is bad, and that they thought they would like working when they grew up. All of these statements would indicate positions favorable to career education and to the program. The fact that fewer students agreed at the end of the year would indicate that they felt less positively about the project. However, fewer students agreed that they were too young to think about what they wanted to do when they grew up at the time of the posttest.

At the time of the posttest, more program students agreed that once you have a job you don't have to make any more career decisions, you can only really like people who are the same as you are, important things can only be learned in school, and jobs with high pay are more important than jobs with low pay. Once again, none of these are statements which indicate attitudes favorable to career education or to the program. On the other hand, more students disagreed, at the time of the posttest, that the only way to learn about a job is to get the job and see what it is like, and that people who are going to college don't have to think about jobs until they get to college. Both of these attitude changes would indicate that the program has had a favorable

impact on students.

Findings on the affective portion of the test for experimental students are mixed, and indeed confusing. Attitude changes are favorable towards the program in four out of 14 cases and unfavorable in the others. Some of these shifts seem impossible, from the practical point of view, and it is therefore difficult to understand these findings.

The control group students in the fifth grade show their change in attitude in only three items. These findings appear in Table 15. At the end of the school year significantly fewer students agreed with statements that women must chose between having a job and having a family, that people who are going to college don't have to think about jobs until they get to college, and that once you have a job you don't have to make any more career decisions. These would all reveal shifts in attitude which could be favorable to career education as the project would encourage students to entertain the notion that many women with families are indeed employed, that even college-bound students should consider jobs prior to college, and that even those who are currently employed must still make career decisions. Therefore, although shifts in attitude occurred on only three of the items, attitude changes revealed by control group students tend to be favorable toward career education.

Finally, PSE examined the teacher responses regarding teacher experience and use of career education. All four teachers of experimental group students and all four teachers of control group students completed the Teacher Questionnaire. Experimental and control group teachers reported comparable years of teaching experience and comparable levels of

Table 15

Grade 5
Control Group Responses to Affective Items

Statement	% Yes Pretest	% Yes Posttest	t Value*
Women must choose between having a job and having a family.	55	33	-3.14
People who are going to college don't have to think about jobs until they get to college.	26	5	-4.20
Once you have a job you don't have to make any more career decisions	21	6	-3.06

*Any value over 1.96 is significant at the .05 level of confidence. A positive value indicates that the number of students responding "yes" to the statement was larger in the posttest than in the pretest. A negative value indicates that the number was smaller in the posttest.

of education. All teachers in both groups were white.

Teachers were asked about how many hours per week they carried out career education activities with students. Their response to this question, as was true at the first and third grade levels, may do much to explain the lack of significant differences between groups on the cognitive portion of the test as well as the attitude changes favorable toward career education displayed by the control group students. All four experimental group teachers reported that they carried out career education activities less than three hours per week. Three out of four control group teachers also reported that they spent less than three hours per week carrying out career education activities with students, although the fourth control group teacher does not carry out career education activities. In other words, three out of four control group teachers spend as much time on career education activities as do the four experimental group teachers.

A comparison of teacher responses on other items tends to reveal similar career education interests and efforts on the part of control group teachers as well as experimental group teachers. This too follows the pattern revealed by the first and third grade teachers. All four experimental teachers participated in in-service training of some type and they reported a total of 10 areas in which they received training. On the other hand, half of the control group teachers received some training in career education also and listed 8 areas in which they received training. Only three out of four experimental teachers used career education materials this year, although they indicated that they used 9 different types of materials. However, one of the control group teachers also used three different types of career education materials

and resources this year. It is apparent that project staff efforts have reached beyond the four pilot schools and in some cases have apparently reached control group teachers. It is true that three out of four experimental group teachers made use of five different types of services offered by the project staff. None of the control group teachers received any support services. On the other hand, while only three out of four experimental teachers reported making 1-4 class trips to observe work being performed and three out of four reported 1-4 classroom visitors who spoke about their jobs, one of the control group teachers reported using more than seven classroom speakers who spoke about their jobs and the kind of work they do. None of the control group classes had made any trips. Finally, three experimental teachers reported that they began using career education with their students before September, 1973; the fourth began between September, 1973, and September, 1974. However, among control group teachers, one began using career education activities before September, 1973, and two began during this year. In other words, three out of four control group teachers have had past experience with career education.

Given these reports by teachers, it is not surprising that there is no significant difference between the experimental and control group students. The project has, as stated before, probably reached teachers throughout the district including the control group teachers. In addition, several of these teachers have obviously begun using career education on their own, before the inception of the project. These factors probably explain findings on the cognitive portion of the test and favorable changes in attitude among control group students. No explanation seems

evident for the many changes in attitude on the part of experimental group students.

Conclusions

A pre-post experimental/control group evaluation design was used to measure program impact on pupil performance during the second year of project operation. Experimental and control groups were selected at the first, third, and fifth grade levels. In all three grades, experimental and control groups were found to be comparable in age and in sex. At the first and fifth grade levels, the groups were significantly different in racial composition. At the third grade they were comparable.

An analysis of the pretest responses to the cognitive items for all three grade levels indicated no significant difference despite differences in racial composition at two grade levels. An analysis of posttest responses at all three grade levels also indicated no significant difference in cognitive knowledge of career education. Experimental group students did not display greater career education knowledge than control group students as a result of their year-long involvement in the pilot schools.

Some changes in attitude were found in an item-by-item analysis of the affective portion of the test. At the first and third grade, experimental students displayed a shift in attitude which was, on the whole, favorable to career education. At the fifth grade, students displayed attitude changes on many more items and on about two thirds of these items attitude changes are unfavorable to career education or to the program. These changes are confusing as one third were favorable to the program and some of the changes seem to contradict each other.

At each grade level, control group students revealed attitude changes on a few items, usually favorable to career education.

Finally, PSE staff examined the teacher responses regarding teacher experience and use of career education. At all three grade levels, most of the control group teachers reported spending as much time on career education activities in the classroom as did the experimental group teachers. Teacher responses on other items tend to reveal similar career education interests and efforts on the part of control group teachers as well as experimental group teachers.

Although control group teachers consistently report somewhat less activity in career education than experimental group teachers, PSE's main conclusion based upon this study is that the efforts of the career education project staff have reached all teachers throughout the district to a sufficient degree that no difference can be detected between program and non-program students. Although PSE cautioned the project staff several times during this year about the possibility of contaminating the control classrooms by involving their teachers in career education activities, the decision was made in each case that spreading career education in the district was more important than isolating control classrooms. While, from a project point of view, this may have been the wiser decision, the result in terms of this study, is that no significant difference can be detected between experimental and control group students. at this time. PSE would like to also note that many of the activities which were planned to have an impact on pilot school teachers were delayed or canceled as described in earlier sections of this report. We think that this has probably somewhat lessened the impact of the project staff

upon teachers in the pilot schools and that this has further diminished the difference between the experimental and control group students.

EXHIBIT C

FIRST GRADE STUDENT TEST INSTRUMENT USED IN

MEASURING PROGRAM IMPACT ON PUPIL PERFORMANCE

POLICY STUDIES IN EDUCATION
52 VANDERBILT AVENUE • NEW YORK, N.Y. 10017 • 212 • 684 • 6940

DIRECTIONS TO ADMINISTRATOR

INTRODUCE YOURSELF TO TEACHER

INTRODUCE YOURSELF TO STUDENTS AND READ:

The people I work with are working on some materials for elementary school students. The work we are going to do is not part of your regular class work. Your answers will not be used to grade you. Your teacher will not even see them because I will take them back to my office after I collect them and we will use them there.

But, because these materials are very important, I want you to do the best job you can in answering the questions I am going to read to you. These same questions are used with students in other grades so do not worry if some seem very hard.

DOES EVERYONE HAVE A PENCIL?

I will give each of you a booklet.

Please print your name on the front page.

Put your pencil down when you have finished.

Now find the picture of the dog. Put your finger on the picture of the dog.

CHECK TO BE SURE ALL CHILDREN ARE FOLLOWING DIRECTIONS.

In the box with the dog is the word "Yes". This is what the word "Yes" looks like.

WRITE THE WORD YES ON THE BLACKBOARD.

Does everybody see the word "Yes"? Good. Next to the word "Yes" is the word "No". The word "No" looks like this.

WRITE THE WORD NO ON THE BLACKBOARD TO THE RIGHT OF THE WORD YES

Does everyone see the word "No"? Good. Remember, do not pick up your pencil until I tell you to start.

In each box on your paper are the words "Yes" and "No". I am going to read some questions out loud to you. If you think the answer to the question that I read is yes, draw an "X" over the word "Yes". If you think the answer is no, put an "X" over the word "No". Just pick the answer you think is best. Please do not say any answer out loud.

Now, let's try one. Find the box with the dog in it again. Good. Pick up your pencil. The question is "Do you go to school?" If you go to school put an "X" over the word "Yes". If you do not go to school put an "X" over the "No". Good.

Now turn the page and find the picture of the fish.

READ EACH SYMBOL AND QUESTION ALOUD TO THE STUDENTS. AFTER THEY HAVE DONE ONE OR TWO, CHECK AGAIN TO SEE IF THERE ARE ANY QUESTIONS.

)g S. Do you go to school?

Turn the page----------

lsh 1. Are you too young to think about what you want to do when you grow up?

ey 2. Should students be taught about jobs in school?

ce cream cone 3. Do you like to look at books about the work people do?

irtle 4. Can your family teach you everything you need to know about jobs?

Turn the page----------

elevision 5. Do some things happen because you make them happen?

ree 6. Is getting a job and working at it the only way to learn about the job?

raffic light 7. Do you think you will like working when you grow up?

ncil 8. Do your teachers tell you a lot about jobs in school?

Turn the page----------

icken 9. Are some things that go wrong your fault?

ell 10. Will the things you learn in school help you find a job someday?

ar 11. Is your job of going to school as important as your parents' job of earning a living?

icket 12. Can you only really like people who are the same as you?

Turn the page----------

ll 13. Do you use the things you learn in school when you are at home?

lower 14. Can you do some school work better than your classmates?

ok 15. Do you sometimes think about what job you want when you get older?

ndle 16. Are some students better at school work than others?

Turn the page----------

ɔple 17. Must all telephone operators be women?

ɾapes 18. Are there some games that can only be played with another person?

ɔrn 19. Can grownups have any job they want?

ɐar 20. Can machines do everything that people can do?

Turn the page----------

ɐaf 21. Can all children tie their own shoes?

icycle 22. Do people go into business to lose money?

ɔll 23. If two girls are the same age, can they both run at the same speed?

ɐp 24. Do students learn important things from watching television?

Turn the page----------

ɹoɐs 25. Are pencils, pens, and magic markers all tools?

ruck 26. Do you sometimes have to decide for yourself what to do?

ammer 27. Is a broom usually better for cleaning a rug than a vacuum cleaner?

ɐt 28. Is going to school and being a student a job?

Turn the page----------

poon 29. Is it true that most girls will never work?

ıʇɔɐs 30. If people work together can they usually get the job done faster?

lag 31. Is your job in your family the same as your parents' job?

irplane 32. Do only fathers have to earn money?

Turn the page----------

lobe

33. Can both men and women be airplane pilots?

arrots

34. Is the main difference between jobs the clothes people have to wear?

ail boat

35. Do you have to go to college to get a job?

oller skate

36. Can both men and women become nurses?

Turn the page----------

quirrel

37. Are some jobs done better when more than one person works at them?

arton

38. Can each person make everything he or she needs?

oney

39. Are scissors, a broom, and a cookie cutter all tools?

ouse

40. Can you learn important things from your friends?

Thank you very much. Please turn the booklet over so that your name is on top and wait until I collect them.

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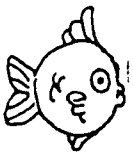
Name _____

yes no

1



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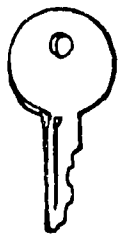
2

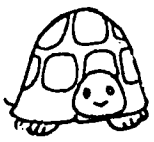


yes no

3

yes no

4



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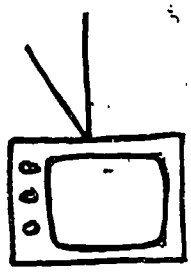

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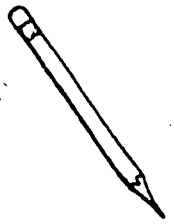
yes no

yes no



yes no

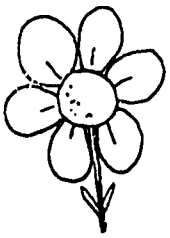
yes no

yes no

yes no

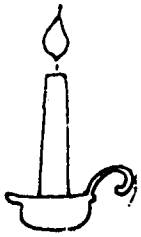
yes no

yes no



yes no

yes no



yes no

17

yes no

18

yes no

19

yes no

20

yes no

21

yes no

22

yes no

23

yes no

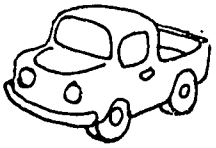
24

yes no

5

yes no

26



yes no

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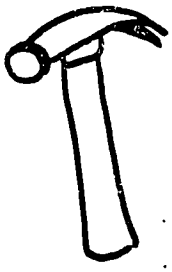


yes no

28

yes no

29

yes no

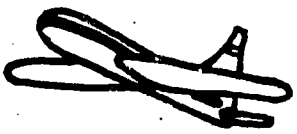
30

yes no

31

yes no

32



yes no

247

33

yes no

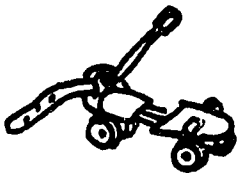
34

yes no

35

yes no

36



yes no

248

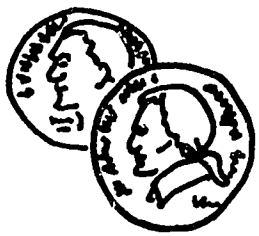
37

yes no

38

yes no

39



yes no

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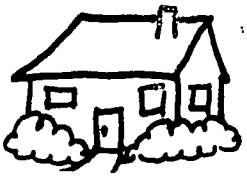

yes no

249

EXHIBIT D

THIRD GRADE STUDENT TEST INSTRUMENT USED IN

MEASURING PROGRAM IMPACT ON PUPIL PERFORMANCE

POLICY STUDIES IN EDUCATION
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DIRECTIONS TO ADMINISTRATOR

INTRODUCE YOURSELF TO TEACHER

INTRODUCE YOURSELF TO STUDENTS AND READ:

The people I work with are working on some materials for elementary school students. The work we are going to do is not part of your regular class work. Your answers will not be used to grade you. Your teacher will not even see them because I will take them back to my office after I collect them and we will use them there.

But, because of the importance of these materials, I want you to do the best job you can in answering the questions I am going to read to you. These same questions are used with students in other grades so do not be concerned if some seem very hard.

DOES EVERYONE HAVE A PENCIL?

I will give each of you a booklet. Please fill in your first and last name, your teacher's name, and your school on the first page then we will all start together.

Now put your pencil down and look at Part 1 - Directions.

POLICY STUDIES IN EDUCATION

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NAME _____

TEACHER _____

SCHOOL _____

PART 1 - DIRECTIONS:

I'll read each question out loud, then I'll read the choices. You should circle the letter next to the answer you think is best. Choose only one answer. If you change your mind or make a mistake be sure you erase or cross out the wrong answer and mark the correct one. Please don't say the answer out loud.

Here is a sample.

Which worker picks up and brings mail to people?

A. A fireman

B. A policeman

(C.) A postman

D. A teacher

A postman is the best answer, so you would draw a circle around the letter "C" as shown.

Now begin with number 1.

1. Mr. Field was a fireman, but now he is the fire chief. Mr. Field was

   A. retired

   B. promoted

   C. laid off

   D. fired

2. A school janitor or custodian and a teacher work together to

   A. order classroom books and supplies

   B. make up the day's lesson

   C. see that the classroom is clean and safe

   D. clean the principal's office

3. Which of these do you most need to use a checking account?

   A. Arithmetic

   B. Science

   C. Art

   D. Reading

4. In order to do a better job a person should

   A. tell other people what he is doing

   B. be paid in advance

   C. plan what he is going to do

   D. try to finish first

5. A cashier, a practical nurse, an assembly line worker, and a gas station attendant must all

   A. have a college degree

   B. have some college training

   C. have some specialized training

   D. graduate from high school

6. A career is

   A. a type of basket

   B. the money a person gets paid for working

   C. how good somebody is at doing something

   D. a series of jobs one person has

7. Which of the following must go to college in order to get his job?

   A. Salesman

   B. Accountant

   C. Jeweler

   D. Photographer

8. Which of these school subjects helps a doctor the most?

   A. Social studies

   B. Arithmetic

   C. Spelling

   D. Science

9. Which of these jobs most requires a person to make his own decisions?

   A. A gas station owner

   B. A laboratory technician

   C. A typist

   D. An assembly line worker

10. If your mother washes the dishes and you dry them this is called

   A. economics

   B. allowance

   C. division of labor

   D. profit motive

11. Mr. Block does not have a job. He is

   A. unemployed

   B. advanced

   C. employed

   D. hired

12. Denise and Charles are very different people. In order to get a job done together, they must

A. leave each other alone

B. pretend they like each other

C. ignore each other

D. accept each other's differences

13. Which of these is a product?

A. A mountain

B. A car

C. A career

D. A star

14. A person might change from a job as a door-to-door salesman to a job as a shoe store salesman because he wanted

A. to have more independence

B. to work longer hours

C. to work indoors

D. to sell a product

15. Which of these jobs has the most to do with keeping a community healthy and clean?

A. Dishwasher

B. Garbage collector

C. Zoo keeper

D. Repairman

16. Laura lives in Florida; a job she might have at home is

A. shoveling snow

B. going swimming

C. climbing palm trees

D. mowing the lawn

17. People who live in the same neighborhood are

A. a city

B. a housing project

C. a family

D. a community

18. Jan is using a service when she

A. rides the bus

B. buys a dress

C. plays ball with a friend

D. reads a book

19. Most people with jobs work

A. a few months a year

B. part-time

C. when they want to buy something

D. most of the year

20. Which of these people works in transportation?

A. Crane operator

B. Bus driver

C. House builder

D. Telephone operator

21. People must depend on each other because

A. they know each other

B. they have the same values

C. they need things other people make

D. they live close to each other

22. Which of the following school subjects would be most helpful to a secretary?

A. Spelling

B. History

C. Music

D. Arithmetic

23. Which of these is a service?

A. Pharmacy

B. Dry cleaners

C. Supermarket

D. Ice cream store

24. If an automobile factory closes in your city then

A. there will be a surplus of cars

B. more mechanics will be needed

C. there will be higher unemployment among auto workers

D. People will not be able to buy cars in your city

25. A person who likes a job that involves some physical risk would enjoy a career as

A. a construction worker

B. a musician

C. a computer operator

D. a gardener

26. If a student wanted to find out what jobs were currently available in his town he would go to the

A. library

B. chamber of commerce

C. state employment agency

D. workman's compensation board

27. Which factor should be most important in hiring an employee?

A. How much training the person has

B. Whether the person is a man or woman

C. What hobbies the person has

D. How large the person's family is

28. The best way to get a group project done is for students to

A. work together to get each part done

B. work alone to see who can do it best

C. elect one person to do the job

D. try to finish as fast as possible

29. Which of the following has the most freedom in setting up his or her own working hours?

A. Construction worker

B. Stewardess

C. Door-to-door salesman

D. Teacher

30. To give correct change a grocery clerk must learn

A. reading

B. arithmetic

C. social studies

D. science

31. When a group of workers stop working to force their employer to make changes this is a

A. budget

B. union

C. vacation

D. strike

32. One hundred years ago mail was delivered by pony express. The mailman's job has changed because

A. there are fewer ponies in the country

B. trucks and planes are faster

C. there are more states in the union

D. the weather is different now

33. Goods are usually made in a

A. hospital

B. library

C. factory

D. bank

34. You do not have to finish high school to become

A. an accountant

B. a chemist

C. a teacher

D. a waitress

35. Because Mary is good at reading maps she can

A. go shopping for her mother

B. babysit for her little brother

C. pick a TV program

D. help the family plan for a trip

PART 2 - DIRECTIONS:

Please read each statement to yourself while I read it out loud. There are no right or wrong answers. Just check the box which best answers the statement for you.

Here is a sample.

	Yes	Don't Know	No
I would like to earn money.	✓		

If you agree with the statement that you would like to earn money, check "Yes" as shown.

If you don't know or have no opinion, then check "Don't Know".

If you disagree, then check "No".

	Yes	Don't Know	No
1. I am too young to think about what I want to do when I grow up.			
2. Students should be taught about jobs in school.			
3. I like to read about the work people do.			
4. My parents can teach me everything I need to know about jobs.			
5. Women must choose between having a job and having a family.			
6. The only way to learn about a job is to get the job and see what it is like.			

	Yes	Don't Know	No
7. I think I will like working when I grow up.			
8. Teachers tell us a lot about jobs.			
9. What my friends think is bad is sometimes different from what my parents think is bad.			
10. What I learn in school will help me find a job someday.			
11. People who are going to college don't have to think about jobs until they get to college.			
12. I can only really like people who are the same as I am.			
13. I use the things I learn in school when I'm at home.			
14. I can do some school subjects better than my classmates.			
15. Once you have a job you don't have to make any more career decisions.			
16. Important things can only be learned in school.			
17. Jobs with high pay are more important than jobs with low pay.			
18. I have thought about the kind of job I might have after I leave school.			

EXHIBIT E

FIFTH GRADE STUDENT TEST INSTRUMENT USED IN MEASURING PROGRAM IMPACT ON PUPIL PERFORMANCE

POLICY STUDIES IN EDUCATION
52 VANDERBILT AVENUE • NEW YORK, N.Y. 10017 • 212 • 684 • 6940

DIRECTIONS TO ADMINISTRATOR

INTRODUCE YOURSELF TO TEACHER

INTRODUCE YOURSELF TO STUDENTS AND READ:

The people I work with are working on some materials for elementary school students. The work we are going to do is not part of your regular class work. Your answers will not be used to grade you. Your teacher will not even see them because I will take them back to my office after I collect them and we will use them there.

But, because of the importance of these materials, I want you to do the best job you can in answering the questions I am going to read to you. These same questions are used with students in other grades so do not be concerned if some seem very hard.

DOES EVERYONE HAVE A PENCIL?

I will give each of you a booklet. Please fill in your first and last name, your teacher's name, and your school on the first page then we will all start together.

Now put your pencil down and look at Part 1 - Directions.

POLICY STUDIES IN EDUCATION

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NAME _____

TEACHER _____

SCHOOL _____

PART 1 - DIRECTIONS:

I'll read each question out loud, then I'll read the choices. You should circle the letter next to the answer you think is best. Choose only one answer. If you change your mind or make a mistake be sure you erase or cross out the wrong answer and mark the correct one. Please don't say any answer out loud.

Here is a sample.

Which worker picks up and brings mail to people?

A. A fireman

B. A policeman

(C.) A postman

D. A teacher

A postman is the best answer, so you would draw a circle around the letter "C" as shown.

Now begin with number 1.

1. The best way to get a group project done is for students to

A. elect one person to do the job

B. try to finish as fast as possible

C. work alone to see who can do it best

D. work together to get each part done

2. In order to do a better job a person should

   A. be paid in advance

   B. plan what he is going to do

   C. try to finish first

   D. tell other people what he is going to do.

3. One hundred years ago mail was delivered by pony express. The mailman's job has changed because

   A. there are fewer ponies in the country

   B. trucks and planes are faster

   C. there are more states in the union

   D. the weather is different now

4. If a student wanted to find out what jobs were currently available in his town he would go to the

   A. library

   B. chamber of commerce

   C. workman's compensation board

   D. state employment agency

5. Which of these is a service?

   A. Dry cleaner

   B. Supermarket

   C. Pharmacy

   D. Ice cream store

6. When a group of workers protest by refusing to buy a product or to use a service this is called

   A. a union

   B. a boycott

   C. a profit

   D. a strike

7. When hiring a scientist, an employer should be most interested in his or her

   A. physical strength

   B. personality

   C. interests

   D. previous training

8. Profit is money

   A. needed to set up a business

   B. borrowed to pay for things

   C. remaining after you pay for costs

   D. paid to people for working

9. Which area will have the greatest number of jobs by the time you graduate from high school?

   A. Professional jobs

   B. Farming jobs

   C. Service jobs

   D. Production of goods

10. If an automobile factory closes in your city

   A. there will be a surplus of cars

   B. people will not be able to buy cars in your city

   C. there will be higher unemployment among auto workers

   D. more mechanics will be needed

11. Which of the following would be most likely to cause a conflict between a foreman and a worker?

   A. Personal behavior on the job

   B. Fringe benefits

   C. Wages

   D. Vacations

12. A worker is called an apprentice if he or she is

    A. receiving experience which leads to mastery of a trade

    B. recently employed in his or her first job

    C. attending technical school with the consent of his or her parents

    D. employed in a large factory

13. Minimum wage is

    A. the money left out of a salary after income tax is withheld

    B. the lowest hourly pay rate allowed by the government

    C. how old you must be before you can hold a job

    D. the amount an employee can earn without paying taxes

14. If the price of cake and cookies goes up this might be due to

    A. a shortage of iron in the country

    B. a larger supply of baked goods in your state

    C. sugar cane crop failure in South America

    D. a surplus of flour in the area

15. A person who likes to do a variety of tasks during the workday might choose either of these two jobs:

    A. Politician or company owner

    B. Package wrapper or barber

    C. Dentist or typist

    D. Assembly line worker or file clerk

16. An organization formed by workers to protect their rights is

    A. a college

    B. a company

    C. a business

    D. a union

17. Which of these is <u>least</u> important to consider when deciding on a career?

A. Your interests

B. The availability of jobs

C. The amount of education needed

D. Your teacher's interests

18. Anyone who is interested in astronomy

A. likes to learn about the stars

B. lives near a planetarium

C. is skilled at using a telescope

D. gets good grades in science

19. Automation can best be described as

A. running machines overtime

B. using workers to control different machines

C. using machines instead of people for jobs

D. running a business in a very efficient way

20. Some jobs require a worker to get his instructions from a manual. Which school subject would most help a worker to do this?

A. Arithmetic

B. Reading

C. Science

D. Social studies

21. Something you feel is important to you is called

A. an assignment

B. a value

C. an ability

D. a schedule

22. A magazine editor, a photographer, and a telephone operator all work in the area of

A. hospitality and recreation

B. business and office

C. manufacturing

D. communications

23. Which of the following has the most freedom in setting up his or her own working hours?

A. A construction worker

B. A stewardess

C. A door-to-door salesman

D. A teacher

24. The price of diamonds is affected most by

A. the difficulty in finding diamonds

B. the difficulty in advertising diamonds

C. the difficulty in transporting diamonds

D. the difficulty in using diamonds

25. An engineer, a carpenter, a sales clerk, and an astronaut must all be good at

A. arithmetic

B. geography

C. typing

D. science

26. Which factor should be most important in hiring an employee?

A. Whether the person is a man or woman

B. What hobbies the person has

C. How much training the person has

D. How large the person's family is

27. Who can become a nurse?

A. Women only

B. Men only

C. Men and Women

D. Young people only

28. Which of these is a fringe benefit?

A. A contract

B. Medical insurance

C. Wages

D. Income tax

29. In which of the following would a conflict of values be most likely to occur?

A. A baseball player who likes to run

B. A craftsman who likes to work with his hands

C. A traveling salesman who likes to spend a lot of time with his family

D. A teacher who likes to read a lot

30. Very few doctors in this country are women because

A. women are not smart enough to get into medical school

B. women would rather be mothers

C. women are not encouraged to become doctors

D. women do not like to be doctors

31. A department store owner cannot open a new store unless

A. many customers shop in the store

B. the opening is advertised in the paper

C. the sales clerks all report to work

D. his merchandise is delivered

32. An agreement about working conditions is

A. workman's compensation

B. a fringe benefit

C. overtime

D. a contract

33. A factory needs to have rules for workers to follow in order to

A. get all the work done

B. increase workers' wages

C. prevent fights

D. slow down production

34. A plan for a person to spend and save certain amounts of his income is

A. a bill

B. a tax

C. a sale

D. a budget

35. A person who likes a job that involves some physical risk would enjoy a career as

A. a computer operator

B. a construction worker

C. a gardener

D. a dentist

36. Which of these jobs offers the most chance for promotion?

A. A salesman in a neighborhood shoe store

B. A salesman in a large insurance company

C. a grocery clerk

D. a door-to-door salesman

37. If your mother washes the dishes and you dry them this is called

A. profit motive

B. allowance

C. division of labor

D. economics

38. Which of the following is not a choice a person can make?

A. What jobs are open

B. Which hobbies to have

C. How much education to get

D. What career to follow

39. A manager is someone who

A. completes the last step in making a product

B. directs the work of others

C. owns a company

D. works harder than other people.

40. Mr. Roberts is hired by a furniture company. He is _____ of the company.

A. a customer

B. an employee

C. an owner

D. an employer

PART 2 - DIRECTIONS:

Please read each statement to yourself while I read it out loud. There are no right or wrong answers. Just check the box which best answers the statement for you.

Here is a sample.

	Yes	Don't Know	No
I would like to earn money.	✓		

If you agree with the statement that you would like to earn money, check "Yes" as shown.

If you don't know or have no opinion, then check "Don't Know".

If you disagree, then check "No".

	Yes	Don't Know	No
1. I am too young to think about what I want to do when I grow up.			
2. Students should be taught about jobs in school.			
3. I like to read about the work people do.			
4. My parents can teach me everything I need to know about jobs.			
5. Women must choose between having a job and having a family.			
6. The only way to learn about a job is to get the job and see what it is like.			

	Yes	Don't Know	No
7. I think I will like working when I grow up.			
8. Teachers tell us a lot about jobs.			
9. What my friends think is bad is sometimes different from what my parents think is bad.			
10. What I learn in school will help me find a job someday.			
11. People who are going to college don't have to think about jobs until they get to college.			
12. I can only really like people who are the same as I am.			
13. I use the things I learn in school when I'm at home.			
14. I can do some school subjects better than my classmates.			
15. Once you have a job you don't have to make any more career decisions.			
16. Important things can only be learned in school.			
17. Jobs with high pay are more important than jobs with low pay.			
18. I have thought about the kind of job I might have after I leave school.			

EXHIBIT F

TEACHER QUESTIONNAIRE USED IN

MEASURING PROGRAM IMPACT ON PUPIL PERFORMANCE

POLICY STUDIES IN EDUCATION

52 VANDERBILT AVENUE • NEW YORK, N.Y. 10017 • 212 • 684 • 6940

School _____

Grade _____

Your class has been randomly selected to participate in a study which will help us evaluate the Career Education Program in the district. The tests we are administering will be scored as a group based upon whether your school is one of the Career Education Pilot Schools or not. The tests will never be scored by class or by individual students. We do however need some information about your students to assist us in working with the tests after they are completed. We would like you to list the first and last names of all students present in your class today and give us some background information on them.

Please list the names of all students present in your class today	Date of Birth Month/Year	Sex M/F	Background (check one)							
			American Indian	Black	Mexican American	Oriental	Puerto Rican	Spanish surname	White	Other
Sample: Bill Shaw	10/65	M		X						
1.	/									
2.	/									
3.	/									
4.	/									
5.	/									
6.	/									
7.	/									

Please list the names of all students present in your class today	Date of Birth Month/Year	Sex M/F	Background (check one)							
			American Indian	Black	Mexican American	Oriental	Puerto Rican	Spanish surname	White	Other
8.	/									
9.	/									
10.	/									
11.	/									
12.	/									
13.	/									
14.	/									
15.	/									
16.	/									
17.	/									
18.	/									
19.	/									
20.	/									
21.	/									
22.	/									
23.	/									
24.	/									
25.	/									
26.	/									
27.	/									
28.	/									
29.										
30.										

To better understand the results of these tests we would also like to know a few things about your teaching experience and about your use of career education, if any. Both teachers in the Career Education Pilot Schools and teachers in non-career education schools will be answering these questions, and we realize that the answers will range from high involvement with career education to no involvement at all. Please just answer according to your own experiences. This is not intended in any way to be an evaluation of teachers or their classroom activities, and, as stated above, results will never be reported by school, by class, or by individual student.

1. How many years have you been teaching? (check one)

_____ Less than 1 year
_____ 1-2 years
_____ 3-5 years
_____ 6-10 years
_____ 11-15 years
_____ More than 15 years

2. What is your highest level of education?

_____ Bachelor's Degree
_____ Bachelor's Degree and some further work
_____ Master's Degree
_____ Master's Degree and some further work
_____ Doctor's Degree

3. Are you (check one)

_____ American Indian
_____ Black
_____ Mexican American
_____ Oriental
_____ Puerto Rican
_____ Spanish surname
_____ White
_____ Other (Please specify) _____

4. During the school year, how many people visited your classroom to talk about their jobs and the kind of work they do? For example, a businessman, mechanic, dietician, or lawyer. (check one)

_____ None

_____ 1
_____ 2
_____ 3
_____ 4
_____ 5
_____ 6
_____ 7
_____ More than 7

5. During this school year, how many trips did your class make to observe work being performed? For example, places where goods were sold, products were made, and services were provided, such as a department store, a manufacturing plant, or a bank. (check one)

_____ None

_____ 1
_____ 2
_____ 3
_____ 4
_____ 5
_____ 6
_____ 7
_____ More than 7

6. Have you participated in in-service or other training in career education since September 1, 1973 (during this school year or last school year)? (check one)

_____ No
_____ Yes --- What information was included (check as many as apply)

_____ orientation to career education
_____ information about the world of work
_____ instructional objectives of the career education program in your school system
_____ instructional materials available in career education
_____ curriculum development in career education
_____ teaching methods in career education
_____ use of media in career education
_____ career guidance activities
_____ your role in career education
_____ role of other school staff in career education
_____ other (please specify)_____
_____

7. What kinds of career education materials and resources have you used this year? (check one)

_____ none

_____ list of career education instructional objectives
_____ career education curriculum guides
_____ individual career education lessons
_____ audio-visual products in career education
_____ bibliographies of career education materials
_____ catalogs of community speakers
_____ catalogs of community trips
_____ student materials, books, and games for career education
_____ newsletters about career education throughout the school system
_____ student assembly programs in career education
_____ other (please specify) _____

8. Which of the following support services have been provided for you by the career education project staff or someone else this year? (check as many as apply)

_____ none

_____ make arrangements for career education speakers
_____ make arrangements for career education trips
_____ assist in planning career education activities
_____ locate and obtain career education instructional materials
_____ teach career education in your classroom
_____ assist in teaching career education lessons or activities
_____ help teachers develop career education materials
_____ accompany your class on career education trips
_____ other (please specify) _____

9. When did you begin using career education activities or lessons with students (check one)

_____ I do not use career education activities or lessons with students

_____ I began using career education since September 1, 1974
_____ I began using career education between September, 1973 and September, 1974
_____ I began using career education before September, 1973

10. About how many hours per week do you carry out career education activities with students? (check one)

_____ none

_____ less than 3 hours
_____ 3 - 5 hours
_____ 6 - 10 hours
_____ 11 - 20 hours
_____ more than 20 hours

Thank you very much for your help.

LASTING EFFECTS ACHIEVED BY THE PROJECT

In its two years of operation, the Yonkers School District Career Education Project has achieved a number of lasting effects which will continue to benefit the district during future years. Some of the lasting effects are described below in terms of continuing impact of the project on project staff, instructional materials, central office staff, principals, junior high school and high school teachers, elementary teachers, parents and the community, and students.

Project Staff

During the two years of operation of this project, the seven project staff members have gained both knowledge and experience in the area of career education. Four of the staff members are still employed by the district, several in key positions. Even if these staff members do not have official responsibility for career education in the future, they will continue to use the knowledge and experience they have gained in recent years and will serve as a valuable informal resource for staff throughout the district. Hopefully, the district will find some way of utilizing their abilities in this area in an official career education capacity.

Instructional Materials

One area of impact has been instructional materials used in the district. The project staff have screened and reviewed many commercial and non-commercial career education materials produced throughout the country. They have prepared a bibliography of these materials which is currently in the hands of many teachers and librarians. They have also obtained many materials for the district and these will continue to

circulate upon teacher request. In addition, they consulted with many teachers this spring as they ordered new materials for next year's teaching period. Teachers in many buildings have ordered career education materials for daily classroom use.

Another important impact the project staff have had on the use of instructional materials has resulted from the many fine products created by the project staff. Although the Newletter and the Lesson of the Week will not continue without the project staff, the Career Education In-Service Manual, the student-produced career education media products, and many other instructional materials will continue to be used by teachers who have learned their value.

Central Office Staff

Throughout the two years of project operation, the project director and his staff have worked to increase the awareness of career education among district administrators. They have been extremely effective in these efforts. As one example, the Assistant Superintendent for Elementary Instruction has become both knowledgeable and enthusiastic about career education. He has requested that principals make career education one of their three primary objectives for next school year. He has also been influential in obtaining a district committment of $50,000 earmarked for career education use. This is a significant achievement of the project.

Principals

Principals throughout the district have become more aware of career education since the project began. Elementary school principals, a prime

target of the project, have definitely shown their enthusiasm for career education. The many efforts of the 16 elementary principals involved in career education workshops this spring have been described at length in previous sections. Their increased leadership abilities and increased committment to career education will continue to benefit the district and to affect an even greater number of teachers than have been involved thus far.

Junior High School and High School Teachers

Junior high school and high school teachers have gained some awareness of career education just through knowledge of the project at the elementary level. A number of them, who had a particular interest in career education, participated in in-service training offered by the project staff. Their enthusiastic response to this workshop, their increased knowledge of career education, and their favorable attitudes toward career education are all recorded in previous sections of this report.

Elementary Teachers

Elementary teachers were the primary target of the project staff's efforts for the past two years. Their enthusiasm, knowledge, and hard work in the area of career education have been documented in several previous sections. Teachers demonstrated initially positive attitudes towards career education, responded favorable to the many in-service workshops, and reported extensive exposure to and positive attitudes toward career education. The many spring requests for assistance in ordering career education materials for next year indicates that elementary

teachers will continue to use the knowledge and experience they have gained with the assistance of the project staff.

Parents and the Community

Parents and the community have responded favorably to career education since the beginning of the project. Although initial advisory council efforts were not entirely successful, work with the Parent Teachers Association in the pilot schools has been a success this year. Many community residents and businessmen have also come to support the program as they have learned ways in which they could contribute.

Students

PSE attempted to measure differences in student learning caused by the project. Unfortunately, teachers of those students in the district who were to serve as control groups, and who therefore should have had no exposure to career education, have spent almost as much time on career education activities and used almost as many materials as experimental group teachers. PSE therefore, found no significant difference between experimental and control group students. At any rate, teachers and principals report that students are interested in career education and relate their interest to learning in many subject areas. Some changes in student attitude occurred in both the experimental and control groups. Most of these changes were favorable to career education or to the program, although all were not.

Summary

It is PSE's opinion that the effects of this project will remain in

the district for many years. Many of those who were introduced to career education by the project are now its strong advocates and will continue to expand implementation of career education on many grade levels. Although we were unable to find significant differences in student learning between pilot and non-pilot schools at this time, it seems likely that such differences could be found if a true control group were selected. Career education has a good start based upon the many positive responses of parents, teachers, principals, and central office staff as well as the continuing efforts of the project staff members in whatever new positions they may hold within the district. We feel that a good start has been made and would recommend that the district continue its efforts in this area.

Instructional Materials Developed By The Project

SYRACUSE:

Life Centered Curriculum
- In Education For Life (Program description)
- Teacher's Manual (For use with instruction units)
- Instructional Units

Library Resource
- Manual (List of materials that accompany each unit)

UNIT TITLE	LEVEL	STRAND	
Little People	Lower Primary	Self-awareness	1st
The Family	Lower Primary	Self-awareness	and
Our Community Today	Lower Primary	Educational awareness	2nd
Goods and Services	Lower Primary	Career awareness	grade
The World of Me	Upper Primary	Self-awareness	3rd grade
The World of Us	Upper Primary	Self-awareness	" "
Hometown-Syracuse	Upper Primary	Educational awareness	" "
Leisure Time	Upper Primary	Career awareness	" "
Changing Roles in the World of Work	Upper Primary	Career awareness	" "
Famous People as Workers	Lower Intermediate	Self-awareness	4th grade
Communications	Lower Intermediate	Self-awareness	" "
Syracuse Long Ago	Lower Intermediate	Educational awareness	" "
Contributions of Immigrants	Lower Intermediate	Educational awareness	" "
People Seek New Places	Lower Intermediate	Career awareness	" "
Rewards for Work	Lower Intermediate	Career awareness	" "
*Who am I? - Where am I Going?	Mid-Intermediate	Self-awareness	5th grade
North and South of the Border	Mid-Intermediate	Educational awareness	" "
Let Freedom Ring	Mid-Intermediate	Educational awareness	" "
From Coast to Coast	Mid-Intermediate	Educational awareness	" "
The Story of Our Country	Mid-Intermediate	Educational awareness	" "
The Story of Labor	Mid-Intermediate	Career awareness	" "
Consumerism	Mid-Intermediate	Career awareness	" "
A World of People	Upper Intermediate	Self-awareness	6th grade
World Communities	Upper Intermediate	Educational awareness	" "
Growth and Spread of Civilization	Upper Intermediate	Educational awareness	" "
The Worlds of Tomorrow	Upper Intermediate	Career awareness	" "
**Occupational Clusters	Upper Intermediate	Career awareness	" "
Economic Challenges	Upper Intermediate	Career awareness	" "

* This Unit Includes:

The World of Work Student Workbook - 5th grade
The World of Work Teacher's Manual - 6th grade

(Appendix E cont.)

** This Unit Includes:

Occupational Clusters Student Workbook - 6th grade
Occupational Clusters Teacher's Manual - 6th grade
21 Individualized Career Studies - Three reading levels, 6th grade
The Skill Center Student Workbook - 6th grade

WORKERS:

Career Education Audio-Visual Material (annotated)
Career Education Flash Cards
Career Education Games
Career Education Infused Lessons, K-6 (art, language arts, math, social studies, science, physical education)
Career Education Inservice Course
Career Education Instructional Objectives
Career Education Monograph Series:

- The How and Why of Career Education, Vol. 1, No. 1
- An Infusion strategy for Career Education, Vol. 1, No. 2
- Career Approach to media Development - Producing slide and slide/tape presentations, Vol. 1, No. 3
- Career Education Implications for Special Education, Vol. 1, No. 4
- Career Expressions of Women, Vol. 1, No. 5

Career Education Presentables (aids for universities and school districts seeking to produce programs)
Collections of Learning Activies (COLAS)
Community Resource Handbook
Media Workshop Guide
Monthly Newsletters
Reading Improvement Through Career Education (RICE)
Self-Awareness Kit for Early Elementary Students
Valuing Approach Kit

END